

# Social Pharmacy as a Field of Study in Undergraduate Pharmacy Education

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## ABSTRACT

**Objective:** To ascertain and compare the differences, extent and depth of education in Social Pharmacy and reveal international regional variations. To analyze Social Pharmacy education at different pharmaceutical faculties. To examine the range and scope of teaching subjects partially related to the social, behavioral and administrative pharmacy sciences. **Methods:** A questionnaire survey was developed based on the examination of the study plans of 15 pharmacy schools around the world. A questionnaire was created based on the analysis of the curricula and mailed to 371 deans (or heads of Departments of Social Pharmacy) at colleges and schools of pharmacy in Europe, North America and developing countries (Latin America, Asia and Africa). **Results:** Fifty-one usable surveys were returned to the authors (a 53% response rate). 41% of the respondents reported that their school of pharmacy had a Social Pharmacy Department. In addition, 41% of the schools featured Social Pharmacy as a separate subject. This article describes regional differences and different representation of sub-disciplines. **Conclusions:** Although the most of surveyed schools had Social Pharmacy and related sub-disciplines in their curricula, there were large differences in approach and scope of teaching. Regional trends were discovered connected with the economic, political and social environment of particular regions.

**Keywords:** Social Pharmacy, curriculum, undergraduate, pharmacy education.

## INTRODUCTION

Many changes regarding how health care and its role in society is viewed, as well as how the role of the pharmacist is perceived in particular regions. Creating policy with the goal of increasing the safety, quality and effectiveness of medicines has required the development of study programs such as Social Pharmacy as well as associated subjects. The rapidly developing need for such programs as Social Pharmacy can be mirrored in the emergence of dissimilar sets of guidelines regarding how to teach these subjects. It is therefore necessary to study how these needs have in fact been responded to in university departments. With regard to addressing this need for an overview of developing trends along these

lines, different curriculum studies have recently been conducted.<sup>1,2</sup>

The role of the pharmacist has been described as having eight functions: caregiver, decision-maker, communicator, manager, life-long learner, teacher, leader, and researcher.<sup>3,4</sup> Within this context, there is a need for future pharmacists to be trained in all aspects related to Social Pharmacy, as this provides the background for providing the patient-oriented services associated with each function.<sup>5</sup>

To achieve this goal pharmacy educators must develop a multi-professional edition of the Curriculum Guide, a text which can then be used to inform, support and assist health care professionals, ensuring that patient safety is a top priority in health care education.<sup>6</sup>

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Social Pharmacy is an interdisciplinary discipline which enables the pharmacy professionals to participate in and take responsibility for decisions regarding drug-related issues at the societal level. The rapidly developing discipline of Social Pharmacy is likely to have a central position in the future curricula of pharmacy schools.<sup>7</sup>

Social Pharmacy may be defined as the discipline dealing with the role of medicines from social, scientific and humanistic perspectives. It draws on theories of the social and behavioral sciences, including health psychology. Social Pharmacy may be seen as consisting of all social factors influencing the use of a particular drug, such as medicine-related beliefs, regulations, policy, attitudes, medicine information, ethics and behavior. Several approaches, however, towards a definition of Social Pharmacy have emerged from numerous authors and researchers. In what has become a widely accepted definition, one group of authors terms Social Pharmacy as “The endeavor to integrate drugs into a broader perspective and to include legal, ethical, economic, political, social, communicative, and psychological aspects into their evaluation in order to contribute to the safe and rational use of drugs.”<sup>8</sup>

There is no single, superlative model for the education and training of pharmacists which has been accepted world-wide, but there are common concepts, principles and practices that should be employed by pharmacy education policy-makers to meet the needs of communities at the local, regional and even global level. Toward this end, schools and faculties of pharmacy should share knowledge and educational resources with their colleagues world-wide.<sup>9</sup>

Social Pharmacy courses in pharmacy curricula are becoming more important because of the various factors that can influence the health of a society. A deep understanding of the issues related to Social Pharmacy will help the profession further progress toward improving population health.<sup>10</sup>

Social Pharmacy deals with the study of human behavior and as a behavioral science is often associated with disciplines that deal with individuals as well as large and small groups, including psychology, sociology and anthropology.<sup>11</sup> As a relatively new discipline, the theoretical bases of research in the area of Social Pharmacy are still in the process of development.<sup>12</sup>

The objective of our study was to compare the representation of individual disciplines in a wide range of institutions around the world dealing with aspects of Social Pharmacy. Our aim is to describe significant regional differences and identify deficiencies in the content of particular study programs.

The knowledge gained by the study of Social Pharmacy should be considered essential in synthesizing the assorted bodies of knowledge taught in pharmacy, including subjects such as (1) the traditional fundamental sciences such as chemistry, pharmacology, physiology, law and legislation, (2) clinical subjects such as clinical pharmacy, and (3) social science subjects such as communication skills.<sup>10</sup> The main objective of our work is to identify subjects in study plans of schools of pharmacy which can be connected with social pharmacy in a broad scope. The second step is a comparison of the representation of these subjects by region.

## MATERIAL AND METHODS

The first step in the development of our investigation questionnaire was an examination of the study plans of 15 pharmacy schools around the world. The subjects taught at these institutions were divided into 4 different categories: basic, medical, pharmaceutical and social pharmacy courses.<sup>13</sup> Subjects in the social pharmacy group (specifically Social/Behavioral/Administrative and Clinical Pharmacy Sciences) were divided into 14 main branches – Communication, Education and Research Methods, Ethics, Health and Drug Policy, Industrial Pharmacy, Patient Safety, Pharmaceutical Care, Pharmacoeconomics, Pharmacoepidemiology, Pharmacy Legislation, Law and Regulations, Pharmacy Management, Pharmacy Practice, Psychology, Social Pharmacy.

The next phase was the actual creation of a questionnaire based on the results from the first step. The survey had three parts: the first contained 5 general questions to obtain descriptive information related to the apposite university/faculty, i.e. name and position of contact person (respondent) and his/her email address. Other questions dealt with the number of departments at the respondent's faculty. The respondents were also asked if their faculty had a Social Pharmacy department or a similar institution under a different name and, if so, how many lecturers this department had. It can be difficult for somebody to understand exactly what Social Pharmacy is and what it entails, thus a definition was included: “Social pharmacy deals with the role of medicines from the social, scientific and humanistic perspectives. It draws on theories of the social and behavioural sciences, and includes health psychology.”<sup>14</sup>

The second part of the questionnaire dealt with questions regarding 14 selected courses and subjects. Respondents answered as to if a particular subject was offered in their curriculum, if the content of the field of knowledge was taught in another course, or if this issue was not included in the curriculum at all. The second question in this part of questionnaire was about

whether the said course was obligatory (compulsory) or elective (optional). The third question concerned how many hours in total the subject was featured in the curriculum.

The third part of the questionnaire was devoted to all other subjects related to Social Pharmacy and there was space for additional comments, suggestions and explanations.

The completed questionnaire was modified into electronic form and an online version was mailed to 371 deans (or heads of Departments of Social Pharmacy or other individuals responsible for the teaching of Social Pharmacy) at colleges and schools of pharmacy in Europe, North and Latin America, Asia, Africa and Australia. The free online service Google Docs was used to create the questionnaire.<sup>15</sup> The list of pharmacy schools, the names and email addresses of the deans as well as information regarding the web pages of colleges and the names of heads of departments of Social Pharmacy or associated instructions was taken from the International Pharmaceutical Federation<sup>16</sup> and the Accreditation Council for Pharmacy Education.<sup>17</sup> The link to the online questionnaire was sent by email in a cover letter in email form describing the intentions and aims of the study and thanked participants in advance for their cooperation in the survey. To maximize the response rate, the cover letter was sent again after 4 weeks to another contact at the schools that had not responded to the first attempt. Considering the type of survey and work with publicly accessible data no informed consents or ethical approvals is required. The data collection lasted two months (October and November 2012) and the results were processed by MS Excel®.

## RESULTS

The study involved 51 faculties; the response rate was a total of 53%. Based on relevant statistics and similarity

in type of health care systems, economic status<sup>18</sup> and the role of pharmacists, regions were divided into three groups: *Europe* (4 responses from the United Kingdom, 3 from Portugal, 2 each from the Czech Republic and Sweden, and 1 each from Denmark, Estonia, Finland, Germany, Macedonia, Malta, Netherlands and Slovakia), *North America* (15 responses from the USA and 1 from Canada) and *developing countries* - Latin America (1 response each from Argentina, Colombia, Chile and Peru), Asia (2 each from Saudi Arabia and United Arab Emirates, and 1 each from Indonesia, Iran, Lebanon, Malaysia, Nepal, Palestine and Yemen), Africa (1 response from Egypt). Table 1 shows the number of countries surveyed as well as the number of responses and response rate.

Regional differences were significant as to the number of relevant departments in the schools. While the European median value was five departments, in North America there were only two, and for developing countries the median value was four departments.

About two-fifths of the respondents (41%) reported that their school of pharmacy has a Social Pharmacy department or a department with a similar name dealing with similar issues. Table 2 shows these regional differences.

Social Pharmacy can be managed either as a module of individual courses/topics within one department, or other institution dealing directly with this research or as a set of courses within various subdivisions (e.g. departments) working independently of each other (all individual courses related to Social Pharmacy then harmonized into one module). 41% of the schools included Social Pharmacy as one separate course only, more often in Europe (59%), and less so in North America (25%) and developing countries (38%).

The main scope of our survey was focused on Social Pharmacy subdisciplines. A number of disciplines such as Pharmacy Legislation, Law and Regulations, Pharmacy Practice, and Ethics and Pharmaceutical Care were

**Table 1: Response Rate by Region, N=378**

Region	No. of Schools <sup>a</sup>	No. of Surveyed <sup>b</sup>	No. of Responses	(Response Rate) <sup>c</sup>
Europe	111	32	19	(59%)
North America	125	36	16	(44%)
Latin America	48	9	4	(44%)
Asia	80	13	11	(85%)
Africa	5	3	1	(33%)
Australia	9	3	0	(0%)
<b>Total</b>	<b>378</b>	<b>96</b>	<b>51</b>	<b>(53%)</b>

<sup>a</sup> Number of Pharmacy Schools with email contact found

<sup>b</sup> Number of Pharmacy Schools with deliverable email (active delivery and read receipt confirmations)

<sup>c</sup> Response Rate as the proportion of number of responses to the number of surveyed

featured in the curricula of most schools of pharmacy, but there are many regional differences:

First, Pharmacy Management: there is a relative lack of Pharmacy Management courses in European schools, with 26% not featuring these subjects at all, as opposed to only 6% of the tested institutions in North America and in developing countries. A similar result was obtained for the question about Education and Research Methods. This subject is significantly offered less often in European schools (not featured in 47% of them).

Second, Industrial Pharmacy and Pharmacoepidemiology: there is a noticeable lack of these types of courses in North American schools. Industrial Pharmacy subjects are not offered at almost half (44%) of the schools tested in North America, while in Europe and the developing world they are featured significantly more often. A similar result was achieved regarding courses in Pharmacoepidemiology in two groups - 25% of the schools tested in North America and in developing countries did not offer Pharmacoepidemiology, while only 5% of the European schools surveyed did not feature any of these types of subjects at all.

Third, Health and Drug Policy, Patient Safety: a lack of these types of subjects was shown in the developing countries group, wherein 38% and 31% of the schools tested did not offer courses in Health and Drug Policy and Patient Safety, respectively. A detailed representation of this disparity is shown in Table 3 and Chart 1.

Further results deal with the obligatory or elective character of courses. Differences were shown both regionally and regarding individual subjects. In Europe and developing countries 83% of all courses related to Social Pharmacy were shown to be obligatory, while in the North American schools tested the rate was 96% of these subjects being required. A significant number (more than 30%) of some elective courses were not offered at all in the North American group. These subjects include, in European schools Industrial Pharmacy (50% not offered), Pharmaceutical management (36%) and Psychology (33%), and at institutions in developing countries Pharmacoepidemiology (42% not offered), Psychology (42%) and Pharmacoeconomics (33%).

The open question part of questionnaire enabled the respondents to submit information about the other

**Table 2: The Presence of the Social Pharmacy Department or Similar, N=51**

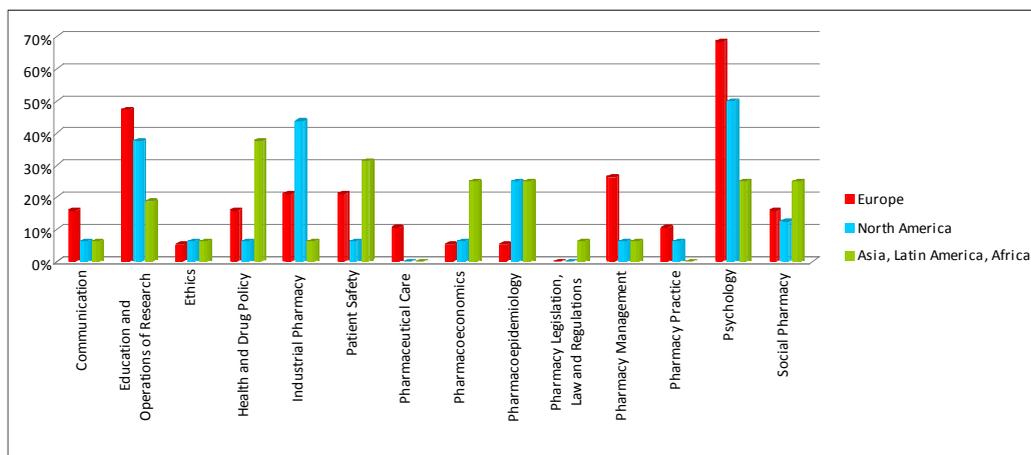
Region	Europe		North America		Developing Countries	
Yes	10	52,6%	6	37,5%	5	31,25%
No	8	42,1%	10	62,5%	11	68,75%
No answer	1	5,3%	0	0%	0	0%
<b>Total</b>	<b>19</b>	<b>100%</b>	<b>16</b>	<b>100%</b>	<b>16</b>	<b>100%</b>

**Table 3: Absence of Individual Subjects, N=51**

Subject	Europe (N=19)	North America (N=16)	Developing Countries (N=16)
Communication	16%	6%	6%
Education and Research Methods	47%	38%	19%
Ethics	5%	6%	6%
Health and Drug Policy	16% <sup>a</sup>	6% <sup>b</sup>	38%
Industrial Pharmacy	21% <sup>a</sup>	44%	6%
Patient Safety	21%	6%	31%
Pharmaceutical Care	11%	0% <sup>a</sup>	0%
Pharmacoeconomics	5%	6%	25%
Pharmacoepidemiology	5% <sup>a</sup>	25%	25%
Pharmaceutical Legislation, Law and Regulations	0%	0%	6%
Pharmacy Management	26%	6%	6%
Pharmacy Practice	11%	6% <sup>a</sup>	0%
Psychology	68%	50%	25%
Social Pharmacy	16% <sup>a</sup>	13%	25%

<sup>a</sup>Number of respondents with "no answer" = 1

<sup>b</sup>Number of respondents with "no answer" = 3



**Chart 1:** Absence of Individual Subjects.

courses connected with Social Pharmacy taught at their schools. Subjects dealing with Hospital Pharmacy were reported four times, with the History of Pharmacy three times, with Public Health three times, and with Health Outcomes twice. Several other types of courses were indicated once each: Community Practice, Community Pharmacy, Professional Responsibility and Leadership, Biomedical Literature Evaluation, Drug Literature Evaluation, Patient Assessment, Interviewing Skills, Patient Counseling, Patient Education, Learning Services for Pharmacists, Demography, Health and Property, Social Determinants and Primary Health Care, Drug Consumption, Patient Perspectives, Cultural Competency, Quality in Healthcare, Health Economics, Health Promotion, Health Sociology and, finally, Drugs and Society.

The final section of our survey provided a place for additional notes and comments from the respondents, who were able to give information about specific aspects of their curriculum and education systems that were not covered in the earlier sections. These included information about postgraduate lifelong education outside the university. Some schools also admitted the awareness of their lack of Social Pharmacy courses, as well as revealed plans about deepening and improving their syllabi and study plans to concentrate more in this area.

## DISCUSSION

We found that study plans among the schools tested varied greatly. Differences were indicated not only in the amount and variety of subjects in Social Pharmacy-related areas, but also in the overall approach to Social Pharmacy as an essential educational and scientific discipline. These variations between institutions reflect individual sociological, economical, political, historical influences, as well as other types of differences. The

large variations in these factors can be explained by the great diversity between study plans and educational systems and, indeed, in the basic approach to Social Pharmacy around the world. Potential changes toward restructuring are related not only to historical questions (some remaining to be answered<sup>19</sup>) but question for many other future transformation steps in education of pharmacy. Many schools around the world has proved the changes in recent history.<sup>20–22</sup> A similar effort toward increased education in Social Pharmacy is evident in both developed and developing countries.<sup>23–25</sup> The respondents in our survey admitted the importance of Social Pharmacy and confirm changes in their curriculum in the near future in this field.

The role of pharmacists in modern health care is vital, and their responsibility in today's world is increasingly linked to the problem of Social Pharmacy. In addition, recent developments in pharmacy practice – specifically, from focusing solely on pharmaceutical and medicinal products to being patient focused - has resulted in an increased interest in Social Pharmacy.<sup>26</sup> With this shift, pharmacists are now taking responsibility for patient medication outcomes and have become more active members of the health care team.<sup>3,4</sup>

Social Pharmacy as a multidisciplinary subject involves many activities and it is necessary (not only with research projects) to both think in terms of a wider perspective as well as concentrate on sub-disciplines. For this purpose we have analyzed curricula from 15 schools to define the most common subjects taught, with a final result of 14 courses being identified. Other results of our survey, e.g. questions about other courses connected with Social Pharmacy taught at a particular school, confirmed the presence in some measure of all main subjects listed in our questionnaire.

The analysis of the presence or absence of specific subject matter in curricula proved problematic. Some

disciplines were taught individually in some schools, at others together with different subjects. After analyzing all results we decided that the clearest solution was to catalog only the absence of a particular discipline at the schools, as this provides evidence of a definite lack which may be most straightforwardly addressed. Also the exact number of hours each subject is taught was very difficult to infer. The first problem was how compare one-term and two-term (and longer) subjects, subjects taught during an entire term, subjects taught in blocks and, of course, the previous discussed problem of isolated nature of some subjects, as in many cases these were part of other courses or represented only by few hours of instruction. Some questions sought to clarify specifics about the type of teaching, i.e. whether it took place in divided lectures, seminars or practical exercises. Due to the great diversity as well as inaccuracy of some of the answers in this part of questionnaire, it was not possible for us to carry out statistical processing and evaluation. The problems regarding the overall analysis also arose from differences in educational systems, bachelors' vs. masters' programs and the actual requirements therein along with the definition and content of the subjects. These problems proved ubiquitous throughout our survey in terms of comparisons between larger regions.

On the other hand, the fact that many similarities were found among schools within the same region simplified the process of comparison. According to the United Nations classification, developed countries include those in Europe, North America, Japan, Australia and New Zealand. Other countries are categorized as developing.<sup>18</sup> This distinction was made not only according to the United Nations' definitions;<sup>18</sup> these groupings proved statistically significant in terms of similarity of the results from the various regions. Another advantage regarding the analysis and comparison of our statistics was also the similar number of respondents in these three groups (19 from Europe, 16 from North America and 16 from developing countries). Although a representative sample was not determined, a number of common regional features were observed, and this was also connected with certain social and political characteristics. Social Pharmacy-related courses were generally found to be neglected more often in the developing world.<sup>27</sup> Our research has shown that this trend has been reversed significantly in Arab countries, with significant differences being found in comparison with other developing countries. About one third of all respondents from developing countries admitted their schools did not address the issues of health and drug policy or patient safety. If, as published results seem to indicate, the overall worldwide trend in pharmacy

education reflects a movement from a focus primarily on products towards a greater focus on patients, it can be said that pharmacy education in developed countries remains at an earlier stage in terms of this tendency (see e.g. the results for industrial pharmacy).<sup>27</sup>

## LIMITATIONS

This study had several limitations. First, the database of email addresses available did not include contacts for all pharmacy schools. The study included only schools that have a functional website and email addresses. Number of pharmacy schools with deliverable email (active delivery and read receipt confirmations) was only 96, because others (from 378 found contacts) had wrong or incorrect e-mail contact on their web sites. This presented a big problem in terms of contacting most schools in some developing countries (mainly in Africa and Asia) without a quality Internet connection. Second, language barriers proved problematic, as those who cannot speak English were undoubtedly discouraged from completing the questionnaire. Third, the number of respondents (response rate) could have been higher, but 53% for this type of study was enough, enabling us to at least begin to understand the basic features of the issue. Fourth, many respondents did not understand the exact meaning of the questions, and thus their responses could have been imprecise. This seemed to pose a problem with the questions dealing with the number of hours some subjects are taught: some during more than one term, often in study blocks or during (or interconnected) with practice in pharmacy. Fifth, the determination of exact boundaries among subjects and syllabi was very difficult and this proved problematic in making comparisons. Finally, the fact that no curricula was listed on the websites of most faculties did not allow for a completely reliable assessment.

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