

ENHANCING EDUCATION AND PRACTICE

## Introducing Psychosocial and Psychiatric Concepts to First Year Medical Students Using an Integrated, Biopsychosocial Framework

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**ABSTRACT Objective:** *The main objective of the problem-based teaching unit reported in this paper was to introduce psychosocial and psychiatric concepts to first year medical students using an integrated approach.*

**Method:** *A total of 131 undergraduate students studied a case of delirium. Students were encouraged to understand the problem from a number of perspectives and approaches. In particular, the patient's view was emphasised. This was partially achieved by employing a standardised patient, who answered students' questions about what it was like to be unwell and hospitalised. Both quantitative and qualitative evaluations of the teaching project were conducted.*

**Results:** *Overall, the teaching project was well received. However, as an introduction to a complex and unfamiliar area, students were concerned that material was difficult to grasp.*

**Conclusions:** *As a foundation for future teaching in psychiatry, the case and our methods appear appropriate. However, this initial teaching should be reinforced and expanded upon in all years of the medical curriculum.*

**KEYWORDS** *Problem-based learning, standardised patients, biopsychosocial, multi-disciplinary, psychiatry.*

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## Introduction

It is widely accepted that psychiatry should be based upon an integrated biopsychosocial framework and that contributions from various disciplines are necessary in order to achieve this (Beigel, 1995; Holmes, 2000; Olds & Cooper, 1997). Although lip service is frequently paid to such a model (Abraham *et al.*, 1992), it is not often achieved either in teaching or clinical practice (Holmes, 2000).

It is also generally agreed that psychiatry and broader psychosocial issues should be a major part of the medical curriculum. Walton and Gelder (1999) justified this on the grounds that all medical practice involves the unity of body and mind. Skills of communication and the assessment of mental state are central, and psychiatric problems are common in all areas of medicine. In addition, Price *et al.* (2000) argue that in the education of future medical practitioners, a greater appreciation of basic neurosciences and how these concepts apply to the practice of clinical medicine will be essential.

In this paper we describe a first year medicine teaching project, where psychiatric and psychosocial concepts were introduced to students via a problem-based learning case, which emphasises the reciprocal interaction between the nervous system and the environment. The teaching project is unusual in that the case was written to ensure that biological, psychological and social aspects were integrated. Furthermore, teaching sessions were delivered by clinicians and scientists from a number of disciplines and areas of expertise, to encourage an appreciation of multidisciplinary approaches. Additionally, this teaching project represents a departure from the University of Adelaide's Medical School's previous curriculum, in that psychiatry (as distinct from the behavioural sciences) was introduced in first year.

Spencer *et al.* (2000) have lamented that patients are used as passive material rather than an active vehicle for teaching using interactive methods. One aim of this teaching project was to use a realistic standardised patient to represent the case, with whom the students could interact and direct questions, so as to consider mental illness and its treatment from the patient's perspective.

## Method

### *Setting*

The University of Adelaide Medical School provides an undergraduate medical course. Thus, almost all students are young school leavers around 17 years of age who have not undertaken any previous tertiary study. In 2000, 131 students were enrolled in first year medicine; 76 were female (58%), 55 were male (42%).

In 2000 the Medical School introduced a problem-based curriculum. Previously, the curriculum had been largely traditional and didactic in its

delivery. The 2000 curriculum is structured around patient cases, written by clinical and academic teaching staff, with input from medical educationalists. For most of the 14 cases presented in first year, students attend four small group tutorial sessions over two weeks. These tutorials are lead by a non-expert facilitator. One of the main objectives of the curriculum is to present material to students in an integrated way. Thus, related case activities that are tailored to the case in question support the problem-based learning tutorials. These include resource sessions (which are usually practical in nature), lectures, medical, personal and professional development classes (focusing on communication skills, health informatics and ethics) and clinical skills classes (which deal with history taking and physical examination). In this way, the medical school does not follow a “purist” problem-based learning curriculum, but instead uses a hybrid method of teaching.

Over the six years of the medical degree, cases build upon each other, with themes being revisited and becoming progressively more complex. This “spiral” structure is in accordance with problem-based learning philosophy (Harden *et al.*, 1997).

### *Teaching Project*

This case was written by a psychiatrist with expertise in neuropsychiatry (the second author) and a psychologist with expertise in medical education (the first author). We were thus well placed to provide a multidisciplinary, integrated biopsychosocial framework.

The case was based on an 18-year-old female, “Anne-Lise”, who had been seen by the second author. She had been experiencing considerable stress at home with regard to her family and her impending university examinations. She had ingested an expired herbal alternative sleeping medicine, as she was sleep deprived. This provoked an acute confusional state and she was taken to an Emergency Department, where her level of agitation exacerbated. The patient was sedated and detained under the Mental Health Act of South Australia. She was then transferred to a closed ward of a stand-alone psychiatric hospital, where she required further sedation. Over the next three days she recovered, and after review was discharged.

The overall aim of the case was to introduce students to the integrative and interactive workings of the human nervous system. In particular, students were expected to learn about the importance of psychosocial stressors on the individual and the need for management of those stressors; be able to describe acute confusional states and the behavioural manifestations associated with such states; appreciate the importance of history taking skills; consider illness and hospitalisation from the patient’s perspective; and gain an appreciation of the management decisions involved, with particular reference to ethical concerns. These aims and objectives were met through

the problem-based tutorials and the classes described below, all of which were interactive. To aid students in their learning and revision, and to alleviate any potential anxiety about this unfamiliar material, a list of “questions you should be able to answer” was provided at the conclusion of the teaching project.

The first resource session for this case was provided collaboratively, by a psychiatrist and an anatomist. The former delivered a basic introduction to the human nervous system, emphasising its interactive nature. The latter introduced the structure and function of higher brain centres, using prosected, labelled specimens. In the second resource session an introduction to formal higher function testing was presented by a neurologist, and this was followed by a practical session conducted by a psychiatrist, on how to observe and describe a mental state.

Interspersed with the problem-based learning tutorials were medical, personal and professional development sessions. Students, in small groups, supervised by a general practitioner, considered how to take a history from a confused patient, how to deal with patient and family distress, and, recognising the partial nature of a history, how to deal with this.

A psychiatrist gave a lecture on the neurobiology of acute confusion. The psychiatrist and medical ethicist then conducted a resource session, discussing the ethical implications of the case. The ethicist provided and demonstrated a model for moral decision making. Straight after this session, the students met “Anne-Lise” in a lecture theatre.

### *Standardised Patients*

Standardised patients (also referred to as patient instructors, simulated patients or programmed patients) are individuals, either with or without “real” symptoms, who are trained by medical educators to act as patients for teaching purposes.

A 19-year-old, third year drama student was contracted to portray the patient. Her training involved reading the case and meeting with the authors for discussion of what was required during the teaching session and an explanation of the case itself. At a second training session she accompanied the authors to a stand-alone psychiatric hospital, where staff treated her as if she were the actual patient. She went through the motions of admission and detention; training was thus *in vivo*. Training overall took a total of two hours. Remuneration of AU\$50 was made for training and the teaching session inclusive, in accordance with negotiated rates.

On the day of the session in which the students met with the standardised patient, she entered a lecture theatre and introduced herself as a standardised patient, stating that “Anne-Lise” was not her real name. She answered questions, directed to her by the group, who had already prepared appropriate queries in a previous one hour session. Questions and answers spanned over 45 minutes.

### *Evaluation*

Immediately after the last session with the standardised patient, students were asked to complete an anonymous, eight-item questionnaire. This questionnaire was purposely designed to evaluate the teaching related to this case, and was not a generic feedback form. The items were rated from 7 (strongly agree) to 1 (strongly disagree) with a midpoint of 4 (undecided). Students were asked to indicate whether: the case generated self-study; the lectures were relevant; the resource sessions were relevant; the amount of material involved in the case and related activities was appropriate; the content of the case related to their prior knowledge; and whether the timing of lectures and resource sessions was appropriate to the problem-based learning process. Additionally, students were asked to make open-ended comments about the best aspects of the case and related activities and finally, how the case and related activities could be improved upon.

To gain further understanding about the feedback provided by the paper and pencil evaluation, five students were interviewed. These students were a convenience sample, and were not selected to be representative of the cohort. Four females and one male gave answers to the prompt: “Can you tell me about how you found the psychiatry case? We would like to get it right and would like to hear what you thought”. These interviews were all face-to-face.

Two of the 16 problem-based learning tutorial facilitators were also interviewed. Again, they were chosen due to convenience. One male (a fourth year medical student) and one female (a mature-age PhD student) provided answers to the prompt given to the students. One interview was conducted over the telephone, the other was face-to-face.

For both students and facilitators, notes were taken during the interviews. These data were then subjected to a content analysis, by allocating comments to categories. These categories were combined, where this was deemed meaningful and appropriate, into themes.

## **Results**

Of the 131 students in the class, 114 (87%) completed an evaluation questionnaire. Means and standard deviations were calculated for ratings (Table 1).

Open-ended comments were categorised. There were 130 comments made about the best aspects of the case. By far the most praise was given to the fact that students were given the opportunity to meet with and address questions to the “patient” (N=72). One student wrote:

*“Getting to speak with Anne-Lise was both interesting and beneficial, as it allowed us to hear first hand what it is like for someone in her situation, and therefore consider this important view if we are forced to make decisions relating to a case like this.”*

**Table 1.** Quantitative evaluation questionnaire items and responses (N=114)

Item	Mean	SD
Case generated self-study	4.74	1.31
Lectures were relevant	5.18	1.28
Resource sessions were relevant	5.22	1.22
Amount of material appropriate	4.72	1.42
Content related to prior knowledge	3.62	1.54
Timing of lectures and resource sessions	5.34	1.24

Note: (1=Strongly disagree; 7=Strongly agree),

Positive comments were also made about the opportunity to consider ethical issues (N=12), the fact that the case introduced psychiatry to them (N=11), that the case was interesting (N=4) and real (N=2), and that scientific, conceptual, ethical and “non-medical” aspects were covered (N=3). Students also indicated that the case related activities were useful (N=18). Eight students commented that they appreciated the questions listed at the end of the case.

Suggestions for improvement yielded 63 comments. Eighteen requested more formal, didactic teaching about mental illness and the brain. As is common in problem-based curricula, complaints were made about lack of direction in what to learn (N=7), with not enough (N=6) or too much (N=5) information and detail given. Students were concerned that they had no prior knowledge of mental illness or the brain (N=13), and four comments indicated difficulty in relating lectures on the brain to the case. One student suggested, “*Perhaps a visit at some stage to the related facilities she was admitted at, and perhaps speaking to the family*”. The remaining six comments related to matters of administration, beyond the authors’ control.

Despite the fact that she had indicated that she was a standardised patient, comments were made about the fact that the patient was “real” (N=2): “*Should have been told the patient was real. We thought she was [going to be] an actor*” and “*It would have been nice to know beforehand that the real patient was actually talking to us*”.

Student interviews lasted for approximately two minutes. A total of 47 comments were transcribed. These could be coded into 16 categories, which were further collapsed into six themes, shown in Table 2. It should be noted that the number of times a theme was identified may be greater than the number of students interviewed because they were mentioned multiple times by the same interviewee. This also applies to Table 3 below.

Facilitator interviews also lasted for approximately two minutes. A total of 18 comments were made, which were coded into 13 categories, which represent 6 themes.

**Table 2.** Qualitative evaluation interview responses, students (N=5)

Theme	N	Example
Interesting, enjoyable case	8	<i>It was interesting, as a first year, to know something about psychiatry</i>
Unfamiliar material	12	<i>I had no experience at all in mental health, it was a big eye-opener for me.</i>
Positives about the “patient”	5	<i>It was good to talk to Anne-Lise, really good.</i>
Difficult area to understand	10	<i>Lectures on the brain were good, but we didn't know how to relate it all to the case.</i>
Lectures good	4	<i>... the lectures were good, they weren't too hard.</i>
Organisational points	8	<i>The resource sessions and lectures are much the same thing to me ... I would not distinguish between them.</i>

Note: A theme frequency may be greater than 5 because it was mentioned multiple times in one interview.

**Table 3.** Qualitative evaluation interview responses, facilitators (N=2)

Theme	N	Example
Interesting, enjoyable case	3	<i>A good case. Excellent case.</i>
Unfamiliar material	1	<i>The students were worried because it was a new area introduced close to the exams.</i>
Difficult area to understand	2	<i>It was hard for them to relate the brain to psychosocial issues.</i>
Biopsychosocial case	4	<i>They focused on psychosocial during sessions, but we covered physiological and biology as well.</i>
Disturbing for students	3	<i>The case dealt with things which were a bit disturbing, such as [the students'] reaction to mental illness.</i>
Organisational points	5	<i>It would have been better if the case was done earlier in the semester.</i>

Note: A theme frequency may be greater than 2 because it was mentioned multiple times in one interview.

## Discussion

This teaching project was an extremely useful learning activity, both for the students and for the educators. Generally speaking, the quantitative evaluation data indicate that the case was an appropriate one and pitched at a level suitable for first year students. The quantitative and qualitative evaluations show that students had minimal prior knowledge about or experience with the

brain and mental health issues. While it is hoped that this will whet their appetite to engage in further self-directed learning, rather than creating anxiety, this is yet to be determined.

The most positive feedback from students pertained to the interaction with “Anne-Lise”. Students were able to ask about the process of hospitalisation, the stigma of mental illness, privacy, relationships with family, friends and health care providers, self-image and fear of long-term illness, all from the patient’s perspective. Questions about the ethical implications of Anne-Lise’s treatment and management were a focal point of the session. Goldie (2000) has stated that such interactive, applied methods of teaching are recommended in ethics education. In contrast to the concerns expressed by Michels and Kelly (1999) that psychiatry, in its quest for medical and scientific credibility, is in danger of ignoring ethics as being too “soft”, the positive student feedback does not reinforce this. In this instance, these students viewed ethics as interesting, relevant and important, and a welcome addition to their undergraduate medical curriculum.

Students were advised that they would meet the patient portrayed in the case, but at no time prior to the actual session were they advised that the patient they were meeting was “real” or otherwise. However, as indicated from the written and face-to-face feedback, at least some students did believe the standardised patient to be the actual patient, and they saw this as one of the strengths of their learning experience. It is well documented in the literature even clinicians cannot easily distinguish real from surrogate patients (Gordon *et al.*, 1988).

Feedback from problem-based learning facilitators was also generally positive. They indicated, as the students had, that as a new, unfamiliar area, students were anxious that they learn “the right things”. That the case had a decided multidisciplinary bent and required an integrated biopsychosocial understanding compounded the difficulty of the case. Nevertheless, as the beginning of the psychiatry “spiral”, the initial concepts and skills learned from this case can serve as foundations for planned second to sixth year cases. Currently under construction for the second year curriculum are cases involving a young man with suicidal ideation, and a young woman with an eating disorder.

The qualitative feedback gathered for the evaluation of this teaching project used a small, convenience sample. While this is not methodologically problematic, in future perhaps a larger sample of students and tutors could be interviewed, for more comprehensive data to be obtained. With regards future quantitative research, pre- and post-evaluations could be conducted, which not only use purpose written questionnaires, but also standardised instruments that assess attitudes toward mental illness and psychiatry (Singh *et al.*, 1998).

On reflection, there are aspects of this teaching project that could be done differently, and could be incorporated into other cases as well. These include a

greater emphasis upon the cultural aspects of the biopsychosocial model, allowing students to visit the hospital in which the patient was detained, and enabling students to speak with the patient's family or other relevant social supports. While the qualitative feedback was positive, it was not overwhelmingly so. This may have been due to the area being an unfamiliar one, and one which is perceived as difficult by some students. If this hypothesis is correct, then feedback for a second psychiatry case should indicate improved student confidence.

A future aim is to develop the theme of the "real" patient further, by writing a case in collaboration with an actual patient and including this person in the teaching process. The role of the patient in teaching (as opposed to assessment) is an under-utilised and under-researched area in medical education (Spencer *et al.*, 2000).

### *Conclusions*

We have introduced students to the field of psychiatry, stressed the importance of the contributions from different professionals, and insisted upon an approach to the case that encompasses not only biological but also psychosocial factors. To date, there is no evidence that teaching which incorporates biopsychosocial and multidisciplinary frameworks translates into clinical practice reflecting this (Sadler & Hulgus, 1992; Sperry, 1991). Further research is required for the influence of teaching approaches such as the one we have outlined in this paper to be clearly demonstrated. The practicalities, confounding variables and ethical considerations make such investigations particularly challenging and ambitious, but extremely valuable and necessary.

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