The biological sciences in mental health nursing: stakeholders' perspectives

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The biological sciences in mental health nursing: stakeholders' perspectives
To date, relatively little attention has been paid to optimizing the development of education programmes to support safe and effective health care professionals. In particular, the wider stakeholders, particularly health service users, are rarely consulted on the knowledge base expected of practitioners. We report here on an evaluation, involving students, lecturers, nurses and service users, aimed at reviewing the bioscience component of the preregistration mental health nursing course. Students and lecturers agreed that the current common foundation course in bioscience was biased towards the adult branch students, and failed to meet the needs of mental health nurses. The mental health lecturers' solution to the 'bioscience problem' was to curtail the input. In contrast, service users described serious shortfalls in professionals' abilities to inform them of common side-effects of medication; these problems were attributable to inadequate educational preparation. The knowledge deficits identified could be rectified by making pharmacology an important part of the mental health education programme. However, for the curriculum to accommodate applied pharmacology, its supporting bioscience, and essential preparation in psychosocial interventions, some restructuring of the biological science programme for mental health nurses will be necessary. Our findings suggest that such restructuring should be informed by service users' views of their needs.

Keywords: bioscience, pharmacology, common foundation programme, mental health nursing, stakeholders' perspectives, pluralistic evaluation

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INTRODUCTION

The clinical effectiveness of health care professionals is, in part, determined by their education and training programmes. Therefore, it is surprising that so little research has been undertaken on developing an evidence-based curriculum for health care professionals. In particular, the views of service users are seldom sought. This paper reports the perspectives of various stakeholders on the biological science component in the mental health nursing curriculum.

The debate surrounding the relevance of biological science to mental health nursing has emerged in the last decade in response to important developments within nurse education and mental health nursing. In United Kingdom (UK) nurse education there has been a move away from specialist preregistration curricula, as witnessed by the introduction of the Project 2000 (P2K) reforms (United Kingdom Central Council [UKCC] 1986) and the arguments for the removal of specialist registrations, to align the UK with the rest of Europe (Clark 1994, Barr & Sines 1996). For most schools of nursing, the move into higher education involved replacement of separate mental health and general nursing hospital-based training with university diploma and degree programmes. In most institutions, an initial 18-month common foundation programme (CFP) is followed by separate branch programmes. However, this arrangement has been widely criticized, and is currently under review (UKCC 1999).

Policy initiatives in mental health have supported a refocusing of services towards the seriously mentally ill (Department of Health [DoH] 1994). How far this redirection of practice will demand a shift in the knowledge base of mental health nurses is uncertain. However, it is of immediate concern to mental health nurses that those with serious mental illness, from both institutional and community settings, have twice as many physical health problems and standardized mortality ratios twice as high as their contemporaries (Newman & Bland 1991, Amaddeo *et al.* 1995, Brown 1997). Accordingly, official reports, user groups and academics have called for an examination of practice in this area (Chapman 1991, Sheppard 1993, DoH & Royal College of Nursing (RCN) 1994, DoH 1994, Wray 1994, Day *et al.* 1995, RCN 1996). The Department of Health (DoH 1999) has recently commissioned an action plan to determine the key skills and competencies needed by mental health professionals. We should like to suggest that this must be in consultation with all stakeholders — agents, beneficiaries and victims (Guba & Lincoln 1989).

BIOSCIENCE: HOW MUCH?

In the UK, there is no 'national curriculum' for nursing, and each higher education institution has considerable discretion to devise and implement its own programme in all subjects, including bioscience (Wharrad *et al.* 1994, Bowers 1996, Jordan & Potter 1999). Some consider the biological sciences as essential underpinnings to a balanced, holistic approach to nursing care (Clarke 1995, Trnobranski 1993, Trygstad 1994, Wynne *et al.* 1997) and a basis for safe practice (Gould 1984, Mulhall 1990, Gournay 1995); however, others equate holistic care with moves *away* from the biomedical model, and by implication bioscience, in favour of increased emphasis on social and behavioural sciences (Chapman 1976, Cox 1979, Cooke 1993, Williamson 1999). It is suggested that the nursing care of people with mental illness or learning difficulties demands much less biological science knowledge than other branches of nursing (Dawson 1994). However, it is mental health nurses' understanding of both the physical and psycho-social needs of patients which is highly valued (Lankshear *et al.* 1996).

Some aspects of biological science, particularly those underpinning neuro-psychiatry and psychopharmacology, are valued more than others by mental health nurses (Norman *et al.* 1996). Gournay (1996) argues that, if nurses are to inform families of people with serious mental illness, they need to understand diagnostic techniques and the biological hypotheses of the aetiology of mental illness. Far from questioning the relevance of biological science for mental health students, Gournay questions the capacity of the current UK preregistration courses to provide students with sufficient depth of knowledge in this area.

Mental health nursing and the Project 2000 Common Foundation Programme

In view of the disparate nature of the branch programmes, there is much within current nurse education discourse regarding the utility of a *common* curriculum for the first half of preregistration education (White *et al.* 1993, Carlisle *et al.* 1999, Ferguson & Hope 1999). By trying to provide knowledge for such diverse areas of practice, there is a danger that educators will fail to meet the needs of all students (Clarke 1995). The imbalance identified within the CFP may be perpetuating general nursing's hegemony over mental health nursing, while failing to address the core skills of mental health nursing (Jowett *et al.* 1994, DoH 1995a, Barr & Sines 1996, Godin 1996).

A reconsideration of the situation has been recommended, with a view to either enhancing the mental health emphasis within the CFP or returning to specialist preregistration mental health programmes (DoH 1995a, English National Board (ENB) 1995, Sainsbury Centre 1997).

Does mental health nursing need the biosciences?

Skills in psychotherapeutic approaches are essential for mental health nurses to work with clients and families

and undertake effective patient teaching, which is the essence of mental health nursing (Zipple & Spaniol 1987, Brooker & Butterworth 1991, Brooker *et al.* 1994, Wray 1994, Gournay & Beadsmoore 1995). However, it is nurses' involvement in pharmacotherapy that distinguishes them from other professionals such as social workers (Wooff *et al.* 1988, Corney 1999). Patients' rights to information from health care professionals regarding their treatment and medication are stated in *The Patient's Charter* and reiterated elsewhere (NHS Management Executive 1990, Medical Defence Union 1992, DoH 1995b, Collier 1998, General Medical Council 1998). However, official reports, service users and academics have examined the mental health services and found them wanting in their ability to inform clients and carers, particularly concerning medication (Spaniol *et al.* 1987, DoH 1994, Drug and Therapeutics Bulletin 1994, Watson 1994, Day *et al.* 1995, Welsh Office 1995, RCN 1996, Stallard 1996, Perkins & Repper 1999). Similarly, service users have characterized their interactions with mental health nurses as 'social chatting', without structure (Meddings & Perkins 1999). While Project 2000 students felt well prepared in interpersonal skills (Clark *et al.* 1997), service managers complained that this course does not equip diplomats to administer medication effectively (Carlisle *et al.* 1999). We suggest that, if nurses are not adequately prepared in the biological sciences, particularly pharmacology, they will be unable to meet their professional obligations, and therefore it is essential that this issue is explored.

THE STUDY

The position of the biological sciences in mental health nursing was evaluated, using four linked components:

- a survey of four consecutive intakes of preregistration nursing students ($n = 354$);
- a survey of their lecturers ($n = 73$);
- interviews with 14 community mental health nurses;
- seven interviews and three focus groups with service users and their representatives.

The juxtaposition of users' views with those of educators and service providers gave a more complete account of clinical need than could be achieved from any single perspective (Smith & Cantley 1985), and adds a unique dimension to this paper.

The four data sets were analysed within the framework of a pluralistic evaluation, sensitive to the ways in which different groups defined educational goals and their attainment. Evaluation is a systematic attempt to learn from experience in order to improve future activities; the relevance, efficiency, effectiveness and acceptability of all programmes should be analysed critically, with reference to all parties involved (World Health Organization 1981). However, traditional evaluations, based on students' attainment of educational or managerial objectives, are unable to accommodate the divergent goals of all stakeholders, and therefore form an inadequate and unserviceable basis for decision making (Nolan & Grant 1993, Ong 1993, Patton 1997). In contrast, pluralistic evaluations recognize, and build into the analysis, the understanding that different groups may not share a common interpretation of success (Murphy *et al.* 1998). This approach embraces the tenets of political pluralism, that any analysis should explore the full range of competing interests, as focusing on any single hegemonic group will misrepresent the situation (Smith & Cantley 1985).

Aims of the study

By collating the views of all those affected by the course, we hoped to obtain a more accurate representation of the social context and consequences of the curriculum than could be gained from any one group (Parlett & Hamilton 1972, Guba & Lincoln 1981, Bond 1996). Comparing the perceptions of students and lecturers from the adult and mental health branches allowed us to assess the utility of a *shared* bioscience curriculum in the initial stages of training. To outline a way forward for the biosciences in mental health nursing curricula, we collected data on stakeholders' perceptions of:

- the value in practice of the biosciences, including pharmacology;
- the links between theory and practice in this area;
- curriculum development.

The setting

In our institution, biological science occupied 144 of 367 CFP curriculum hours (39%), and took a systems approach. Pharmacology was delivered as taught courses of 28 hours, within the branch programmes. The bioscience underpinning was crucial to the students' comprehension of pharmacology, as the side-effects and the related nursing implications were frameworked on normal physiology. For example, when considering a client prescribed a phenothiazine, the increased need for oral hygiene, the augmented risk of tachycardia, and potential problems with glaucoma or urine retention are best linked by an understanding of the parasympathetic nervous system.

Methods

The methods employed in evaluation research are selected and synthesized from various research disciplines to meet the needs of each case (Murphy *et al.* 1998), within available resources (Patton 1997). Therefore, data collection tools were chosen in relation to the characteristics and numbers of respondents (Ong 1993). A questionnaire

was administered to students and lecturers. It was thought that practitioners and service users were less likely to respond to postal questionnaires, and they were interviewed face to face.

Students and lecturers were surveyed, using mainly closed questioning, with opportunity for comments. From 354 students, there were 294 respondents (83%). Of these, 231 (79%) stated they were following the adult, and 35 (12%) the mental health branches. Of the 73 lecturers surveyed, 57, including 18 with the registered mental nurse (RMN) qualification, returned their questionnaires, a response rate of 78%. The findings of this survey were compared to the themes arising from interview data from nurses and service users.

All the user groups and voluntary organizations active locally were approached and representatives volunteered to be interviewed on their own premises, individually or in focus groups. Three focus groups with service users were arranged through NSF (National Schizophrenia Foundation) and MIND (Association for Mental Health). The views of practitioners were obtained in practice settings, in connection with a study to evaluate the mental health pharmacology module (Jordan *et al.* 1999a). Approval was granted by local research ethics committees.

All interviews were semistructured, moving from unstructured to structured questions, and included direct questions on the place of pharmacology in the nursing curriculum. Focus groups were used to obtain the experiences and consensus views of service users on the deployment of knowledge and ideas in specific areas of care (Reed & Payton 1997, Rauktis *et al.* 1998, Robinson 1999). The detail of the responses was an important criterion for validity (Merton *et al.* 1956). The transcribed interviews were subjected to a content analysis, using the responses to provide a simple tabulation of the answers to the set questions (Berelson 1952, Morse & Field 1996). Within each category, correspondence, divergence and range were noted (Merton *et al.* 1956).

The questionnaires to staff and students yielded nominal and ordinal data, which were analysed using the Statistical Package for the Social Sciences (SPSS) system, in terms of overall frequencies and frequencies for subgroups, the branch programmes. The Mann–Whitney *U*-test was used to ascertain the statistical significance of the differences between the groups of respondents, in relation to the dependent variables. Qualitative data were obtained from the comments on the questionnaires and concurrent course evaluations. The common theme of educational effectiveness was followed throughout the four data sets (Mason 1994).

THE FINDINGS

No consensus was reached amongst the diverse stakeholders consulted. Whereas many students and their teachers placed minimal value on bioscience, service users reported problems caused by professionals' lack of knowledge. Although the bioscience common foundation programme (CFP) failed to meet the needs of the mental health students, it was a valuable course component for the majority of students, who were following the adult branch (Jordan *et al.* 1999a).

Value of bioscience: 'You probably know less about it than the car you are driving'

Our findings indicate that the CFP was orientated towards the adult branch, at the expense of the smaller, mental health branch. When students were asked to state their opinions of the value of the bioscience *content of* each of the three semesters of the CFP, there were differences between the students on the branch programmes, which reached statistical significance for all three bioscience components of the first year course ($P < 0{\cdot}05$). (See Figure 1.) Mental health students were dissatisfied with Semester 1, which covered cell theory and gross anatomy, with 23% stating that the content was poor or very poor, as compared with 11% of adult branch students. In their comments, mental health students expressed their discontent:

> Student: There was too much information to retain in a short space of time. An ability to retain large portions of complicated information does not reflect an ability to support and nurse mentally distressed people.

A similar picture emerged for Semester 2, the nervous and endocrine systems, with 21% of mental health students stating that the content was poor or very poor, in comparison to 13% of adult branch students. In view of mental health students' perceived need to gain knowledge in this area, this finding is rather disappointing. Students indicated that certain bioscience topics were more relevant than others, but this was not being addressed, leading

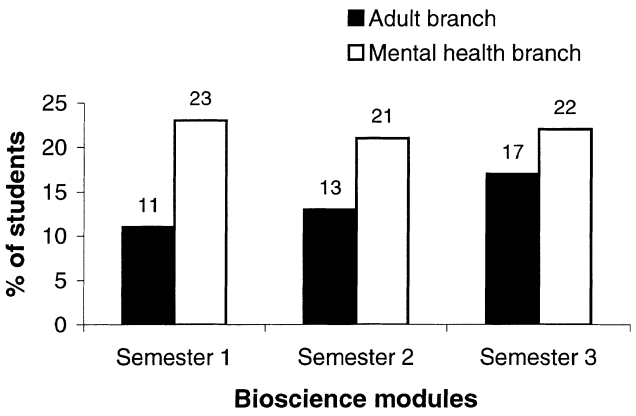

Figure 1 Percentages of students evaluating the content of the bioscience modules as 'poor' or 'very poor' ($n = 266$).

to dissatisfaction with the generalist orientation of the course:

Student: I have not found the knowledge I have gained relevant or helpful in any way in practice. I can understand that it may be relevant to general nursing, but fail to see the relevance to psychiatric nursing.

One possible solution would be branch-specific bioscience or bionursing courses. Branch-orientated bioscience teaching was employed for the pharmacology module, which was designed around the drugs most commonly administered in mental illness. Of 25 students completing the module, 12 were able to describe specific instances where they had succeeded in relating the lessons to practice. The students used their knowledge not only to reinforce accepted practice, for example by discouraging clients taking antipsychotic medication from going out in bright sunlight, but also in their work as patient advocates and counsellors. (See Box 1)

The value of pharmacology, and by implication its supporting bioscience, in mental health nursing was assessed from the perspectives of service users and practitioners. Interviewees were asked for their opinions on the place of pharmacology in the nursing curriculum. Representatives of the voluntary agencies and service users were unanimous that pharmacology should be an important part of nurse training:

User representative: Pharmacology is quite important. Nurses do have responsibilities towards the medical model, by the nature of their posts.…You need to monitor medication, you need to listen to people. It's like counselling, it's something you need to do as a nurse.

A student was approached by a client who was undecided as to whether to accept the doctor's advice to commence lithium therapy. Due to the high rate of hospital admission, linked with mania, when lithium is withdrawn, lithium therapy is initiated with extreme caution: in the first 3 months of lithium discontinuation, the risk of a manic episode is 28 times greater than that of the background illness (Silverstone and Romans 1996, Moncrieff 1996). The student had gained the client's trust, and described how she was able to 'ask the right questions' and so relate the client's single episode of mania to changes in prescribed antidepressants. This indicated that his manic episode was a side-effect of medication, rather than a symptom of bipolar illness (BNF 1999). The student had applied the fact that hypomania occurs in 10–30% of people taking tricyclic antidepressants (Baldessarini 1996). The student's intervention was pivotal to the clinical decision to withhold lithium and reduce the dose of tricyclic antidepressants. This reduced the symptoms of drug-induced 'mania', obviating the need for polypharmacy.

Box 1 Bioscience applied: student report

Most respondents felt unable to quantify the amount of time that should be devoted to nursing pharmacology. 'About a term's worth', was the most concrete estimate obtained, which is more than double the amount currently delivered in this institution.

Practising nurses felt that knowledge of pharmacology was important for their roles, but that, in the past, they had not always been adequately prepared:

Nurse: There's not enough pharmacology education — it's left up to the individual.

Nurse: You are doing this (administering medication) every day — you probably know less about it than the car you are driving — it does set your mind thinking.

While some students, practising nurses and all service users felt that pharmacology was an important element of the curriculum, most students and lecturers placed a low value on the underpinning bioscience. Of the 18 lecturers holding the RMN qualification, nine disagreed with the statement that 'biological science underpins much of nursing practice', compared to four of 32 lecturers without the RMN (a statistically significant difference, $P < 0{\cdot}05$). While the service users suggested more pharmacology input, half the lecturers with RMN qualifications (nine of 18) requested a reduction in teaching time for bioscience. To some extent, this opposition to bioscience knowledge was reflected in practice areas, where service staff were reluctant to accept students' applications of course material. (See Box 2)

Linking theory to practice: 'Help with the constipation and sunburn'

If claims to an evidence-based curriculum are to attain credibility, there must be a demonstrable link between classroom theory and clinical need (DoH 1998, Grant &

After the course, students reported identifying potential drug interactions between antipsychotic medication and antacids, such as Gaviscon®, which were administered 'as a cocktail during drug rounds'. Co-administration of these drugs, within 2 hours, allows adsorption of the antipsychotics on to the antacids, which reduces the bioavailability and clinical efficacy of antipsychotics (Stockley 1994, BNF 1999). In practice, this may be countered by an increase in the dose of antipsychotic. The student reported that the information was accepted by the ward staff, and she was asked several questions, but no changes were made to the administration procedure. The fact that subsequent student evaluations reported similar attempts to raise this issue in practice is disappointing.

Box 2 Bioscience unapplied: student report

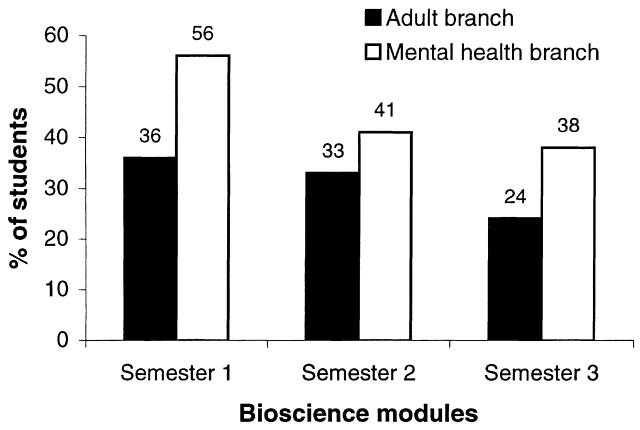

Figure 2 Percentages of students evaluating the theory–practice links of the bioscience modules as 'poor' or 'very poor' ($n = 266$).

Stanton 1998). There were marked differences between mental health and adult branch students on the question of the theory-practice links in the bioscience course. For two of the three semesters, this difference was statistically significant at the $P < 0{\cdot}05$ level. (See Figure 2) The comments made by mental health students regarding the relevance to practice of the biological science modules were all negative:

The biological science modules had absolutely no relevance to mental health nursing practice.

Mental health students and lecturers felt that the bioscience course was biased towards adult nursing, to the detriment of other branches. Similarly, mental health students in a multicentre study felt that their useful training was confined to the 18-month branch programme (White *et al.* 1993). These concerns are related to issues of the theory-practice gap and the provision of a balanced curriculum in the 'common' foundation programme. When bioscience was taught as a branch-specific programme, in pharmacology, some (12 of 25) students demonstrated that it could be applied to practice. Unless students are able to relate their courses to practice, service users and carers will gain the impression that they are uninformed.

Service users were divided in their opinions as to the adequacy of the knowledge of practising nurses. Two of the three focus groups and four of eight user group representatives felt that nurses' knowledge of pharmacology was generally inadequate. Some nurses were unable to respond to direct questions:

User: I asked my nurse about Seroquel, and he said he didn't know because it's such a new drug.

This is of concern, as quetiapine (Seroquel®) is associated with orthostatic hypotension, elevations in plasma cholesterol and triglyceride concentrations and disturbances of the cardiac conducting system, all of which increase the risk of cardiovascular events; these risks are higher in men who smoke, such as this respondent (Zeneca Pharmaceuticals 1999). Had the nurses been aware of the side-effects, they could have requested appropriate monitoring (British National Formulary [BNF] 1999). Even more disconcertingly, some users had found that nurses were unable to deal with the suffering that had arisen in relation to side-effects:

User group representative: CPNs (Community Psychiatric Nurses) focus on the psychiatric illness, they don't see the medical side, or want to become involved. It's to do with their training. They wouldn't help with the constipation or the sunburn for my daughter. This should be in their training.

Constipation and sunburn are frequent and disturbing side-effects of antipsychotic medication, which can be ameliorated by attention to diet and use of sunscreen (Ambrose 1999, Galbraith *et al.* 1999). With effective education programmes to empower mental health nurses to manage medication and its side-effects, these problems would not have arisen (Bennett *et al.* 1995, Veeramah 1995, Jordan *et al.* 1999a). A theme emerging from the interviews with service users was an 'information gap', regarding medication side-effects, which was filled, to some extent, by the voluntary agencies:

User: Nobody tells us. I've got a book on most tablets, which tells you what the side-effects are. The doctors should tell you really, but they don't. With MIND, you get a book that gives you a rough idea of what tablets actually do to you. Apart from that, there is no other way of knowing. I've got a CPN, but they don't say much. I've never actually had any information off him.…I don't think they know themselves because it's not detailed information that they give you. Another thing is, there are so many drugs coming on the market, that I presume they don't know much about them anyway

User group representative: There's a lady that rings up about different medication. She rings up here, and I've given her the MIND Infoline now, and she rings that because *they* give her the information she needs.

In view of the injunctions of the statutory bodies on patients' rights to information from health care professionals, this reliance on voluntary agencies as sources of information is an indictment of the service (DoH 1995b, NHS Management Executive 1990, Medical Defence Union 1992, General Medical Council 1998). The users and carers interviewed would have benefited if their nurses had been better informed and able to relate bioscience knowledge of drug actions to side-effect minimization and patient teaching.

Implications for curriculum development: 'What else is being offered?'

The absence of theory-practice links in the CFP detracted from the students' perceptions of the value of bioscience

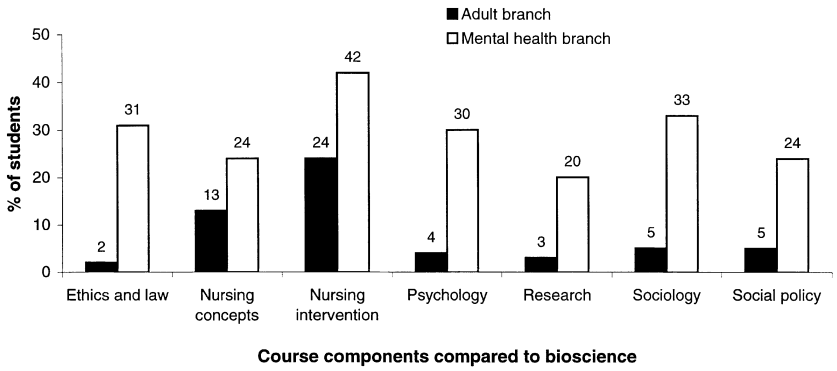

Figure 3 Percentages of students finding bioscience of less value in practice than other subjects ($n = 266$).

in comparison to other subjects. Bioscience was compared with each of the other modules taught in the common foundation programme, in terms of students' perceived value to practice. In each case, the mental health students regarded bioscience as less valuable than did adult branch students: between 20% and 40% of mental health students regarded bioscience as having less value than the other subjects, compared to 2–4% of adult branch students (See Figure 3). For example, psychology was regarded as more valuable than bioscience by 30% of mental health students and only 4% of adult branch students. These differences were statistically significant ($P < 0{\cdot}05$) for four of the seven subjects. The fact that mental health students found behavioural science more relevant for practice may suggest a preference for a social model of care over a biomedical model (Cox 1979, Cooke 1993, Brown & Seddon 1996).

The students' perceptions of relevance were linked to their interpretations of their roles (Thornton 1997). If there is wide disparity between the practice of the branches of nursing, it is possible that lecturers will not be able to deliver the bioscience course so as to relate to the two branches simultaneously. Although the role of mental health nurses has in part evolved around the need to administer medication (Rawlinson & Brown 1991, Sheppard 1991), this should not be their only focus. Recovery from mental illness is optimized by a combination of medication and psychotherapeutic approaches (Hogarty *et al.* 1974). Service users fully understood this, and called for the diversification of the education programme to accommodate nonpharmacological interventions:

> User representative: What else is being offered, like cognitive therapies, holistic therapies? What service users say they want in hospital is somebody to talk to.

Five of seven user group representatives emphasized the importance of ensuring that students were adequately prepared to undertake nonpharmacological interventions with their clients. To give clients the support they need, nurses should be prepared to offer structured psychotherapeutic approaches, as well as fill the 'information gap' in medication management. We found little evidence that the current common foundation programme contributed to mental health nurses' expertise in either of these areas.

The mental health students' dissatisfaction with the bioscience course was reflected in their significantly ($P < 0{\cdot}05$) higher rates of discontinuation (White *et al.* 1999) and failure: only 45% passed the bioscience examination at the first attempt, compared with 68% of the adult branch students. Examination of the teaching and learning strategies adopted offered no suggestions as to the way forward, as mental health students were significantly more dissatisfied than other students with all three teaching methods — lead lectures, teaching laboratories, and tutorials ($P < 0{\cdot}05$). This dissatisfaction with tutorials gives cause for concern, as these are where important links between theory and practice should be made. The problems would have been lessened had the mental health students not been dispersed throughout the tutorial groups.

DISCUSSION

Although all respondents were dissatisfied with the bioscience input into the mental health curriculum, their proposed solutions to the 'bioscience problem' lacked uniformity, and were even diametrically opposed. Inconsistency, contradiction and incompatibility are characteristic of the findings of pluralistic evaluation. No uniform criteria by which to judge the course's successes or failures were identified (Smith & Cantley 1985). While service users and some practising nurses regretted the paucity of effective bioscience and pharmacology education, the present controllers of the curriculum, the lecturers, held contrasting views. Unless curriculum planning is based on the views of all stakeholders, there is a danger that lecturers will be unduly influenced by their own academic backgrounds and ontological assumptions (Hoshiko 1988, Walhout & Heinschel 1992, Thornton 1997, Trnobranski 1997, Jordan *et al.* 1999b).

Identification of stakeholders, and prioritization of their responses, were dependent on the perceptions of the

researchers and resource constraints (Guba & Lincoln 1981). Due, in part, to practical difficulties, accessing the perspectives of service users is sometimes neglected in health service evaluations (Welsh Office 1995), and there can be no guarantee that respondents are representative of the wider population (Sandford 1996, Meddings & Perkins 1999). Even expensive randomized controlled trials involving clients with mental illness suffer from difficulties of subject recruitment and attrition, which may bias the findings (Davis *et al.* 1994, Kane 1996). Like others, we found that focus groups served to vent anger towards the medical profession; however, this does not necessarily detract from the data (Robinson 1999).

This research, based on one institution and purposive convenience samples of nurses and service users, cannot necessarily be extrapolated to other settings, where courses and services are delivered differently. Any generalizations which can be made from this study are theoretical, rather than statistical (Mitchell 1983, Yin 1994). Although investigating a specialist section of the curriculum allowed us to identify a discrete group of service users, the external validity and transferability of our findings are limited by the nature of the data (Creswell 1994, Polit & Hungler 1999). However, our study suggests that the tensions between the competing stakeholders in the nursing curriculum uncovered here warrant further investigation.

The problems identified by others (*vide supra*) of inadequate information-giving regarding medication side-effects were echoed and personalized in our interviews with service users: the authors are perturbed that health care professionals could intensify a family's suffering by omitting to offer simple advice regarding sunburn and constipation. Our curriculum evaluation suggests that the origin of these problems may be found in education programmes, whose developments may not have been evidence-based.

The absence of consensus in our findings reflects the opposing interests and perspectives of the different stakeholders. The service users' sole concern was symptom control, but the lecturers' and practitioners' views were constrained by established practice and entrenched attitudes in the workplace. Unlike the other respondents, lecturers were also constrained by the limitations of an inelastic timetable (Heath 1990). The mental health branch lecturers' solution to the 'bioscience problem' was to address the students' difficulties by curtailing, rather than restructuring, the bioscience input. In our view, this would jeopardize the delivery of the pharmacology module, and leave students unprepared to undertake patient teaching and medication management.

In mental health, professionals are working within competing paradigms, biomedical and psychosocial, and educators must resolve this tension within the curriculum. As respondents said, mental health nurses must be effectively trained in both psychotherapeutic and biomedical approaches. It seems that further work is needed if the curriculum is to effectively prepare practitioners for these multifaceted roles:

> User representative: Nurses are understandably training a lot more in communication skills and things like relaxation therapy and talking therapies. I wouldn't want to go back to the old days, but I don't think they should ignore things like drugs, because there is no way that medication is ever going to stop becoming important in psychiatry. Side-effects are obviously going to play a part in that. I think they should have a bit more training in, not just recognizing the side-effects, but actually establishing a system to monitor them.

Reconciling these eclectic paradigms of care, within a limited timetable, is a particular challenge for mental health nurse educators. Although welcome progress has been made in preparing students in psychosocial interventions, educators now need to review the biomedical components of the curriculum.

Like others (*vide supra*), we found that shared learning with adult branch students hindered lecturers' attempts to relate course material to mental health nursing. Targeting the bioscience programme towards specialist practice would overcome concerns over the absence of a mental health focus to the teaching (DoH 1995a, Gournay 1995, Barker & Ritter 1997), and large group sizes (Ferguson & Hope 1999). Teachers of the Project 2000 CFP have been asked to ensure that students are able to see the relevance of each subject to mental health nursing (ENB 1995); however, we are concerned that, within the constraints of current curricula, this may not be possible. Our data would support the introduction of separate learning in biological sciences for mental health students, possibly based around psychopharmacology.

CONCLUSION

Failure to consider the implications of the contrasting perspectives of stakeholders on the knowledge needed in practice could be detrimental to any national curriculum, and ultimately for service delivery. If the discrepancies between the needs of service users and course content identified here are generalized throughout health care professional education, much further work is required before curricula can claim to be evidence-based. If those reviewing education programmes (DoH 1999, UKCC 1999) fail to prioritize the views of service users, the information and knowledge gaps identified here will remain unfilled.

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