# "A MIX METHODOLOGY STUDY EVALUATING PERCEPTIONS AMONG PHARMACY STAKEHOLDERS IN TWO STATES OF LIBYA TOWARDS THE NEED FOR SOCIAL PHARMACY COURSES IN PHARMACY CURRICULUM"

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**UNIVERSITI SAINS MALAYSIA**
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**by**

**OMAR SAAD SALEH ABRIKA**

**Thesis submitted in fulfillment of the requirements for the degree of Doctor of Philosophy**


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## DEDICATION

***I dedicate this work to my beloved parents, my loving wife and my kids (Ahmed, Akram and Asma). My entire academic achievements together with this piece of work were made possible due to my family's encouragement of my continuous education despite numerous hardships at various stages of my life.***

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### Journal Publications

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1. **Abrika, O. S. S.**, Hassali, M. A. & Abduelkarem, A. R. (2011) Social Pharmacy Courses are often Neglected in the Developing World. *American Journal of Pharmaceutical Education,* 75, (4): 65.

2. **Abrika, O. S. S.**, Hassali, M. A. & Abduelkarem, A. R. (2012) Importance of Social Pharmacy Education in Libyan Pharmacy Schools: Perspectives from Pharmacy Practitioners. *Journal of Educational Evaluation for Health Professions,* 9, 6.

3. **Abrika, O. S. S.**, Hassali, M. A. & Abduelkarem, A. R. (2012) Perceptions of Libyan Pharmacy Academics on the Importance of Social Pharmacy Subjects in the Current Pharmacy Undergraduate Curriculum. Journal of Advanced Pharmacy Education & Research, 2, (1): 1-10.

4. **Abrika, O. S. S.**, Hassali, M. A. & Abduelkarem, A. R. (2012) Perceptions toward the Need of Social Pharmacy Courses in Libya: Findings from Cross-Sectional Survey among Senior Pharmacy Students. *Prime Journals*, 2, (3): 237-243.

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## Conference Presentations

1. **Abrika, O. S. S.**, Hassali, M. A. & Abduelkarem, A. R. (2011) Perceptions of Libyan pharmacy practitioners on the importance of social pharmacy subjects in the current pharmacy undergraduate curriculum. MPS-Pharmacy Scientific conference. 21st – 23rd October 2011, Hotel Istana, Kuala Lumpur Malaysia.

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## LIST OF ABBREVIATIONS

| | | |
|---|---|---|
| % | = | Percent Sign. |
| AACP | = | American Association of College of pharmacy |
| ACPE | = | American Council on Pharmaceutical Education |
| B.S.c | = | Bachelor of Science |
| D. Pharm | = | Diploma in Pharmacy |
| DDC | = | Drugs in Developing Countries |
| DSAP | = | Discipline of Social and Administrative Pharmacy |
| etc | = | Excetra like on |
| FIP | = | International Pharmaceutical Federation |
| GDP | = | Gross Domestic Product |
| HICT | = | International College of Technology |
| *i.e.*, | = | Latin phrase id est. English “for example” and “that is” |
| $km^2$ | = | Square kilometer |
| NCIP | = | Nuffield Committee of Inquiry into Pharmacy |
| PA | = | Pharmacy Academic |
| B. Pharm (Hons) | = | Bachelor of Pharmacy (Honors’) |
| Pharm. D | = | Doctor of Pharmacy |
| PhD | = | Doctor of Philosophy |
| PP | = | Pharmacy Practitioner |
| P-value | = | Probability value that the null hypothesis is true. |
| SD | = | Standard Deviation |
| SP | = | Social Pharmacy |

| | | |
|---|---|---|
| SPS | = | Senior Pharmacy Student |
| SPSS | = | Statistical Package for the Social Sciences |
| UK | = | United Kingdom |
| US | = | United States |
| USA | = | United States of America |
| USM | = | Universiti Sains Malaysia |
| WHO | = | World Health Organzation |

# "SATU KAJIAN KEADAH GABUNGAN BAGI MENILAI PERSEPSI PEMEGANG TARUH FARMASI DI DUA NEGERI LIBYA TERHADAP KEPERLUAN KURSUS FARMASI SOSIAL DALAM KURIKULUM FARMASI"

## ABSTRAK

Profesion farmasi di kebanyakan negara di dunia telah berubah tahun demi tahun disebabkan oleh evolusi praktis farmasi daripada perkhidmatan berorientasikan produk kearah perkhidmatan berorientasikan pesakit. Dalam kajian ini, terdapat keperluan bagi para pengamal farmasi semasa untuk melengkapkan diri dengan kemahiran sosial dan kemanusiaan yang sewajarnya untuk memberi perkhidmatan yang lebih baik kepada populasi. Sebagai tindak balas kepada keperluan ini, di kebanyakan negara-negara maju , subjek farmasi sosial telah diintegrasi secara formal ke dalam kurikulum farmasi untuk persediaan bakal para pengamal yang holistik yang mana mampu untuk memahami dan bertindak balas terhadap aspek sosio-tingkah laku kesihatan dan penggunaan ubatan di kalangan pesakit. Walaupun penggabungan topik farmasi sosial ke dalam kurikulum farmasi di negara-negara maju telah dipromosikan sejak dua dekad yang lalu, namun penerimaan subjek-subjek tersebut sebagai topik utama di kebanyakan negara membangun didokumenkan adalah lemah dan kes yang sama berlaku di Libya. Kefahaman terhadap komponen-komponen farmasi sosial boleh membantu dalam mencapai misi yang penting dalam penyediaan penjagaan farmaseutikal. Maka, adalah penting sekali untuk mengetahui pengetahuan dan persepsi para akademik, pengamal dan pelajar tahun akhir bidang farmasi mengenai konsep farmasi sosial dalam kurikulum farmasi Libya pada masa ini.

Tesis ini melaporkan penemuan dengan menggunakan kaedah campuran berurutan (sequential mixed-methodology) untuk meneroka perspektif-prespektif terhadap keperluan kursus farmasi sosial dalam kalangan para akademik, pengamal dan pelajar farmasi dalam sistem pendidikan farmasi di Libya pada masa ini. Data kualitatif telah dikutip melalui temuduga berhadapan dengan para akademik dan pengamal farmasi. Takat ketepuan telah dicapai selepas temuduga dengan akedamik farmasi yang ke-12 dan pengamal farmasi yang ke-10. Kombinasi tema priori dan tema yang didapati daripada analisa kandungan telah mengenal pasti jurang dalam pengetahuan dan persepsi terhadap pendidikan farmasi sosial di kalangan para akademik dan pengamal farmasi. Berdasarkan kepada penemuan tersebut, borang soal selidik telah direka dan selepas proses pengesahan, borang tersebut telah diagihkan kepada 90 para akademik farmasi, 450 pelajar tahun akhir farmasi dari di buah universiti di Libya (Universiti Alfateh dan Universiti Perubatan Alarab) dan 600 pengamal farmasi. Sejumlah 68 responden akademik farmasi (75.5%), 272 pelajar farmasi tahun akhir (68.0%) dan 479 pengamal farmasi (78.1%) telah melengkapkan borang kajian selidik tersebut. Majoriti daripada responden (71.7%) telah melaporkan bahawa mereka tidak diajar kursus farmasi sosial di institusi mereka ($p = 0.002$). Separuh daripada responden sangat bersetuju dengan keperluan untuk mendedahkan mahasiswa farmasi pada masa hadapan dengan pengetahuan farmasi sosial, dan hampir dua perlima sangat setuju bahawa adalah sangat berguna untuk mengajar konsep farmasi sosial kepada mahasiswa farmasi di Libya. Tiga puluh lima peratus daripada para akademik menunjukkan keyakinan dalam keupayaan ahli farmasi sosial untuk mempengaruhi sistem penjagaan kesihatan. Lebih separuh daripada responden (59.9%) tidak pernah mendengar terma “farmasi sosial”. Walaubagaimanapun, kebanyakan responden telah diajar kursus yang berkaitan dengan

farmasi sosial (71.8%) di fakulti di bawah pelbagai tajuk alternatif. Majoriti daripada responden (89.1%) melaporkan bahawa mereka tidak diajar farmasi sosial, walaubagaimanapun, terdapat beberapa kursus yang berkaitan dengan farmasi sosial (sosiologi, psikologi atau antropologi) dalam kurikulum pra-siswazah farmasi mereka. Majoriti daripada responden (60.6%) telah melaporkan bahawa mereka tidak diajar kursus berkaitan dengan farmasi sosial di institusi mereka ($p = 0.002$). Merujuk kepada persepsi mereka terhadap keperluan kursus farmasi sosial, kebanyakannya (74.7%) merasakan bahawa pengetahuan yang didapati daripada kursus-kursus ini dapat membantu dalam berinteraksi dengan pesakit atau pelanggan; terdapat respons yang neutral (49.3%) untuk pengalaman kesukaran responden dalam berurusan dengan pesakit atau pelanggan.

Secara keseluruhannya, dapatan-dapatan ini mengesyorkan yang sebenarnya ada keperluan untuk memasukkan kursus-kursus farmasi sosial ke dalam kurikulum farmasi sekarang di Libya demi penambahbaikan perkhidmatan-perkhidmatan farmasi.

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## ABSTRACT

The pharmacy profession in many parts of the world had changed over the years due to the evolution of pharmacy practice from product to patient oriented services. Within this context, there is a need for the modern pharmacy practitioner to be well-equipped with appropriate social and human skills in order to better serve the population. In response to this need, in majority of developed nations, social pharmacy subjects have been formally integrated in the pharmacy curriculum in order to prepare a holistic future practitioner who will be able to understand and respond towards the socio-behavioural aspects of health and medication use among patients. Although the incorporation of social pharmacy topics into the pharmacy curriculum of developed countries has been promoted during the last two decades, the inclusion of these subjects as standard topics in many developing countries is poorly documented and similar case prevails in Libya. Understanding social pharmacy components can really help to fulfil the important mission for the provision of pharmaceutical care. It is therefore imperative to ascertain the knowledge and perceptions of pharmacy academics, practitioners and final year pharmacy students about the concepts of social pharmacy in the current Libyan pharmacy curriculum.

This thesis reports the findings using sequential mixed-methodology to explore perspectives on the need for a social pharmacy course among pharmacy academics, practitioners and final year pharmacy students in the current Libyan pharmacy education

system. The qualitative data was collected through in-depth face-to-face interviews with pharmacy academics and pharmacy practitioners. Saturation point was achieved after the 12th interview with pharmacy academics and after the 10th interview with pharmacy practitioners. A combination of a priori themes and themes emerging from the content analysis identified gaps in the knowledge and perception of social pharmacy education among pharmacy academics and practitioners. Based on the qualitative findings, a questionnaire was designed and following appropriate validation, the questionnaires were distributed to 90 pharmacy academics, 450 to final year pharmacy students from two Libyan universities (Alfateh and Alarab Medical University) and 600 questionnaires distributed to pharmacy practitioners. A total of 68 (75.5%), pharmacy academics 272 (68.0%) of final year pharmacy students and 479 (78.1%) of pharmacy practitioners were completed the survey. The majority of pharmacy academics (71.7%) reported that they were not taught courses in social pharmacy in their institutions ($p = 0.002$). Half of the respondents strongly agreed with the need to instil social pharmacy knowledge in future pharmacy undergraduates to Libyan pharmacy undergraduates. Thirty-five percent of the academics expressed confidence in the ability of social pharmacists to influence the healthcare system. More than half of the final year pharmacy students (59.9%) had never heard the term “social pharmacy”. However, most respondents were taught courses related to social pharmacy (71.8%) in their faculties under various alternative headings. Whereas the majority of respondents (89.1%) reported that they were not taught social pharmacy, they had some courses related to social pharmacy (sociology, psychology or anthropology) in their undergraduate pharmacy curriculum. The majority of the pharmacy practitioners (60.6%) reported that they were not taught courses related to social pharmacy in their institutions ($p = 0.002$). With respect to their

perceptions of the need for social pharmacy courses, most (74.7%) thought that the knowledge gained from these courses would be helpful when interacting with patients or customers; there was a neutral response (49.3%) to the difficulty respondents experienced in dealing with patients or customers.

Overall, these findings suggested that there is need to incorporate social pharmacy courses into the current Libyan pharmacy curriculum for the improvement of pharmacy services provision.

# CHAPTER ONE: GENERAL INTRODUCTION

## 1.1 Introduction

The research reported in this thesis analyzed the perceptions of pharmacy academics, pharmacy practitioners and senior pharmacy students. It was conducted at two Libyan pharmacy faculties: Alfateh University Tripoli and Al-Arab Medical University Benghazi. This research is focused broadly within the field of the sociology of health education, and more narrowly within the field of social pharmacy education. The study used a sequential mixed-methodology utilizing both qualitative and quantitative approaches to explore pharmacy academics, pharmacy practitioners and senior pharmacy students' understandings of their future role in pharmaceutical care services.

The practice of pharmacy is a vital part of a complete health care system. Pharmacists are the principal resource available to patients and other health professionals for assuring appropriate use of medications. The role of the pharmacist in the health care system has been one of the areas of concern and debate in many organizations representing pharmacists around the world (WHO, 1997). Most of these debates have focused on the responsibilities of the pharmacist in relation to the health care needs of the patient and of the community. Ensuring accurate dispensing of prescribed medicines against prescriptions and providing sound advice on responsible self-medication remain vitally important parts of the service provided by pharmacists. However, recognised for some years that equally important roles are to advise other healthcare professionals on safe and rational use of medicines and to accept responsibility for seeking to ensure that medicines are used safely and effectively by those to whom they are supplied so that maximum therapeutic benefit is derived from treatment. This activity contributes both to the welfare of the individual and the overall improvement of public health (FIP, 2000). Thus the pharmacist tries in collaboration with other healthcare professionals to improve

the clinical and humanistic outcomes of the therapy. Moreover, an efficacious and rational drug therapy is cost-saving, for the patient as well as for the health insurer. A pharmacist delivering pharmaceutical care not only dispenses medication, but also takes responsibility about the outcome of the drug therapy. Pharmaceutical care in community pharmacies encompasses the following activities: Advice about prescribed drugs, to ensure that patients take their medication as correct, as safe and as compliant as possible. Pharmacists, along with all other health professionals, should in the future broaden their professional remit to include the patient's social as well as physical circumstances, and in particular recognize how these two components impacts on the patient's use of medicines (Harding & Taylor, 1993).

There is an emerging challenge to move from curricula that focus on knowledge and skills to curricula that will develop pharmacists as people who will, "think, act, and do things in a way that shows they are truly patient-centered pharmacists (Noble *et al.*, 2011). The assumption underpinning this view is that, if students acquire the necessary knowledge and skills, then they will become pharmacists. This educational approach to the curriculum envisages the view that learning is cognitive and occurs within the individual. A cognitive approach to learning leads us to conclude that all that is needed to become a pharmacist is knowledge and skills (De Armas & Vega, 2011). This view of curriculum within pharmacy education has not changed significantly in recent times. However, the role of pharmacists and the world of healthcare has undergone significant transformation such that an emerging challenge to move from curricula that focus on knowledge and skills to curricula that will develop pharmacists as people who will, "think, act, and do things in a way that shows they are truly patient-centered pharmacists (Droege *et al.*, 2010). 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 members (Strand *et al.*, 2004). The role of the pharmacist is now described as having eight functions: caregiver, decision-maker, communicator, manager, life-long learner, teacher, leader, and researcher (Wledenmayer *et al.*, 2006). Thus, a curriculum that focuses solely on the acquisition of knowledge and skills may not enable such capabilities in 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 learning (FIP, 2008).

In order to accommodate all such changes and to be able to integrate the pharmacist fully into the primary care team, the practice of pharmacy has been dramatically changed over the last four decades. Many schools of pharmacy around the world felt that such dramatic changes should be reflected in appropriate changes to their pharmacy curricula (FIP, 2008). Such issues have already been robustly addressed in many developed countries through the introduction of different educational programmes and the development of different pharmacy practice environments, for example, the philosophy of pharmaceutical care in the USA since 1990, the Pharmacist New Contract in UK since 2004, the Pharm D degree as an undergraduate programme in USA and the Master of Pharmacy degree as an undergraduate programme in UK (Hudson *et al.*, 2007).

To achieve the same goal, many schools of pharmacy in developing countries, including Libya, have either already started or are about to start thinking seriously about how to change their pharmacy education programmes and their pharmacy practice systems.

Unfortunately, the undergraduate pharmacy curricula in many of the universities have not kept pace in terms of regular reviews of the syllabus and the updating of curricula to accommodate all such changes. The situation in most of the Arab and Muslim countries, in particular, may be worse and the obstacles hindering such a change should be thoroughly investigated.

The classification of undergraduate courses differs considerably at both the national and international levels. However, the practice of pharmacy needs to be supplemented with knowledge from the disciplines that deal with people and systems. It has been reported that patients' beliefs and attitudes influence how they use medicine (Britten *et al.,* 2002; Carter *et al.,* 2005; Haynes *et al.,* 2008) and accordingly such issues should be considered when managing a patient's condition. In response to the shortfall in the understanding of human behaviour many, although not all, schools of pharmacy have introduced new courses such as social pharmacy into their undergraduate curriculum. The primary objective of social pharmacy research is to investigate questions and themes concerning pharmacy practice and medicine use individually and collectively in a society (Sorensen *et al.,* 2003). A more informed humanistic and social understanding of patients will help to overcome many of the challenges related to inadequate communication and knowledge gaps which might lead to the misuse of medications and an increase in the rate of hospital admission due to drug-related errors (Sorensen *et al.,* 2003). Despite the fact that the relevance of introducing social and behavioural science courses is clear, the integration of 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 (Grussing, 1987; Ibrahim *et al.,* 1998; Anderson, 2002). One study

(Ibrahim *et al.*,1998) 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 the patient's and consumer's behaviour. More recently, Anderson (2008) believed that social pharmacy is still young and suggested that as long as people are seeking treatment, taking medicines and attempting to improve their health, there remains a rich resource for social pharmacy research and teaching in collaboration with social scientists. However, none of these studies have aimed to explore this topic in relation to Arab countries. This is true of Libya and many other similar counties, and indeed international comparative studies of this type are rare in the Arab world. Therefore, the rationale of the present study was to attempt to explore social pharmacy education among pharmacy academics, pharmacy practitioners and senior pharmacy students in Libya.

**1.2 Justification of study**

The practice of pharmacy and the pharmacy curriculum have undergone marked changes over the last two decades, with some courses declining in importance, while others, such as clinical, social and administrative and pharmacy practice, are given more importance within the curriculum (Shaji & Chadawar, 2007). These changes in curriculum are mainly due to the transformation of the pharmacist's role, from traditional focus on products oriented services to products to that of provision of patients (Ryan & Bissell, 2004).

Increase in healthcare demands with a complex range of medicines as well as a poor adherence to prescribed medicines has forced the pharmacist to become more patient-centered (WHO, 2006a). Direct contact with patients and other healthcare providers helps to achieve maximum patient therapeutic outcome. The paradigm shift in pharmacy

practice took place in 1990, when Hepler and Strand introduced the term "pharmaceutical care is the responsible provision of drug therapy for the purpose of achieving definite outcomes which improve a patient's quality of life" (Hepler & Strand, 1990). Over the next decade, pharmacy organizations and academic training programmes around the world promoted pharmaceutical care as a philosophy and standard of care provision for patients (Farris *et al.*, 2005). In essence, the concept of pharmaceutical care has transformed the pharmacy profession to be more accountable in patient care, especially in ensuring that a patient achieves positive outcomes from drug therapy (Rosemin, 2006). This promotes the pharmacist as a key member of the healthcare team, with additional responsibility for the outcome of medication therapy. As a result, over the years in developed countries, the role of the pharmacist has been adopted to fulfill the increasing public need of better pharmaceutical care in a clinical setting with collaboration from other healthcare providers (Smith, 2007).

On the other hand, pharmacy practice models in developing countries vary significantly from one country to another. Some of the major limiting factors that prevent the enhancement of the pharmacist role include an acute shortage of qualified pharmacists, no dispensing separation practices and a lack of standard practice guidelines.

In recent decades, the incorporation of social pharmacy courses in traditional pharmacy – i.e. pharmacology, physiology, pharmaceutical chemistry, pharmaceutics and clinical pharmacy – has been the major contributor to the changes implemented to pharmacy training and practice worldwide (Hepler & Strand, 1990).

Pharmacists are in an excellent position to meet the need for professionals to assure the safe and effective use of medicines. To do so, pharmacists must assume greater responsibility than they currently do for the management of drug therapies for the

patients they serve. This responsibility goes well beyond the traditional dispensing activities that have long been the mainstay of pharmacy practice. While supervision of the routine medicines distribution process must remain the responsibility of pharmacists, their direct involvement in medicine distribution will decrease, since these routine activities will be handled by qualified pharmacy assistants. However, the number of supervisory activities will increase. Thus, pharmacists' responsibilities must be expanded to include monitoring therapeutic progress, consulting with prescribers, and collaborating with other health care practitioners on behalf of patients. The movement towards pharmaceutical care is a critical factor in this process (Van Mil *et al.,* 2004). Several other factors, including new directions in health policy, changing needs and expectations of the population towards healthcare services and the aspirations of pharmacists for a greater role in its delivery have played a crucial role in the strategies aimed at introducing social pharmacy courses in many institutions teaching pharmacy worldwide (Smith, 2004).

In many schools of pharmacy in Middle East and North Africa, including those in Libya, social pharmacy is nearly non-existent in the standard pharmacy curriculum (Kheir *et al.,* 2008). Libya, like many other developing countries, is lagging behind, and with the irrational use of medications being very common problems are on the rise. At present there are weak policies with regard to regulation, and the quality use of medicines initiative among consumers has led to many irrational practices (Mustafa & Kowalski, 2010). In order to change the current policy, more research employing social pharmacy philosophy is needed. The present study was necessary to establish the current level of existing knowledge and perceptions in the area of social pharmacy.

The interviews were conducted with pharmacy academics and practitioners in order to ascertain the perceptions of both groups. Based on the outcomes from these interviews, further studies were undertaken. This study will have a strong impact on policy makers, who will have to acknowledge the unfortunate fact that one of the most important health professions is being ignored.

The study will serve as a policy document to enhance the role of pharmacists in Libya and guide policy makers to bring about necessary changes in the healthcare system through the support of the authorities and the Ministry of Higher Education. The profession of pharmacy will develop quickly by securing a more mainstream role, that is, the full development and incorporation of the behavioural sciences into the professional 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, practitioners and senior pharmacy students. Therefore, pharmacists should take part in the consultation to ensure that pharmacists are at the forefront of healthcare for patients, now and in future. This will ultimately extend to collaboration with other healthcare professionals, which is currently completely absent.

### 1.3 Research objectives

The aims and specific objectives of this study were:

- To document if there is a need for an undergraduate social pharmacy course in Libya by interviewing pharmacy practitioners.
- To explore the perceptions of pharmacy academics in Libya on social pharmacy education.
- To investigate pharmacy practitioners' perceptions regarding the need for social pharmacy education in the existing pharmacy curriculum in Libya.
- To investigate academic pharmacists' perceptions of their role in the Libyan health care system.
- To investigate final year students' perceptions towards the need for social pharmacy education in the existing pharmacy curriculum in Libya.

### 1.4 Overview of the thesis

Chapter 2 starts with the definition of 'pharmacy'. A brief discussion is written on the role of pharmacist in current context of health care delivery, rational use of medicines and pharmacists' role in developing countries, promoting better pharmacy practice and education: recommendations from WHO and FIP, what pharmacy means for public health and medicine, recent history of social sciences and pharmacy education. The chapter continues with the importance of understanding sociology concepts in pharmacy. Definition and scope history of social pharmacy and why social pharmacy is needed for future pharmacists. The chapter carries on with a thorough review of the literature looking at development of social pharmacy programmes around the world.

Also it discusses the challenges facing social pharmacy education, social pharmacy courses in pharmacy curriculum, implementation of social pharmacy education in developing countries: A case study from Malaysia, dynamics of pharmacy course evolution. This chapter discusses the pharmacy education of Libya, including its structure and health care system, role of pharmacists in different sectors in Libya and an overview of pharmacy education in Libya. Chapter 3 is the general methodology for Phase 1 and Phase II of the main study. Chapter 4 and 5 focuses on the findings from qualitative interviews with pharmacy academics and pharmacy practitioners. Section B of this thesis comprise of chapter 6, 7 and 8, which describe the quantitative surveys involving the perceptions of pharmacy academic, practitioners and senior pharmacy students. Chapter 9 draws the thesis towards its conclusion along with a set of recommendations for future research.

# CHAPTER TWO: LITERATURE REVIEW

## 2.1 Introduction

Despite the tremendous advancement in medical technology during the last decades, the health status of many people worldwide has not yet improved (Travis *et al.*, 2004). This is mainly because of the fact that the health status of the population depends largely on socioeconomic and political factors of the individual and the nation (Bostrom, 2003; Marmot, 2005; Nutbeam, 2008). The current changes in sociopolitical landscape of health care delivery globally also contributed to the lack of access to efficient health care services among some populations, especially in developing countries (Marmot, 2005). Moreover, in most developing countries, the delivery of effective health care services is also hindered by lack of culturally qualified competent health care providers (Dayrit & Dolea, 2006; Naicker *et al.,* 2009). Future health care practitioners need to understand not only the clinical origin of diseases and treatment modalities but also the social and behavioral aspect of health care needs (Havelka *et al.,* 2009). Understanding these aspects will enhance patients' treatment outcomes through a mutual understanding of issues beyond clinical sciences (Dayrit & Dolea, 2006).

Thus, reorienting health care professionals' education to incorporate subjects related to social and behavioral aspect of health is important, but still remains a major challenge for many health fields including pharmacy. Lately, with the tremendous evolution of pharmacy practice in developed nations such as the United Kingdom, Australia and the United States, it becomes evident that pharmacists can contribute more significantly to public health (Anderson *et al.,* 2009). There is now considerable movement among health policy makers and educators in developing the humanistic skills and attitudes of future pharmacists, which is necessary to meet the health care needs of most people. Furthermore, in the last two decades, extensive transitions have been observed in

pharmacy curricula at the global level, mainly with the incorporation of social and behavioural sciences topics under the new field called ‘‘social pharmacy’’ at many pharmacy schools. Initially, ‘‘social pharmacy’’ was synonymous with the social distribution of drug use and ‘‘pharmaco-epidemiology’’, but recently ‘‘social pharmacy’’ has been recognised as involving considerably more than mapping drug use in the population (Harding & Taylor, 1993). It offers a perspective on pharmacy that complements the behavioural and physical science component of the pharmacy curriculum. In a nutshell, it incorporates the social implication associated with the therapeutic and non therapeutic uses of pharmaceutical preparations as examined from the perspective of individual and group behaviour and the social systems that exist between them (Harding & Taylor, 1993). Although a complete discussion linking social sciences with pharmacy is not possible in a single document, a brief historical background on ‘‘social pharmacy’’ education and its needs, with illustrations from a few developed and developing nations who have established social pharmacy programmes, will be described in the following sections.

### 2.2.1 Definition of ‘pharmacy’

The term "pharmacy" is believed to be derived from the Greek word pharmaka, which means "remedy." The Greeks are largely credited with “being among the first people to take a truly scientific approach to the world around them. It is safe to deduce that modern pharmacy holds many of its roots in the practices of the ancient Greeks (Judge, 2009).

The definition of pharmacy was suggested by a joint committee of the National Association of Boards of Pharmacy and the American Association of Colleges of

Pharmacy in 1959 (Clark, 1961). In this definition, special importance was given to the distributive function of pharmacy in over-the-counter sales as well as prescriptions:

"*Pharmacy is that profession which is considered as the art and science of preparation from natural and synthetic sources, suitable and convenient materials for distribution and use in the treatment and prevention of disease. It embraces knowledge of identification, selection, pharmacological action, prevention combination, analysis, and standardization of drugs and medicines. It also includes their proper and safe distribution and use."*

Hence, pharmacy may be defined as "the profession whose function is to serve the public in terms of safeguarding the preparation, compounding, dispensing of drugs; storage and the handling of drugs and medical supplies" (Clark, 1961).

### 2.2.2 Definition of pharmacy education

According to Anderson *et al.*, (2009) the term pharmacy education, refers to the educational design and capacity to develop the workforce for a diversity of settings (e.g. community, hospital, research and development, academia) across varying levels of service provision and competence (e.g. technical support staff, pharmacists and pharmaceutical scientists) and scope of education (e.g. undergraduate, postgraduate, lifelong learning). This multidimensional conceptualization embodies a systematic approach to education development that enables and supports a sustainable expert health care workforce to effectively improve health (Anderson *et al.*, 2009).

### 2.2.3 Role of pharmacist in current context of healthcare delivery

The World Health Organization (WHO) has effectively contributed in encouraging and defending the role of pharmacists worldwide. Although all health care providers and the public are rationally involved in the use of drugs, WHO has recommended a special role

for pharmacists, particularly in quality assurance and the safe and effective administration of drugs (John & John, 2002). The International Pharmaceutical Federation and the WHO came up with the concept of "The seven star pharmacist." According to the WHO, future pharmacists must possess specific knowledge, attitudes, skills and behaviours in support of their roles (Zammit, 2003; WHO, 2006a). Due to the increasing demand of pharmacists required in public health, WHO recommends 1 pharmacist per 2000 population so that optimal healthcare can be delivered. They should be held responsible for the cost, quality and results of pharmaceutical care provided to patients. Furthermore pharmacists act as advisors to physicians and nurses and contribute to policy decisions (Khan, 2007).

### 2.2.4 Rational use of medicines and pharmacists role in developing countries

Pharmacy is concerned with promoting the safe and appropriate use of drugs. Medicine consumer in developing countries has frequently been described as irrational (Smith, 2004). Several factors have contributed to this situation. For instance, in China, a vast majority of the population is restricted by economic status and an insufficient medical care system. As a result, access to drugs is the biggest problem in medical care; the attitudes and behaviours of drug users are extremely complicated (Rui *et al.,* 2006). In Ghana, populations often combine approaches, choosing practitioners and therapies based on health beliefs regarding causation, the symptoms or conditions or other factors (Bierlich, 1995; Denno *et al.,* 1994; Fosu, 1995; Kirby, 1997; Tsey, 1997; Yartey *et al.,* 1993). People also rely on home remedies and herbal products as alternatives to, and in conjunction with, Western medicines (Smith, 2004). Besides these societal factors, pharmaceutical services in developing countries face particular challenges. One of the major problems is the costs to individuals; many patients cannot afford their prescribed

medicines. The second most common factor impeding pharmacy services is the quality of medicines**.** Many pharmaceutical products may be substandard or even dangerous and this combined with poor and inappropriate storage a system makes them useless at the time of sale or consumption. Also, another factor that is increasingly gaining importance is the irrationality in prescription; pressurising advertisement and associated incentives from pharmaceutical companies have been pointed out as a main cause.

### 2.2.5 Promoting better pharmacy practice and education: Recommendations from WHO and FIP

Pharmaceutical sciences and related technologies are developing at a very fast rate, so too the number of new medicines, drug price and a series of social problems. With the increasing globalisation, drug use and other problems related to pharmacy services are likely to increase in the developing countries. The WHO has long believed that pharmacists could make a greater contribution to the provision of health care (WHO, 1988 & 1996). To this end, it has launched many strategies for developing countries. To address the problems of non-availability of essential drugs, the WHO has created the "Action Programme on Essential Drugs". This programme aimed at providing operational support and guidance in the establishment of national drugs policies (WHO, 1992). To combat the increasing problem of non-adherence noted during pharmacy consultations, the WHO (2003) stressed the need to develop strategies to improve medicines adherence as an essential element in reducing the global burden of disease. Furthermore, the International Pharmaceutical Federation (FIP) produced recommendations for stepwise implementation of Good Pharmacy Practice in these countries (FIP, 1998). This same council also adopted in 2000 a Statement of Policy on Control of Resistance to antimicrobials, which provides a list of recommendations for

governments and health authorities on the appropriate measures needed to combat antimicrobial resistance. The statement also advocates that pharmacists are ready to collaborate actively with physicians, regulatory authorities and other health professionals in efforts to combat antimicrobial resistance and to participate in public information campaigns on this (WHO, 2006). In the 1990s the WHO also recognised that pharmacy education systems must be reviewed in light of their better use as health care resource. In addressing the education and professional development of pharmacists, the WHO through a consultative group pinpointed seven roles to which "preparing the future pharmacist" should aspire (WHO, 1997). These are care-giver, decision-maker, communicator, leader, manager, life-long learner and teacher. Recently, the WHO and the Pharmaceutical Association of the Commonwealth have suggested the need for a graduate level education followed by one year of practical training before a person is capable of effectively performing the role of a pharmacist. The WHO recommends that countries that have not already moved towards a university degree education for pharmacists should do so as quickly as possible (Yeole & Puranik, 2005).

In the context of ongoing advances in basic, medical, pharmaceutical sciences, Yeole & Puranik (2005) underlined the need to harmonise pharmacy education. Globally while most developing countries have incorporated the policies and recommendations from international health agencies (i.e., WHO; FIP), and have recognised the potential for an enhanced contribution of pharmacy to primary health care, consideration of social pharmacy as an important subject, apart from medical and technical education, is still ineffective in most of these countries. Despite health problem specificities and similarities among developing countries in terms of underuse of pharmacists in the

health care and public health systems, some countries has undertaken efforts to incorporate social pharmacy in the early phase of pharmacy training at university level.

### 2.2.6 What pharmacy means for public health and medicine?

Although the relationships between public health, pharmacy, and medicine are evident, there are still only a few reports that have addressed the relationships between pharmacy, medicine and public health. To address this important issue Capper & Sands, (2006) argued for the need to increase the participation of pharmacists at all levels of the public health system, which is fundamental to achieving substantial improvement in the health status of our population as well as full preparedness to respond to any type of mass casualty event. Capper & Sands, (2006) claimed also that augmenting the participation of highly trained pharmacy professionals at the state level of public health practice must be one of the most important goals for the future of our public's health. A related exercise supports the contention that there is an obvious social relationship between pharmacy and medicine, although this link is still not clearly expatiated. For this author, the existence of practical management of the drug classification system, the shift from simple dispensing and preparation service to pharmaceutical care service to pharmaceutical social service, are clear indicators of the relationship between pharmacy and medicine (Rui *et al.,* 2006). Rui and his colleagues argued for the necessity to promote theoretically the interconnections between the two fields and that this can be achieved by the discipline of social pharmacy.

## 2.3 Recent history of social sciences and pharmacy education

Since the early 1980s, efforts have been undertaken to find out which areas of practice of pharmacy can greatly contribute to pharmacy training. Among many recommendations, an independent committee of inquiry established under the aegis of

the Nuffield Foundation advocated that “social and behavioural science” should be incorporated into the pharmacy undergraduate curriculum. Defined as the scientific study of human behaviour, “behavioural science” is often associated with some disciplines dealing with people and society including psychology, sociology and anthropology (Svarstad, 1994).

According to Morrall, (2001), the discipline of sociology demystifies the nature of health and illness, determines the social causes of disease and death, exposes power-factors and ethical dilemmas in the production of health care and either directly or indirectly helps to create a discerning practitioner capable of more focused and competent decision-making. Such a sociologically informed approach to health care is basically needed by all health workers including pharmacists. Due to this importance, institutions such as the schools of pharmacy and the Royal Pharmaceutical Society of Great Britain (1996), suggested that aspects of sociology should be incorporated into the pharmacy undergraduate curriculum to adequately preparing pharmacy students for their future practice (Svarstad, 1994). In a related opinion, the Royal Pharmaceutical Society’s Education Committee advocated that all schools of pharmacy should include teaching in the social science aspects of pharmacy in the undergraduate pharmacy degree course (Working Party on Social and Behavioral Science, 1989).

**2.4 Importance of understanding sociology concepts in pharmacy**

Inadequacies in health care systems are still a major threat to public health worldwide. In response to this, the last decades have witnessed an increasing number of changes in the activities of pharmacists. In primary care, activities, i.e. compounding and formulating medicines, are not practiced anymore. As technological progresses have made the dispensing of medicines a more routine task, how much of their time pharmacists spend

on this activity is questioned. In addition, the number of highly effective proprietary medicines available for sale from a pharmacy, which were previously only available on prescription, has increased and is projected to increase still further. As such, it is predicted that in the near future pharmacists will be able to prescribe medicines as supplementary prescribers. These facts have led pharmacists to re-evaluate their roles, and to promote themselves as health professionals considered as acknowledged experts in medicines capable of taking on greater responsibilities for patients' health status and the outcomes of drug treatment. In secondary care, clinical and ward pharmacy have become important as concepts, with pharmacists increasingly being integrated into the health care teams alongside acquiring specializations, i.e. in drug information, oncology, pediatrics and radio pharmacy (Bissell & Morgall, 2005).

**2.5 Definition and scope of social pharmacy concepts**

Social pharmacy has been defined as a discipline concerned with the behavioural sciences relevant to the utilisation of medicine by both consumers and healthcare professionals (Wertheimer, 1991). In addition to behavioural and psychological aspects related to pharmacy, areas of pharmaceutical administration such as pharmacy management and marketing are also seen as a fundamental component of social pharmacy (Manasse & Rucker, 1984). The WHO, through a consultative group, pinpointed seven roles to which "future pharmacists" should aspire: care-givers, decision-makers, communicators, leaders, managers, life-long learners and teachers (WHO, 1997). Within this context there is a need for future pharmacists to be trained in all aspects related to social pharmacy as it provides a background for involvement with patient-oriented services.

The last decades have witnessed an increasing number of changes in the pharmacists' roles. For instance, in primary care activities, compounding formulation of medicines are becoming less important because of the availability of prefabricated drug products. Furthermore, the adoption of innovative patient-oriented roles for pharmacy, such as medication adherence counseling, home medicine review and to a certain extent as supplementary and independent prescribers, warrants that more time should be dedicated to patients not the products. In this context, a good understanding of patients' behaviour and psychology is very important to achieve the goal of pharmaceutical care (Wertheimer *et al.,* 1983). As shown in Figure. 2.1, the knowledge gained in social pharmacy is very essential to tie together the pieces of knowledge taught in pharmacy, which includes subjects from (1) the traditional fundamental sciences such as chemistry, pharmacology and physiology, (2) clinical subjects such as clinical pharmacy and (3) social sciences subjects such as communication skills (Wertheimer *et al.,* 1983).

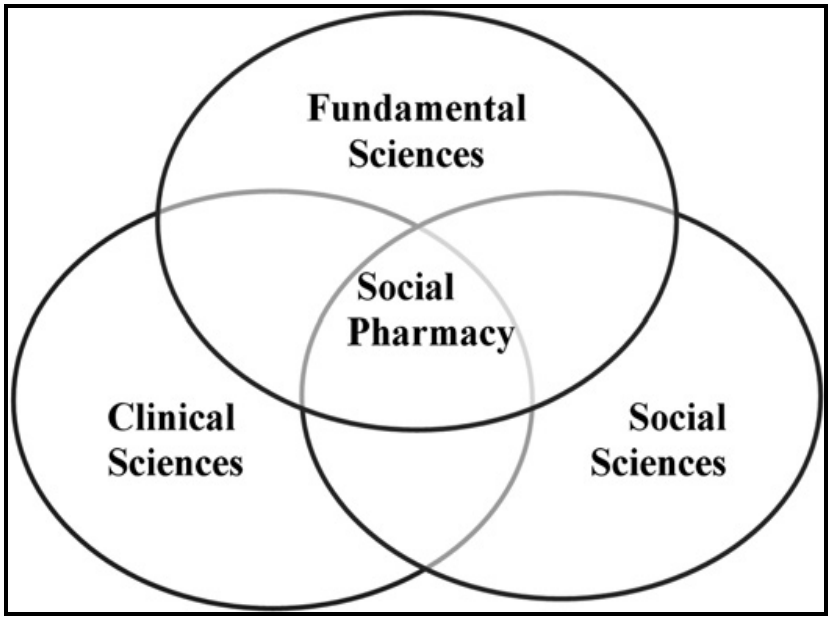


**Figure 2.1 Emergence of social pharmacy within fundamental, clinical, and social sciences in pharmacy education (modified from; Wertheimer *et al.*, 1983).**

## 2.6 Development of social pharmacy programmes around the world

The world today is undergoing rapid social, economic, political and technological change. In tandem with these changes, pharmacy as a socio-technical profession field is also moving along to meet the aspiration of global society (Phipps *et al.,* 2009). Hence, it becomes clear that pharmacy education also needs to react and rapidly change, renewing the terms of graduate professionals in strengthening the healthcare system in order to keep pace with emerging trends in pharmacy. Pharmacy education should satisfy the needs of today and tomorrow for continuous professional development.

The WHO (1996) stresses that in the developed nation, pharmacy institutions and pharmacy training involves commitments in upgrading education through modernisation of facilities, well-trained senior staff, emphasising subjects including hospital pharmacy, clinical pharmacy, bio-pharmaceutics and toxicology and pharmacy practice. They claim that in the developed countries pharmacy education is essentially patient-oriented rather than product-oriented. This provides opportunity for active and continuous interactions and collaborations between the industries and academic institutions. Pharmaceutical education is computer-based with facilities including software, a digital library and microteaching, as well as providing for distance education and continuing pharmacy education programmes. In addition to promoting constant interactions with the community and hospital pharmacies, pharmacy curricula for undergraduates include courses in anatomy, physiology, biochemistry, pharmacology, toxicology, drug information and interactions, clinical data analysis, pathophysiology and social pharmacy (WHO, 1992). In most developed countries, a pharmacist must have at least a bachelor degree to be able to practice pharmacy.

Continuously innovating and incorporating components of pharmaceutical sociology, as has been advocated by the Nuffield Foundation (FIP, 1986), has played an important role in the progression of academic and practice orientation in developed countries. As a result, many challenges in public health and healthcare have been addressed. In an environment of greater awareness of patient safety, greater emphasis on rational use of limited health resources, and greater need for accountability for outcomes, pharmacy practice in Canada continues to move from product focus to a patient focus (Al-Sukhni & Ballantyne, 2007), in the United Kingdom the system for pharmacy education is predicted to continue evolving over the coming years to meet the changing roles of pharmacists within the healthcare system (Sosabowski & Gard, 2008).

In contrast with the advances in pharmacy practice and services, which have contributed significantly to people's health in developed countries, there is an underuse of pharmacists for patient care and public health efforts in developing countries. These differences could be partly explained on the basis of differences in pharmacy education systems of developed and developing countries. One of the most significant differences is the qualification required to practice pharmacy, which in Europe is a B.Sc in Pharmacy and a Pharm. D in America. In comparison, in underdeveloped countries like India, a diploma in pharmacy is required (Shaji & Chadawar, 2007). Generally, the particular strengths of pharmacy services include accessibility within many communities and opportunities for advising on the management of health problems (Smith, 2004). It is widely believed that pharmacists could make a greater contribution to the provision of primary healthcare (WHO 1988 & 1996), especially in developing countries (Smith, 2004). In this part of the world, a significant proportion of the population has an increased level of unmet health needs (Mohindra, 2007). According to Kheir, (2008) in