

RESEARCH

Mental Health Curricula at Schools of Pharmacy in the United Kingdom and Recent Graduates' Readiness to Practice

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Objective. To assess mental health education in the undergraduate pharmacy curricula in the United Kingdom and gauge how well prepared graduates are to manage mental health patients.

Method. The authors conducted semi-structured telephone interviews with pharmacy educators and administered an electronic self-administered survey instrument to pharmacy graduates.

Results. The mental health conditions of depression, schizophrenia, bipolar disorder, and Parkinson disease were taught, in detail, by all schools, but more specialized areas of mental health (eg, personality disorder, autism) were generally not taught. Just 5 of 19 schools attempted to teach the broader social aspects of mental health. A third of the schools provided experiential learning opportunities. Graduates and recently registered pharmacists stated that undergraduate education had prepared them adequately with regard to knowledge on conditions and treatment options, but that they were not as well prepared to talk with mental health patients and deal with practical drug management-related issues.

Conclusion. The mental health portion of the undergraduate pharmacy curricula in colleges and schools of pharmacy in the United Kingdom is largely theoretical, and pharmacy students have little exposure to mental health patients. Graduates identified an inability to effectively communicate with these patients and manage common drug management-related issues.

Keywords: mental health, pharmacy education, graduate, curriculum

INTRODUCTION

Mental illnesses are common and vary from those that impact people severely throughout their lives, to those that are less severe and have a lesser impact. What sets mental illnesses apart from other diseases though is their societal impact. For example, the societal cost of anxiety in the United States exceeded \$42 billion during the 1990s,¹ and mental health disorders are known to be associated with significantly higher impairment than chronic medical disorders.² Each year an estimated 38% of the European population experiences a mental disorder, the most frequent of which are anxiety disorders (14.0% of population), insomnia (7.0% of population), major depression (6.9% of population), somatoform (6.3%), attention deficit hyperactivity disorder (ADHD) (5%) in the young, alcohol and drug dependence (>4% of population), and dementia (1%–30%, depending on age).³ Health care providers commonly prescribe medications for people with mental health problems,

and may prescribe multiple medications over an extended period of time for those with severe mental health problems.

Most medicines used to treat mental illness are associated with side effects, which can result in patient non-adherence or cause long-term health problems.⁴⁻⁶ Also, many medicines are only partially effective or only effective against some aspects of the illness but not others. These factors make selecting the best medication a key issue for pharmacists and psychiatrists and may require trying several alternative medications to find the ideal treatment regimen for a patient. The need for pharmacists to be well educated about mental health conditions and their treatments is therefore important.⁷ However, only limited research on mental health curricula has been conducted and only one 1990 study explored the undergraduate mental health curriculum in UK schools of pharmacy.⁸ Branford found that teaching of mental health care in the then 16 schools of pharmacy varied widely, although lectures on the primary uses of psychiatric drugs and the clinical presentation of illnesses were covered by most schools. A 2007 study of US colleges and schools revealed that a wide range of mental health conditions were taught in the

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pharmacy curriculum, although the time devoted to the different conditions varied considerably.⁷ Given that UK mental health services have dramatically changed since the work of Branford, moving from predominantly hospital-based care to tailored local community care,⁹⁻¹⁰ and that studies have shown that pharmacy students have stigmatizing views regarding mental health illnesses¹¹⁻¹³ the authors felt that reassessment of mental health teaching in UK schools of pharmacy was needed.

This study aimed to provide up-to-date information on undergraduate pharmacy mental health education and training offered by UK schools and to gauge how well graduates are prepared to manage mental health patients. In order to capture the whole of mental health education provision in pharmacy schools, this study used a broad definition of mental health that included areas that many educators may categorize differently, for example conditions that may be treated as neurological (eg, epilepsy and Parkinson disease) rather than as mental illness.

METHOD

The authors used a mixed methods approach in this study: semi-structured telephone interviews with pharmacy educators and an electronic self-administered survey of graduates. The content of the interview was developed by one of the authors in conjunction with The College of Mental Health Pharmacy, senior employed mental health pharmacists, and academic pharmacists. Questions were open-ended and explored curriculum content and delivery.

The lead pharmacy practice (those responsible primarily for clinical teaching) academic at each UK school of pharmacy (n=26) was contacted by phone and asked to identify the faculty member at the school who had responsibility for coordinating mental health teaching. Twenty faculty members agreed to be interviewed, including 7 from “new” schools (those established since 2000). The 6 schools that did not participate included both established and new schools; 2 stated that work commitments precluded participation and 4 failed to reply to invitations despite multiple requests. Prior to the interview, the interviewer first assured the participant regarding the anonymity and confidentiality of their responses. The participant then had the opportunity to ask questions before giving verbal consent to participate.

Interviews took place between April and June 2012. Interviews were audio recorded and their responses were transcribed verbatim. The quality of 1 recorded interview was too poor for transcription purposes and was omitted from the results. Therefore, results were drawn from 19 schools.

Nvivo software (QSR International Pty Ltd, UK) was used to manage the data and a mainly deductive approach to analysis was used, although inductive analysis was

used in establishing any emergent themes. With regard to objectivity the interviewer did not have a background in mental health and did not contribute to any mental health teaching at the institution where he worked.

The survey instrument consisted of 4 sections that covered the following areas: basic demographic information; exposure to mental health teaching while at university; perception toward “readiness” in providing care to mental health patients; and continuing professional development (CPD) undertaken since leaving university. Question development went through the same collaborative development process as the interview schedule, which allowed face and content validity to be checked.

The target population for the survey was 2012 pre-registration students (there is a 1-year internship period between graduation and registration as a pharmacist) and pharmacists who had registered since 2007 (ie, 5 years post-qualification or less). The Royal Pharmaceutical Society (pharmacists’ professional body) distributed the survey instrument via their e-mail member distribution list and through their special interest group network. In addition, a Web-link to the survey instrument was hosted by 2 pharmacy-specific journals: *Pharmaceutical Journal* and *Chemist and Druggist*. The survey instrument was available to complete between June 1 and August 16, 2012.

Data Analysis involved a combination of simple descriptive statistics and statistical analysis using chi-square. Ethical approval was granted by The Behavioral Sciences Ethics Committee, University of Wolverhampton, Wolverhampton.

RESULTS

Interview Results

The authors divided the interview results into 3 main areas: breadth and depth of teaching, mode of delivery, and clinical teaching philosophy. All interviewees discussed, at length, the subject areas taught in pharmacy school. Most schools covered a broad range of conditions, with a number of “core” clinical areas being covered in detail. Subjects that were covered in detail by all schools were depression, schizophrenia, bipolar disorder, Parkinson disease, epilepsy, and anxiety. Dementia, Alzheimer disease, and alcohol abuse also were taught by all schools but only 10, 8, and 9 schools, respectively, covered each in detail. The interviewees reported that several clinical areas received little attention and were poorly covered (Figure 1). The variation can, in part, be explained by some schools making strategic decisions to concentrate teaching on those clinical areas that were most commonly encountered by pharmacists in primary care. Curriculum

content was strongly medicines-focused, with few (n=5) schools covering the social aspects of mental health, eg, holistic care, stigmatization. Just 2 schools offered additional mental health teaching through an optional module. Interviewees stated that these elective courses gave them an opportunity to cover conditions not addressed in the core curriculum (eg, ADHD, eating disorders) or to cover specific aspects of care in more detail (eg, electro convulsive therapy).

Teaching approaches taken by schools fell into 2 broad types: a traditional and an integrated delivery model. The traditional approach involved a linear progression from basic fundamentals of science, to pharmacology, to therapeutics, with each area taught independently and in isolation from the others. Science components were taught by science faculty members and therapeutics taught by pharmacist academics or practitioners. This approach was reported more frequently by interviewees at established schools (9 of the 12).

An integrated delivery model had been adopted more in the new schools of pharmacy (n=4/7). In this model, attempts had been made to sequence material from basic science to patient care. Typically, science faculty members and practitioners delivered material jointly so that scientific principles led directly into therapeutic application.

Eight schools employed pharmacists who had previously worked in mental health, and they, along with practicing pharmacists, were responsible for almost all teaching in this area. Other healthcare professionals were occasionally involved in delivery; 3 schools had some input from doctors but the extent of their involvement varied from a single lecture to a series of lectures covering the signs, symptoms, and diagnosis of mental health problems. Five schools employed no faculty members with any mental health background and relied on pharmacy practitioners with no subject specialization to deliver clinical and therapeutic teaching.

School	ADHD	Alcohol misuse	Alzheimer's	Anxiety	Autism	Bipolar disorder	Schizophrenia	Dementia	Depression	Eating disorders	Epilepsy	OCD	Parkinson's	Personality disorder	Substance misuse
A	+	+	++	++	--	++	++	++	++	++	++	+	++	+	+
B	+	++	++	++	--	++	++	+	++	++	++	--	++	--	++
D	+	+	++	++	--	++	++	++	++	+	++	+	++	--	+
E	--	+	+	++	+	++	++	++	++	--	++	--	++	--	+
F	--	++	--	++	--	++	++	++	++	--	++	--	++	--	++
G	--	+	+	++	--	++	++	+	++	--	++	--	++	--	+
H	--	+	++	+	--	++	++	++	++	--	++	--	++	--	++
I	+	+	+	+	+	++	++	+	++	--	+	--	++	--	++
J	--	+	+	++	--	++	++	+	++	--	++	--	++	--	+
K	+	+	I	++	--	++	++	I	++	++	++	--	++	--	++
L	++	++	++	++	--	++	++	++	++	++	++	++	++	--	++
M	--	++	I	++	--	++	++	++	++	--	++	+	++	--	++
N	+	+	--	++	--	++	++		++	--	++	+	++	--	++
O	+	++	+	++	+	++	++	+	++	+	+	--	++	--	++
P	--	+	+	++	--	++	++	+	++	+	++	--	++	--	+
Q	++	++	++	++	--	++	++	++	++	--	++	++	++	--	++
R	--	++	++	++	--	++	++	++	++	--	++	--	++	--	++
S	--	++	++	++	--	++	++	++	++	--	++	--	++	+	++
T	++	++	++	++	--	++	++	++	++		++	--	++	--	++

++ Topic covered in detail
 + Topic covered but not in detail
 -- Not taught
 I Dataset incomplete

Figure 1. Clinical Topics Taught by Each School of Pharmacy in the United Kingdom (N = 19).

Just 4 schools brought patients into the classroom to aid in teaching students about mental health. One interviewee shared that in an attempt to instill empathy in their students rather than just knowledge, they had “expert” patients come in to speak to students and that the feedback from the students was “phenomenal.” “We had a patient come in and just literally tell his story and that’s been really quite powerful, but we need to do that a lot more.”

As highlighted by some interviewees, some schools had reservations about involving patients with mental health problems in the classroom, with one interview explaining that they chose not to because of “all the issues with consent and meaningful consent” that might arise.

Six of the 19 schools offered some form of specific mental health experiential opportunity; 5 based in secondary care centers and 1 in a primary care center. However, this opportunity was not guaranteed in 3 of the schools because of the high student number and/or restricted access to local mental health services.

In all 6 schools that offered a specific mental health experiential opportunity, the experience tended to be more observational, with students shadowing practitioners, than experiential, with students actually interacting with or caring for patients. Any other interaction with mental health patients in all 19 schools was by chance, with interviewees admitting that when students had the opportunity to interact with a mental health patient it was because there happened to be a mental health patient registered at the care center to which the student was assigned.

Survey Results

Of the 457 people who logged on to the survey site, 147 declined to participate or consented but then did not complete the survey instrument. An additional 14 survey instruments were discounted because of minimal dataset completion, leaving 296 usable completed survey instruments.

Two-thirds (69%) of respondents were female; a third (35%) were undertaking their pre-registration year, and the remainder (65%) were practicing pharmacists. Responses were received from all UK schools of pharmacy (n=25) that had graduated students. A small number (5%) of respondents had gained their qualification abroad. Half of respondents were working in the community sector and 44% in the hospital sector. Two-thirds of respondents said they did not have substantial contact with mental health patients. The profile of respondents varied considerably from that of UK pharmacy workforce data.¹⁴ Women, people working in the hospital sector, and pre-registration students are overrepresented in the study data.

Almost all respondents stated that depression (95%), Parkinson disease (95%), epilepsy (91%), schizophrenia

(88%), and bipolar (88%) were covered while at university. Approximately 81 and 74% reported that Alzheimer disease and anxiety were taught. Less common conditions, such as autism and personality disorder, were the least covered (Table 1).

When respondents were asked to comment in writing on the mental health content of their pharmacy education, they highlighted deficiencies in what their school had taught, especially the lack of translating theoretical knowledge to practical application. Additionally, respondents spoke about their unpreparedness to talk with mental health patients, highlighting the need for better instruction in effective communication.

The lack of first-hand experience to contextualize theory was also mentioned on a number of occasions. One pharmacist shared that because of the “absence of any mental health experience” in pharmacy school, he/she “did not feel confident in mental health conditions” upon first entering practice.

The survey instrument also asked respondents a series of statements regarding various aspects of caring for mental health patients (Table 2). Respondents stated that they were the most prepared centering on knowledge acquisition: on the pharmacology of medicines for mental health illnesses (58% fully prepared) and the signs and symptoms of mental health conditions (34%).

Areas where respondents stated they were not at all prepared related to communication with mental health patients (53%); signposting (ie, directing patients) to other services (49%); understanding care pathways (38%), and understanding other healthcare professional roles (32%). Significant differences ($p \leq 0.05$) were observed between

Table 1. Clinical Topics Related to Mental Illness Taught During Undergraduate Pharmacy Education in the United Kingdom (n=274)

Clinical Condition	No. (%)
Depression	261 (95.3)
Parkinson disease	260 (94.9)
Epilepsy	250 (91.2)
Delusional disorders (eg, schizophrenia)	241 (88.0)
Bipolar disorders	241 (88.0)
Alzheimer disease	222 (81.0)
Anxiety	203 (74.1)
Substance misuse	173 (63.1)
Alcohol misuse	151 (55.1)
Law (eg, Mental Health Act)	131 (47.8)
Attention deficit hyperactivity disorder	87 (31.8)
Obsessive compulsive disorders	86 (31.4)
Eating disorders	61 (22.3)
Personality disorder	55 (20.1)
Autism	24 (8.8)

Table 2. Degree to Which the Undergraduate Pharmacy Curriculum in the United Kingdom Prepared Respondents to Manage Patients With Mental Health Problems

Statement	Fully, No. (%)	Partially, No. (%)	Not At All, No. (%)
Knowledge of the signs and symptoms of the conditions (n=276)	94 (34.1)	167 (60.5)	15 (5.4)
Knowledge of the pharmacology of the medicines (n=275)	159 (57.8)	108 (39.3)	8 (2.9)
Understanding clinical guidelines (n=275)	69 (25.1)	156 (56.7)	50 (18.2)
Helping manage the patient condition in terms of therapeutic options (n=274)	57 (20.8)	161 (58.8)	56 (20.4)
Understanding care pathways (n=275)	33 (12.0)	139 (50.5)	103 (37.5)
Signposting patients to relevant services (n=273)	42 (15.4)	97 (35.5)	134 (49.1)
Understanding the role of other healthcare professionals have in patient management (n=275)	59 (21.5)	27 (46.2)	89 (32.4)
Effectively communicate with patients suffering from mental health problems (n=274)	30 (10.9)	99 (36.1)	145 (52.9)

pre-registration students and registered pharmacists with regard to the level of readiness on therapeutic options ($p=0.017$), understanding care pathways ($p=0.014$), and signposting patients to services ($p=0.002$); in all 3 cases, registered pharmacists perceived themselves as less well prepared than did preregistration students. Respondents also rated their levels of confidence and competence in managing mental health conditions (Table 3). For all conditions, their perceived level of competence was closely associated with the level of confidence they expressed.

One hundred three respondents indicated what formal CPD they had undertaken in relation to mental health. The commonest form of formal CPD respondents had undertaken was postgraduate studies, which usually led to a clinical diploma and was commonly completed by pharmacists working in the hospital sector. Informal CPD activities, in both hospital and community sectors, were through accessing free material from the College of Postgraduate Pharmacy Education (UK-based and government funded center to promote pharmacist professional development).

The CPD undertaken centered on topics that respondents had expressed the greatest confidence and competence earlier in the survey instrument (multiple-choice items) rather than on those areas in which they had reported weakness, eg, patient communication.

DISCUSSION

The majority of clinical areas regarding mental illness are taught by all UK schools of pharmacy. Some schools had purposefully concentrated teaching on mental health conditions that pharmacists in primary care would most often encounter, which seems sensible given that over two-thirds of all graduates ultimately find employment in primary care,¹⁴ and all pharmacy schools face challenges in balancing curriculum content to attain

and maintain accreditation.¹⁵ Traditional methods of teaching predominantly focused on acquisition of knowledge centering on mental health conditions and their treatment, which was supported by survey findings, with many respondents commenting that practical application for day-to-day management of patients was neglected. Interviewees reported that teaching of aspects of mental health not related to medications was uncommon, and this was reinforced by survey respondents. None of the interviewees mentioned offering specific communication skills training to help students interact with mental health patients, and this was reflected in survey respondents questioning their ability to appropriately communicate with mental health patients.

Table 3. A Comparison of Bachelor of Pharmacy Graduates' Perceived Competence and Confidence in Managing Mental Health Conditions

	Competent, %	Confident, %
Depression	83.8	78.3
Epilepsy	71.3	69.7
Substance misuse	68.8	58.9
Parkinson disease	68.0	69.1
Anxiety	63.6	56.8
Alcohol misuse	62.2	48.6
Alzheimer disease	51.2	40.6
Bipolar disorders	46.9	43.6
Delusional disorders (eg, schizophrenia)	40.6	40.4
Attention deficit hyperactivity disorder	20.4	21
Obsessive compulsive disorders	19.6	18
Eating disorders	18.0	15.4
Personality disorder	16.7	13.9
Autism	6.6	7.1

The anxiety surrounding communicating with mental health patients may well be compounded by the lack of experiential opportunities and patient contact with these patients that students and pre-registration pharmacists receive. In part because of lack of national funding, undergraduate pharmacy training in the United Kingdom is different from training in other healthcare professions, such as medicine and nursing, where students have extended time in practice. As a result, undergraduate pharmacy curriculum is delivered almost exclusively in the classroom and theory based. Schools try to provide some experiential opportunities for students, but most schools do not provide experiences in mental health care, and in some circumstances, deliberately avoid offering such opportunities. Therefore, in 4 years of undergraduate training, a UK pharmacy student may not observe or interact with a mental health patient in a care (or classroom) setting. The unwillingness of schools to provide such opportunities appeared, in part, to originate from perceptions held by the institution that experiential mental health learning opportunities would be more difficult to arrange than other therapeutic experiences. Whether this is grounded in institutional stigmatization toward mental health patients requires further investigation, but such attitudes help to explain study findings that pharmacy students hold/have stigmatizing views toward these patients.¹¹⁻¹³ Pharmacy educators in the United Kingdom therefore need to consider how curricula can be modified to improve contextualization and increase patient contact. Without major reforms to academic delivery (which are currently being considered at the government level¹⁶), the provision of meaningful work-based placements of pharmacy students seems unlikely. However, involvement of mental health patients in the classroom is more achievable and this has been shown to reduce stigmatizing views held by students.^{17,18}

If these areas are addressed, then graduating pharmacy students and newly registered pharmacists should be better able to manage and effectively communicate with patients— something that the survey respondents flagged as a concern. Nevertheless, pre-registration students regarded themselves as “more ready” than did registered pharmacists in certain areas, and this may be an indication that schools are starting to provide a curriculum that better meets the needs of practicing pharmacists. However, clinical components were taught almost exclusively by pharmacists, some of whom had no specialized knowledge in mental health. This pharmacy-centric view of mental health raises questions about schools’ ability to provide a more holistic view of mental health provision— and an admission from most interviewees that this aspect of provision was not covered. If pharmacy graduates and

newly registered pharmacists have poor understanding of what other service providers contribute to the wellbeing of these patients, then pharmacists are missing opportunities (eg, identifying patients for referral to a mental health care provider) to maximize patient care. Finally, although most major clinical areas were taught, Alzheimer disease and dementia were less frequently covered in detail. These conditions, given their increasing prevalence in society, probably need to be more thoroughly covered in undergraduate curricula.

The study did have a number of limitations. Some of the interviewees were known to the interviewer. This likely influenced the interaction between the interviewer and interviewee to some extent and this lack of objectivity may have influenced the data collected. Second, the survey data may not be representative of the UK pharmacy population. The authors had difficulty obtaining a list of the desired population. The General Pharmaceutical Council was unable to provide such a list and thus a pragmatic approach to sampling was taken. Because membership in the Royal Pharmaceutical Society is voluntary, not all pharmacists were sampled. Also, the authors did not know how many people completed the survey instrument via this recruitment process or via links in national pharmacy journals. Additionally, the response rate was low given there are approximately 2000 pharmacists joining the GPhC register each year. The approximate sample size in this study was 10,000 to 12,000 people. As a result, the demographics of the study sample did not reflect those of the pharmacy workforce. The low response rate and the differences between the study population and the general UK pharmacist population mean the data collected may not reflect the wider cohort opinion and therefore data interpretation must be treated with caution.

CONCLUSION

Schools of pharmacy in the United Kingdom teach the majority of clinical areas related to mental health care with a focus on knowledge of disease state and treatment options, but provide little patient exposure in which students can contextualize information and learn to effectively communicate with mental health patients to manage practical day-to-day problems. UK Pharmacy Schools should consider providing greater experiential opportunity, whether classroom or clinic based, to better prepare graduates to manage patients with mental health illnesses.

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