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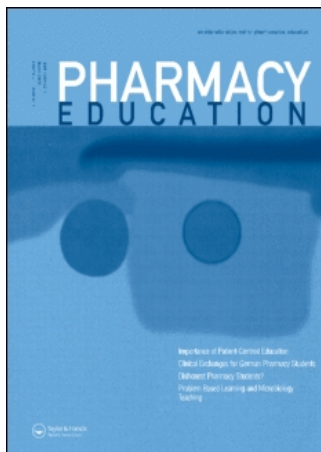
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Teaching social sciences to undergraduate pharmacy students: An international survey[†]

KATH RYAN¹, PAUL BISSELL², CLAIRE ANDERSON², JANINE MORGALL TRAUlsen³, & BETSY SLEATH⁴

¹Institute of Health & Community Studies, University of Bournemouth, Bournemouth, UK, ²School of Pharmacy, University of Nottingham, Nottingham, UK, ³Danish University of Pharmaceutical Sciences, Copenhagen, Denmark, and ⁴School of Pharmacy, University of North Carolina, Chapel Hill, NC, USA

Abstract

Introduction: There is a dearth of recent research exploring the changing scope of the pharmacy undergraduate degree.

Methods: A standard web-based questionnaire was developed to collect data on social science teaching in Schools of Pharmacy. Snowball sampling was used. The questionnaire was ongoing and electronically analysed, assigning an average ranking to responses.

Results: There were 62 respondents representing Schools of Pharmacy from 17 countries. The social science disciplines and subjects are charted to show the frequency and year in which they are taught and open-ended responses regarding course objectives, course evaluation and student assessment are collated.

Discussion: Social/administrative pharmacy appears to have gained in acceptance within the pharmacy establishment showing an advancing degree of sophistication and rudimentary development of a theoretical base. However, there was a wide range of subjects, from scientific to behavioural, being taught under the banner of social pharmacy suggesting a lack of definitional agreement.

Keywords: Pharmacy undergraduate curriculum, social and administrative pharmacy, social and behavioural sciences in pharmacy teaching, pharmacy course objectives, course evaluation, student assessment and faculty qualifications

Introduction

In common with all other health professionals, the practice of pharmacy, and consequently, the pharmacy curriculum at both primary and secondary level has undergone significant change over the past 20 years in response to a rapidly changing economic, political and social environment. Across the Western world, the cost of providing health care has continued to escalate, with a greater range of health technologies and therapeutic modalities available to an ever-increasing “greying” population. In the pharmacy sector alone, drug bills continue to rise and there is heightened awareness of the risks of using medications and the occurrence of medication errors. Deregulation

of medicines continues apace in many countries and pharmacist prescribing has been introduced in the US and UK and is foreshadowed in many other countries.

There have also been significant changes in the relationship between health care systems and the pharmacy profession in many countries, with increased corporatisation of pharmacy and changes for pharmacy contracts including payment for cognitive services, for example, medication review in Australia, New Zealand and the UK and pharmaceutical care in the US. There has been a blurring of roles between health care professionals leading to increased competition. With specific reference to pharmacy, the profession has had to face up to key technological developments, in particular the development

Correspondence: K. Ryan, Institute of Health & Community Studies, Royal London House, Christchurch Road, Bournemouth BH1 3LT, UK. Tel: + 44 1202 962182. Fax: + 44 1202 962194. E-mail: kryan@bournemouth.ac.uk

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of original pack dispensing which has meant that community pharmacy has lost one of the components that sustained its professional status—compounding (Morgall & Almarsdottir, 1999; Lindblad, Isacson, & Sorbom, 2000).

Consequently, it has been argued that pharmacists are over-educated and under-utilised and have been seeking a new role (Birenbaum, 1982; Edmunds & Calnan, 2001; Morgall Traulsen & Bissell, 2004). In this context, those responsible for the delivery of pharmacy courses have been forced to look afresh at the pharmacy curriculum.

As a result of these developments, many pharmacy courses have moved from being dominated by the physical sciences meeting the needs of drug development and control only, to including clinical, social, psychological, administrative and practice elements. The basic and applied sciences of pharmaceutical chemistry, pharmaceuticals, pharmacognosy and pharmacology, with their heavy reliance on the teaching of the drug entity, its chemical nature, its derivation from plant and animal sources, its action on and disposition within the body and the formulation of various dosage forms, have given way (albeit perhaps reluctantly in some areas) to a greater emphasis on subjects based around the clinical requirements of patients and a knowledge of drugs and diseases. The role of the pharmacist now includes direct interaction with the public, the provision of health information and advice and counselling on the safe and rational use of medications. The idea of social pharmacy (Harding, Nettleton, & Taylor, 1990, 1994; Taylor, Nettleton, & Harding, 2003) has developed as a term to embody and express these changes. We would argue that social pharmacy (perhaps like social medicine) is a multi-disciplinary hybrid, drawing on the theories and methodologies of the social and behavioural sciences. As such, it can be conceived of as part of a socio-environmental or bio-psycho-social approach to understanding health and illness as distinct from the commonly accepted biomedical approach. One of the chief contrasts between these two approaches is that the former emphasises the social and psychological determinants of health, whereas the biomedical model focuses on the physical aspects and has been criticised for its overly reductive method (Nettleton 1995). It is against this backdrop that the pharmacy undergraduate curriculum has developed.

Classification of undergraduate courses differs considerably at both national and international levels (Anderson, 2002). Titles of courses appear to be largely based on historical grounds, but this is slowly changing. In the late-1970s, a number of schools in the US started courses in social and administrative pharmacy as a result of the Study Commission on Pharmacy (Millis Commission Report) which identified the need to develop the behavioural and social sciences in pharmacy in conjunction with clinical

practice (Study Commission on Pharmacy, 1975; Johnson & Wertheimer, 1979). Separate courses in clinical pharmacy already existed, having been introduced in the early-1970s (Birenbaum, 1982). In 1975, the American Council on Pharmaceutical Education, included pharmacy administration, social and behavioural sciences as necessary curriculum content areas. The most recent educational statement from the American Association of Colleges of Pharmacy incorporates many social and behavioural topics, for example communication and ethics, as required outcomes of pharmacy programmes in the US (American Association of Colleges of Pharmacy, 2004).

In the UK, the Nuffield Committee of Inquiry into Pharmacy (1986) declared that behavioural science should be incorporated into the undergraduate pharmacy curriculum. This was endorsed by the UK Working Party on Social and Behavioural Science (1989) of the Education Committee of the Royal Pharmaceutical Society. As a result, a number of schools started teaching social and behavioural sciences, as part of the broad curriculum area, pharmacy practice, usually including clinical pharmacy. More recently, the course in the UK has moved from a 3-year BPharm to a 4-year MPharm and has, in doing so, increased the range of subjects taught.

In Australasia, the 4-year BPharm course provides a solid base in the biological and pharmaceutical sciences in the early years and moves through to a predominance of pharmacy practice subjects in the later years, in some schools taught as “Quality Use of Medicines” modules based on body systems, such as gastrointestinal, cardiovascular, etc. Clinical pharmacy was introduced in the late 1970s/early 1980s and social pharmacy elements were introduced gradually throughout the 1990s.

A number of Northern and Eastern European countries also introduced social pharmacy into their curricula in the mid-1970’s. Courses were already being held in 1957 in Sweden, dealing with “social pharmacy and laws/regulations in pharmacy” which in 1970 was changed to “social pharmacy”. At this time, serious discussions were taking place with regard to finding a name for the discipline dealing with social and societal problems. 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”. In 1992 a Chair in “Social Pharmacy” was established at the Royal Danish School of Pharmacy and the first Professor in Social Pharmacy was employed (Hansen, 1982).

In 1979 Johnson and Wertheimer, proposed a general definition for what they called “behavioural pharmacy”:

Behavioural pharmacy is the field concerned with the *development* of behavioural science knowledge

and techniques relevant to the understanding of drug use, drug effects, drug selection and prescribing, behavioural-therapy adjuncts and alternatives to drug therapies, the professional behaviour and well-being of pharmacy practitioners, and the *application* of this knowledge and these techniques to prevention, diagnosis, treatment and rehabilitation (Johnson & Wertheimer, 1979).

These authors stressed the development and application of behavioural science knowledge within pharmacy.

The academic group of FIP conducted a global survey of teaching social pharmacy/pharmacy administration in Schools of Pharmacy in 1992 (Schaefer, Leufkens, & Harris, 1992; Leufkens, Schaefer, & Harris, 1993). A total of 693 questionnaires were sent to all known Schools of Pharmacy in the world; 128 (18.3%) completed questionnaires were returned. The survey consisted of questions regarding the existence of a pharmacy administration programme (including social pharmacy, pharmacy practice, pharmacy management and pharmacoepidemiology), content structure and reasons for having such programmes. Furthermore, the Schools were asked to provide information on the pains and pitfalls and the challenges they perceived regarding teaching these subjects. A variety of subjects were being taught under the heading of social pharmacy/pharmacy administration. The authors are self-critical regarding the selective response to their survey; they assume that those who were teaching in this area were more likely to have responded to the questionnaire. However, they also state that the survey indicates that pharmacy administration/social pharmacy has become an integral part of many pharmacy curricula, in spite of widespread prejudices against its recognition as a legitimate subject area.

Several authors have tried to delineate and define social pharmacy, clinical pharmacy and pharmacy practice. For instance, Harding and Taylor (1993) suggested that, in Britain, pharmacy practice provided the umbrella under which social pharmacy existed, whereas Mount (1994) suggested that, in the US, social pharmacy (or social and administrative pharmacy) was a subset of the social sciences in pharmacy.

Irrespective of these definitional difficulties, given the dearth of recent research exploring the changing scope of the pharmacy undergraduate degree, it appeared important to once again survey colleagues teaching subjects that they defined as fitting within the field of social sciences to undergraduate pharmacy students to see how much of Johnson and Wertheimer's *development* and *application* has actually occurred. With the advent of indicative curricula in the EU, UK and Australasia it was deemed important to gather information on what is currently happening and to establish a means of information and resource

sharing, a network of those involved in social pharmacy teaching.

A website was established to provide an international networking focal point, for teachers involved in teaching the social sciences to pharmacy students. The site included a web-based questionnaire that enabled the collection of data related to teaching, curricula and research activities. Furthermore, the web site was designed to enable the collaborative sharing of course outlines and teaching resources. It was hoped that this web site would foster collegial networking at an international level amongst faculty engaged in social pharmacy teaching. The website has since been updated and made more interactive (www.socialpharmacy.otago.ac.nz).

This paper reports on the findings from the web-based questionnaire posted on the original website.

Methods

A standard web-based questionnaire was developed and linked to the website to collect current baseline data on the status of social science teaching in Schools of Pharmacy. The survey was designed to be ongoing and electronically self-analysing. Responses were received and collated continuously. However, for the purposes of this paper, the results are reported to 30 September 2004.

Possible respondents, known to the researchers to be teaching social and behavioural pharmacy to undergraduate pharmacy students, were notified by email and electronic mailing lists of the existence of the website and invited to complete the questionnaire on-line on behalf of their School of Pharmacy or forward the information to the most appropriate staff member. They were also asked to forward the invitation to other colleagues known to them to be engaged in social pharmacy teaching. This method of snowball sampling was used to achieve as wide a distribution as possible around the world.

Respondents were asked to identify the level in the curriculum at which various social science disciplines and subjects were being taught to undergraduates in their school. They were also asked to identify the (social science) knowledge, skills and attitudes that they were trying to engender in their students and how they determined the success or otherwise of these attempts. Furthermore, they were asked about the qualifications of staff teaching the (social science) course(s), how the course(s) were evaluated and how the students were assessed.

Answers to questions requiring a "yes/no" response were electronically assigned an average ranking from 1 to 2, such that a ranking of 1 meant that 100% of respondents (who answered that particular question) replied "yes" and a ranking of 2 meant that 100% of respondents answered "no". For example, respondents were asked to identify the particular social

science disciplines that were taught in their School of Pharmacy for each of the years of the undergraduate curriculum. A low average ranking for a particular discipline (e.g. 1.2) meant that the discipline was being taught by the vast majority (approximately 80%) of respondents to that question. Charting the average rankings across the undergraduate years, the disciplines and the subjects made it possible to see which subjects were most commonly taught and at what levels. In addition, there were a number of “free-text” questions, which allowed respondents to comment on issues in much more depth, and we have used these data to illustrate key issues arising out of the quantitative findings. Comments were aggregated according to topic and quotations chosen to illustrate the range, highlight differences or uniqueness or simply because they were most eloquent.

Results

Sixty-two respondents had taken the survey by 30 September 2004, representing Schools of Pharmacy from 17 countries: Australia, Barbados, Canada, Denmark, Iceland, Ireland, Malta, Moldova, Netherlands, New Zealand, Norway, Puerto Rico, South Africa, Spain, Sweden, UK and the USA.

Table I lists the main social science disciplines (some suggested by the researchers and others identified by the respondents) that were being taught around the world under the umbrella of “social pharmacy”. It shows the colour-coded ranking of the disciplines and the curriculum year in which they were taught.

The most commonly taught discipline was “communication skills” which was taught at all levels of the curriculum by 60–70% of respondents, followed closely by “law & ethics” (50–70%) which tended

to be taught more in the middle years of the curriculum. Other disciplines taught across the whole curriculum were “health promotion/education” (40–60%) and “public health/health policy” (40–50%). The “history of pharmacy or medicine” was taught almost exclusively by 60% of the respondents in the very first year of the curriculum and hardly ever thereafter (10% in later years). Conversely, the disciplines of “business management/social & administrative pharmacy” (60–70%) and “economics” (40%) were predominantly taught in the final 2 years of the curriculum. “Social epidemiology” (30–40%) was taught in the middle years of the curriculum. The pure social science disciplines, such as sociology (20–30%), psychology (20%), anthropology (0–10%) and geography (0%) were not much taught at all. Other disciplines, such as biostatistics, clinical epidemiology, evidence-based medicine, practicum/externship/rotation, pharmacoepidemiology and pharmacoinformatics, were mentioned by only one respondent each.

Table II lists the main social science subjects (some suggested by the researchers and others identified by the respondents) that were being taught around the world under the umbrella of “social pharmacy”. It shows the colour-coded ranking of the subjects and the curriculum year in which they were taught.

Of the social science subjects, “your own national health system”, “professionalisation” and “pharmacy professional organisations” were all taught by 80% of respondents in the first year of the curriculum, along with “development of the health professions” (70%). The subjects of “compliance” (50–60%), “health policy” (50%), “health services” (40–60%), “funding/financing of health systems” (40–60%) and “health promotion/education” (40–60%) were taught

Table I. Ranking of the main social science disciplines by curriculum year.

Social Science Disciplines	Year 1	Year 2	Year 3	Year 4
Economics	1.7	1.7	1.6	1.6
Sociology	1.7	1.7	1.7	1.8
Psychology	1.8	1.8	1.8	1.8
Anthropology	1.9	1.9	1.9	2.0
History (of pharmacy or medicine)	1.4	1.8	1.9	1.9
Communication skills	1.3	1.4	1.3	1.4
Health promotion/education	1.4	1.5	1.4	1.6
Public health/health policy	1.5	1.5	1.5	1.6
Social epidemiology	1.8	1.7	1.6	1.8
Geography	2.0	2.0	2.0	2.0
Law & Ethics	1.5	1.4	1.3	1.5
Business Management/Social & Administrative Pharmacy	1.7	1.6	1.3	1.4

Key to Ranking:

1 = everyone teaching this discipline, 2 = no-one teaching this discipline

1.0-1.2 □ 1.3-1.4 □ 1.5-1.6 ■ 1.7-1.8 ■ 1.9-2.0 ■

Table II. Ranking of the main social science subjects by curriculum year.

Social Science Subject	Year 1	Year 2	Year 3	Year 4
Social basis of health & illness	1.5	1.6	1.6	1.7
Social theory	1.7	1.8	1.7	1.9
Health inequalities	1.5	1.7	1.6	1.8
Gender & health	1.7	1.8	1.7	1.7
Ethnicity & health	1.6	1.8	1.6	1.7
Your own national health system	1.2	1.5	1.5	1.5
International health systems	1.7	1.8	1.8	1.8
Development of the health professions	1.3	1.7	1.7	1.8
Professionalisation	1.2	1.5	1.5	1.5
Pharmacy professional organisations	1.2	1.6	1.6	1.6
Funding/financing of health systems	1.4	1.6	1.6	1.6
Health policy	1.5	1.5	1.5	1.5
Health services	1.4	1.5	1.5	1.6
Health promotion/education	1.4	1.4	1.5	1.6
Public health/New public health	1.6	1.6	1.5	1.7
Women's health movement	2	2	1.8	1.9
Complementary & alternative medicine	1.7	1.8	1.4	1.5
Experiencing health & illness	1.6	1.7	1.6	1.6
Help seeking behaviour	1.7	1.7	1.7	1.8
Lay health beliefs	1.6	1.7	1.6	1.8
Sick role model	1.6	1.8	1.7	1.9
Death & dying	1.8	1.9	1.7	1.8
Doctor-patient relationship	1.6	1.6	1.7	1.6
Medicalisation	1.8	1.8	1.7	1.7
Compliance	1.4	1.5	1.5	1.5
Concordance	1.6	1.7	1.5	1.6
Stigma	1.7	1.7	1.8	1.9

Key to Ranking 1 = everyone teaching this subject, 2 = no-one teaching this subject

1.0-1.2 □ 1.3-1.4 □ 1.5-1.6 ■ 1.7-1.8 ■ 1.9-2.0 ■

across all years of the curriculum. Interestingly, in light of the popularity and uniformity in teaching about national health services, systems and funding, there is a relative lack of instruction about “international health systems” (20–30% across all years). The only other subject being taught relatively consistently was “complementary and alternative medicine” which tended to appear later in the curriculum (60% in year 3 and 50% in year 4). The least popular subjects were the “women’s health movement”, “ethnicity/gender and health”, “social theory”, “social basis of health and illness” and the related topics of “sick role model”, “death & dying”, “medicalisation” and “stigma”, all of which are quite heavily theoretical. Other subjects mentioned by respondents included pharmacy practice or social science research design, methods and methodology (2, 3 and 4 individuals, respectively), outcomes and quality improvement (3 individuals) and indigenous/population health and cultural awareness (3 and 4 individuals, respectively).

What was most interesting about Table II, besides the lack of teaching of theoretical subjects, was the list of “innovative” subjects (such as health inequalities,

international health systems, outcomes and quality improvement, indigenous/population health and cultural awareness) that were being taught by only a few individuals. Perhaps these teachers are the movers and shakers in academic pharmacy. The biggest surprise, though, was how few lecturers are teaching concordance, an initiative aimed at involving patients in decision making about their medicines.

The remaining questions about knowledge, skills and attitudes being engendered in students; course evaluation; student assessment and faculty qualifications were open-ended allowing a free response. The answers to these questions were, perhaps, the most interesting and the range of responses have been encapsulated thematically in Table III. The numbers in brackets give an indication of the number of times that the particular subject was mentioned but do not indicate the importance or otherwise of any particular answer.

One respondent stated that social science knowledge, skills and attitudes were not highly valued by their department and that the social science content of the course had been cut to less than half of what it had

Table III. Knowledge, skills and attitudes being engendered in students; course evaluation; student assessment and faculty qualifications (number of mentions).

Knowledge, skills and attitudes being engendered in students

Critical thinking and decision-making using conceptual foundations of social theory (8)

Relationship between society, health, disease, the individual and the health professional (9)

Relationship between theory and practice, problem solving (6)

Patient-centred care, patient motivations and behaviour (12)

Respect for/awareness of self and others, considering all aspects of the individual (7)

Social conscience and responsibility (3)

Appreciation of what it means to be a professional, including legal, ethical and moral aspects; self-learning and professional development (9)

Ability to influence health care system and people who work within it; intervention in public policy (10)

Global view of complexities of communication, social interaction and relations (5)

Acquire effective communication skills, including assertiveness and conflict resolution (10)

Information retrieval, evaluation and dissemination (2)

Understanding global health issues, including disparities and health care systems (6)

Understanding of health needs of rural and indigenous populations (3)

Appreciation of lay health, illness and cultural beliefs (4)

Basic research skills—quantitative and qualitative, including literature evaluation and evidence-based medicine (7)

Health economic theory (3)

Outcomes and quality improvement (2)

Understanding financial information and managing employees (3)

Course evaluation

Trial and error, student feedback, formal course evaluations and questionnaires (14), peer review (3), focus groups and informal chats with students/staff-student meetings (8), tracking student outcomes (eg scores on videotapes of patient counselling), knowledge surveys at beginning and end of course, discussion boards in web-based programmes, external examiners, university review panels (2), accreditation bodies such as pharmaceutical societies, graduate surveys, questionnaires for industry and professional organisations, focus on educational outcomes

Student assessment

Examinations/tests (21), qualitative interviews, reflective diaries/professional portfolios (5), assignments/dissertations/written and oral presentations (11), practical tasks (eg communication exercises) (8), peer assessment, tutorial participation (2), clinical placement reports and workbooks, videotaping of communication sessions/vignettes (4), OSCE using standardised patients/actors, group and individual projects (6), problem solving/case studies (2), treatment plans, preparation of patient education program/material/pharmacy service (2), open forum with public and press invited, delivery of health education talks in the community, out of class activity such as interview of alternative practitioner or report on 'new age' book

Faculty qualifications

Bachelor and Master degrees—Pharmacy; Science; Medical Science; Clinical Psychology; Law; Health Policy, Management and Evaluation; Commerce

PharmD

PhDs—Pharmacy; Pharmacy Practice; Clinical Pharmacy; Pharmacology; Sociology; Health Sociology; Psychology; Education Psychology; Philosophy; Economics; Health Economics; Education; Political Science; Social and Administrative Pharmacy; Pharmacy Administration; Social Pharmacy; Health Policy and Administration; Public Health; Epidemiology and Biostatistics; Pharmacoepidemiology; Medicinal Chemistry; History; Ethics and Law; Geography; (Psychiatric) Health Services

Other—MBA; Pharmacy Attorney; Ethicist; Communication Skills expert; Health Economics; Nursing; Speech and Language Therapy; Alternative Medicine; PhD students; Undergraduates

been 10 years ago. However, this was the exception as most respondents gave very detailed descriptions of what they are trying to engender in students, as exemplified by the following quotations.

We are trying to engender an appreciation, based on knowledge of underlying theory and recognition of students' own beliefs and experiences, of the factors which influence the health behaviour of individuals and society.

We are trying to engender professionalism in our students and, in doing so, give them the sense of belonging to a special group who must take responsibility for the health and well-being of their

clients. I believe that adding courses in the social pharmacy area would make students better understand that ill health is not simply a physiological phenomenon but is heavily woven with the psychological, environmental, nutritional and financial issues which clients have.

The mission of the Division of Pharmacy Administration and Practice is to empower students to improve the quality of life of the community and its members by identifying and responding to their drug-related needs and reducing the risk of drug-related problems in a cost effective, efficient and ethical manner.

The success or otherwise of the attempt to engender various knowledge, skills and attitudes was seen as a very difficult thing to evaluate as encapsulated by the following response.

It is relatively easy to determine the 'success' or otherwise in the short term by means of essays, research projects, evaluations etc... however, the long-term 'success' will be determined by the emergence of a responsible profession that responds appropriately to society's needs—and this is much more difficult to determine.

Some Schools use graduate surveys and methods of employer feedback. Others rely on more anecdotal expressions of success after some years of practice, including graduate's letters and verbal feedback, such as "now I appreciate what you were trying to teach me". One respondent suggested success would have been achieved "if we produce pharmacists who take a broad view of the field and the profession, pharmacists who seek to read their environment and are flexible and ready for change". Another respondent, from a culture where it is common for students to travel overseas after graduation, thought that "an important indicator would be whether or not they came back".

Table III includes the range of methods of course evaluation but it is worth recording one response more fully.

The assessment committee is tracking 1 or 2 specific outcomes from the social and administrative area to see if students are achieving these outcomes, for example, tracking their videotape scores on patient counselling to see if scores vary from year to year. If a difference is noted, the process will be evaluated to determine the cause for significant differences in scores.

Similarly, the various methods used for student assessment are collated in Table III but one respondent gave some detail on a more unusual method.

Formative assessment is based on tests whilst summative assessment is primarily based on the traditional three hour examination. However, an increasing allocation of marks is being given to portfolios. They offer opportunity for numerous assignments, continuous self, peer and lecturer assessment, reflective practice, the opportunity to justify opinions, and the selection of a single assignment for final assessment. This forms part of the second, third and fourth year learning programme.

The range of qualifications held by faculty involved in teaching social pharmacy subjects covers the full spectrum from undergraduates to professors including full-time and part-time faculty, guest lecturers, team teachers, doctoral students and pharmacists who are

providing pharmacy care services in institutions or the community. Many hold pharmacy degrees with PhDs obtained in a broad range of other disciplines as shown under faculty qualifications in Table III.

Respondents were asked for any other comments with regard to the teaching of social sciences to undergraduate pharmacy students. Several commented on the difficulty in responding to a general questionnaire because of the lack of commonality in course structure across the different schools and countries and also because of the lack of a "bespoke social pharmacy course", referring instead to situations where "the learning is spread throughout various practice related courses". Most respondents were very positive about the place of social sciences in the pharmacy curriculum but one seemed to think that the subject area had peaked and been overtaken and another thought that students and colleagues were not very receptive to the material.

I fear that we have lost the social sciences in the age of therapeutics-focused, integrated, "vocational-technical" modelled education ("just teach them what they need to know, forget the theoretical stuff"). I've heard practice faculty say rather forcefully, "If I don't see it/use it in my practice, they don't need to know it." We are training (not educating) doctoral-level practitioners.

We could be doing a lot more than we are. Students often don't see the relevance of the material. Colleagues often don't see the relevance of the material. It is hard to get funding for this type of research.

Finally, one respondent mused about the way forward.

There is a need to define the concept of Social and Administrative Pharmacy, and develop a taxonomy and framework that allows teachers to take on that part which deals with the priority needs of their particular country. There is also a need for a strong debate regarding the role of pharmacists, [including] the foundational and applied competencies that they need to fulfil that role. It is possible to split the degree to consider two options—a scientific programme that will produce the scientists and a professional programme that provides a balance between the scientific knowledge and the social and administrative competencies that are needed to solve problems.

Discussion and conclusion

This survey represents a "snap-shot" of teaching activity in 2004, and cannot be considered in anyway a comprehensive depiction. Since the invitation to participate was sent out using snowball sampling, there were almost certainly possible respondents who did not know about it and were unable to respond.

The responses were returned voluntarily and there is no way of knowing who did not respond nor why. Therefore, the sample must be considered self-selecting and quite probably highly concentrated amongst those schools that have teaching programmes in social or administrative pharmacy. The survey was mostly confined to the western world and so Asia (including the Indian subcontinent, South East Asia and China) and Latin America (except for one response from Puerto Rico) are not represented. The authors are aware that some of these Schools of Pharmacy, in Thailand, for example, run Social Pharmacy programmes. Even within the western world, though, there are gaps in the information. No responses were obtained from France or Germany, both countries identified in a previous survey as having very conservative programmes based on the pharmaceutical sciences (Schaefer et al., 1992).

Because of the wide range of pharmacy courses, including the configuration and content of curricula, the length of training, the pre-entry requirements and the level of admission to professional pharmacy programmes, it was extremely difficult to design a questionnaire that would cope with all of the combinations and permutations. Some respondents found it difficult to provide answers on a school-wide basis and necessarily gave approximations. Similarly, no attempt has been made to determine the differences between participants' use of the terms "administrative" pharmacy and "social" pharmacy. It may be that some courses include critical social science analyses based on social science theories and methods (including consideration of power relations, economic incentives, risk management, etc) while others simply describe and "educate" students about the status quo. For these reasons, it is difficult to compare one course with another. Additional limitations were created by the nature of the web-based survey instrument. The rating grids in the questionnaire did not allow for multiple answers, which would have enabled information to be collected in one table across all years of a curriculum. Instead, individual questions had to be asked about each year, leading to much repetition and a long and possibly tedious questionnaire for respondents. In future studies, a custom designed questionnaire is recommended.

Despite these limitations, though, the web-based questionnaire proved to be a versatile and dynamic tool for conducting the survey, since answers were received quickly by electronic means and automatically collated. The findings give a picture of the level of acceptance of social/administrative pharmacy in pharmacy undergraduate curricula, the disciplines drawn upon in designing courses, the variety of subjects being taught and the detail surrounding course objectives, course evaluation and student assessment.

Firstly, it appears that there has been little change in the 1992 observation by Schaefer, Leufkens and

Harris that the type of course being taught in any particular school is highly dependent upon the qualifications of the personnel available. There is still a relatively small pool of highly specialised people engaged in developing and presenting pharmacy undergraduate teaching in the social sciences.

Secondly, compared to the previous survey over a decade ago, social/administrative pharmacy appears to have gained in acceptance within the pharmacy establishment and shows an added degree of sophistication, perhaps denoting maturity. For example, only a few respondents in the current survey mentioned the lack of recognition from pharmaceutical sciences colleagues, whereas 10% of respondents to the 1992 FIP survey recorded this as a major "pitfall threatening the future development of social pharmacy/pharmacy administration" (Schaefer et al., 1992). Furthermore, the 1992 survey found that the "most striking arguments for teaching social pharmacy/administrative pharmacy" included helping to prepare students better for their future professional role, contributing to the safer use of medicines by the patient, promoting better communication with patients and physicians and promoting the ability of students to think in a more complex way. By contrast, the current survey found that the "knowledge, skills and attitudes being engendered in students" included critical thinking and decision-making in light of an understanding of social theory, patient-centred care derived from an understanding of behavioural motivations and lay/cultural health beliefs and global views of communication and what it means to be a professional. These differences suggest the development of a theoretical body of knowledge underpinning the discipline of social pharmacy. However, it could also be suggested that the continued, heavy, teaching focus on basic disciplines and subjects like the history of pharmacy, communication skills, law and ethics and pharmacy professional organisations is indicative of an element of stagnation that stymies further theoretical development. Alternatively, some would argue that pharmacy graduate programmes, rather than undergraduate programmes, should be responsible for advancing theory. The counter argument is that the theory developed in graduate programmes should inform undergraduate teaching.

One interesting finding was the range of subjects being taught under the banner of social pharmacy, from "scientific" subjects such as biostatistics, clinical epidemiology and pharmacoeconomics to applied behavioural subjects such as communication skills, cultural issues and marketing. There have been several calls over many decades for a definition of social and administrative pharmacy and the development of a distinction between social pharmacy and pharmacy practice but this does not seem to have been achieved (Johnson & Wertheimer, 1979; Leufkens et al., 1993; Manasse & Rucker, 1984; Ryan & Bissell, 2004).

Perhaps it is not possible or even desirable to define social pharmacy any more specifically than the application of the social and behavioural sciences to the practice of pharmacy and to continue to incorporate all those subjects that do not fit comfortably under the natural sciences? On the other hand, however, if social science based understandings are to be utilised to improve clinical practice, promote informed political awareness, develop professional and managerial competencies, inform ethical judgements and engender a critical approach which encourages change (and hopefully improvement) in services and health care delivery, then perhaps it behoves us to strive for definition.

Attempts have been made to address the issue of what it is that constitutes social pharmacy. At the 13th International Social Pharmacy Workshop in Malta in 2004 an open forum disclosed a wide range of opinions from those calling for a “common set of concepts and theories (to overcome) inconsistency across and within curricula” to those who thought that there was “nothing inherently wrong with an atheoretical approach”. A theoretical approach was seen as needed to bring about change in behaviour related to medicines use and as a requirement in securing funding for research. It was pointed out, however, that theory determines the way we look at things and is implicit even if it is not always acknowledged. Ryan & Bissell (2004) called for more applied theoretical work in social pharmacy that could help with the development of a theoretical and conceptual knowledge base to inform research and teaching in the discipline. Such questions—replicated in discussions about the place of social science teaching within the medical and nursing curricula—are likely to remain as the practice of pharmacy responds to the exigencies of the 21st-century.

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