

PROBLEM-BASED LEARNING

Teaching Somatoform Disorders in a “Nervous System and Behaviour” Course: The Opportunities and Limitations of Problem-Based Learning

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ABSTRACT Purpose: *To determine the opportunities and limitations of problem-based learning (PBL) in psychosomatic medicine, especially in the field of somatoform disorders.*

Method: *A written case of conversion neurosis of a 22-year-old subway worker, who had been suffering from dizziness for the past 18 months, was presented to students as one of seven cases during a “Nervous System and Behaviour” course.*

Results: *Tutors and students are normally accustomed to focusing on organic lesions such as aetiologies for neuro-psychiatric disorders. Understanding behavioural and pseudo-neurological symptomatology without brain damage, accepting emotional and biographical factors and referring to the role of the unconscious seems to be a great challenge for tutors and students alike.*

Discussion: *Studying the case of a somatoform syndrome in a PBL tutorial may teach the students skills in taking the psychosocial history into account and deepen their knowledge of neuro-psychiatric differential diagnosis.*

KEYWORDS *Problem-based learning, psychosomatic medicine, somatoform disorder.*

Introduction

The effectiveness of problem-based learning (PBL) curricula may be evaluated by measuring knowledge, clinical reasoning and diagnostic ability or student and tutor satisfaction (Colliver, 2000; Norman & Schmidt, 2000). Both the

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theoretical basis and the empirical evidence of the effectiveness of PBL are still controversial issues (Albanese, 2000; Colliver, 2000).

As far as somatoform disorders are concerned, educational programmes should nurture a spirit of critical inquiry and personal awareness. They should foster the toleration of uncertainty and complexity within the field of mental health (Dowrick, 2000). Clinical cases for PBL should capture the importance of patient encounters, connecting this narrative power and the quest for understanding fundamental mechanisms (Glick & Armstrong, 1996). The fundamental biomedical mechanisms consist of lesional, metabolic, toxic or micro-electric disorders and can be described in neuro-anatomically and patho-physiologically defined models. However, psychosomatic teaching should incorporate biopsychosocial and multidisciplinary frameworks (Chur-Hansen & Koopowitz, 2002).

Neurotic conversion and other somatoform pathologies, such as somatization disorder (chronic somatoform pain syndrome), require both a solid neurological examination and an adapted positive diagnosis, which is more than a “diagnosis by exclusion” (Crimlisk & Ron, 1999). Case histories, bedside teaching and tutorial work should refer to fundamental mechanisms, which are therapeutically productive, such as the behavioural (learning-theory oriented), the systemic (family oriented) and the psychodynamic (psychoanalytically oriented) approaches.

The purpose of the present article is to attempt to clarify whether problem-based learning helps medical students to understand psychopathology and to solve problems of patients in the realm of psychosomatic medicine. Using the case of a somatoform disorder, the following question is addressed: “What can be learnt from this example regarding the chances and opportunities of problem-based learning in the specific context of psychosomatic medicine?”

Methods

Specific Goals and Methods of Psychosomatic PBL Teaching

PBL teaching of psychosomatics basically aims at the integration of the medical/biological, behavioural, socio-cultural and psychodynamic approaches. With the assistance of their tutors, students have to ask: “What is the problem?” and to organize information and concept, which they will need in dealing with a “real” patient situation.

When students ask: “What is the problem?”, they are invited to perceive the psychosocial circumstances of a somatoform disorder and to allow for the possibility that those circumstances may be even more important than the “hard core” facts generated by high-tech diagnostic examination machines. The riddle of differential diagnosis and the progressive disclosure of aetiology are simply aspects of the teaching process. The biographical context of a functional disorder and its clinical outcome may be more important.

As in other PBL courses, students read and discuss the proposed case histories step-by-step. Results and questions can be written on a classroom flip-chart and re-discussed after the student has worked through the topic again and consulted other sources, including personal work, books, the internet and other information resources. The following steps are necessary: clarification of unknown terms, recognition/extraction of symptoms, the patient's personal history, definition of the problem or the problems, formulation and examination of hypotheses and the consideration of existing explanation models. This last important step consists of the identification of bio-medical, behavioural, socio-cultural and psychodynamic approaches, which should be integrated into a total picture (West & West, 1987).

The specific goals of PBL in psychosomatics are the following:

- Imparting information about psychogenic disorders.
- Stimulating interest and promoting awareness of the “subjectivity” factor in somatoform disorders and in general medicine.
- Encouraging a wider understanding of the patient's family and professional/relational situation (taking a psychosocial history).
- Extracting useful medical information from the patient's illness narrative.
- Description of symptoms and symptomatologic diagnosis.
- Broad neuro-scientific and biological differential diagnosis.
- Making a diagnosis of somatoform disorder in terms of psychodynamic and behavioural models.
- Discussing how to refer a patient to a specialist.
- Discussing the indications and basic approaches of psychotherapy.

Teaching Example: The Dizziness Case

Mr G. is a 22-year-old neurological outpatient, who has been suffering from dizziness attacks for the last 18 months. He works as a subway worker in the Munich regional railway system and still lives with his parents and his younger brother in a small village. Following one and a half years of unsatisfactory symptomatic treatment and some months of extensive neurological examinations, Mr G. was referred to our psychosomatic department, where the diagnosis of a conversion neurosis (ICD-10: dissociative disorder; F44.88; H82; R42) was established, and a successful behavioural psychotherapeutic treatment initiated.

The tutor-guide accompanying this case presents both symptom-orientated goals (broad neuro-otological and somatoform differential diagnosis) and relevant psychotherapeutic goals. The case is not brought to a close with a “negative neurological diagnosis” but goes on to treatment issues for the patient's benefit. In order to observe the patient's presentation during the clinical psychosomatic interview, audio files of this interview are available in the University Intranet. The general plan of this case is presented in Table 1.

Table 1. The dizziness case—an overview

Tutorial 1

Mr G's family and professional background, personality traits

Dizziness: pseudo-neurological symptomatology

examination and treatment by GP, decision to send him to the University clinic.

Home: Students revise differential diagnosis of vertigo.

Tutorial 2

Encounter with the neurologist

Physical neurological examination and complementary examinations

Diagnostic steps and letter to G.P. and psychosomatics specialist

Role play: explaining to Mr G. that a psychosomatic interview is necessary.

Home: Students listen to the interview with Mr. G. in an intranet audiotape.

Tutorial 3

Encounter with the psychosomatics specialist

Psychodynamic and behavioural analysis of the symptom "dizziness"

Consequences of the diagnosis "conversion neurosis"

Psychotherapeutic options.

Evaluation

Evaluation has been carried out in co-operation with the Chair of Education and Educational Psychology (University of Munich). We used qualitative interviews and field observations. Additionally, tutors answered the following questions:

1. Is the case suitable for the tutorial?
2. Did it ask too much of the students?
3. Were the students well informed?
4. Were you satisfied with the distribution of clinical themes throughout the case?
5. Did you feel well prepared for this case?
6. Did this case demand a great deal of tutor's activity?
7. Could the students extract a lot of information?

The horizontal six-point Likert Scales used for the tutors' ratings have anchors at the left extremity (0 = "I do not agree at all") and at the right extremity (5 = "I fully agree").

Results

The reactions of the tutorial group directed by the author and ratings of 21 (of 26) tutors give an impression of the dizziness case's peculiar characteristic, when compared to the other cases (stroke, acoustic neuroma, somatized

depression, Angelman's syndrome, amyotrophic lateral sclerosis, craniopharyngioma).

Students

Annoyance (probably due to student exam pressure) was the prevailing emotion at the beginning of tutorial work in the group accompanied by the author. Despite this fact, the tutorial group of nine students rapidly built up a constructive and relaxed working atmosphere. Everybody agreed to write problems or questions on the flip-chart or to prepare a small handout for the next session. The tutor proposed individual briefings with each member of the group in order to help everyone integrate into the group better.

Reading the first sheets of the "dizziness case", the group noticed a biographical detail of the patient's story: his hidden homosexuality. The affective reactions of the students (laughter, irony, devaluation, put-downs and pseudo-tolerant rationalization) played such a large role, that differential diagnosis and problem definition became rather difficult. The majority of the group was quite reluctant to gather information about somatoform disorders in general and psychogenic dizziness in particular. Only one student had listened to the audio interview with the patient, which was available on the University Intranet, and was thereby able to contribute elements of psychodynamic understanding, such as unconscious conflicts, the significance of the patient's situation at the onset of disease in chronological correlation with possible psychodynamic factors. This information helped the group to finish the case discussion in a more objective manner.

Tutors

Figure 1 shows the tutors' general case observation. The stroke case obtains the best rating for "suitable for the tutorial". The dizziness case ranges in the lower third, close to Angelman's syndrome. Many tutors felt that the dizziness case "asked too much" of the students. They felt rather badly prepared for it (Figure 2) in spite of a tutor-guide, which presented goals, differential diagnoses and theoretical models based on the psychodynamic and the behavioural approaches. Obviously, these data reflect that the tutors (specialized in neurology, neurophysiology, psychiatry or other clinical or theoretical disciplines) lacked adaptive psychosomatic training. The tutors were relatively active during tutorials with a rating of 29.3, (range 30.0 [Angelman's syndrome] to 13.1 [stroke]). As far as the learning success is concerned, the case obtained a mean score of 38 in the item "extraction of patient information", close to the stroke case (39, results not shown). The tutor's open comments reflect the importance of the students' emotional reactions to the case already mentioned, such as: "shaky laughter", irony towards homosexuality and uncertainty as far as the seriousness of the patient's problems was concerned. Some tutors formulated doubts or surprise about the diagnosis of somatoform disorder.

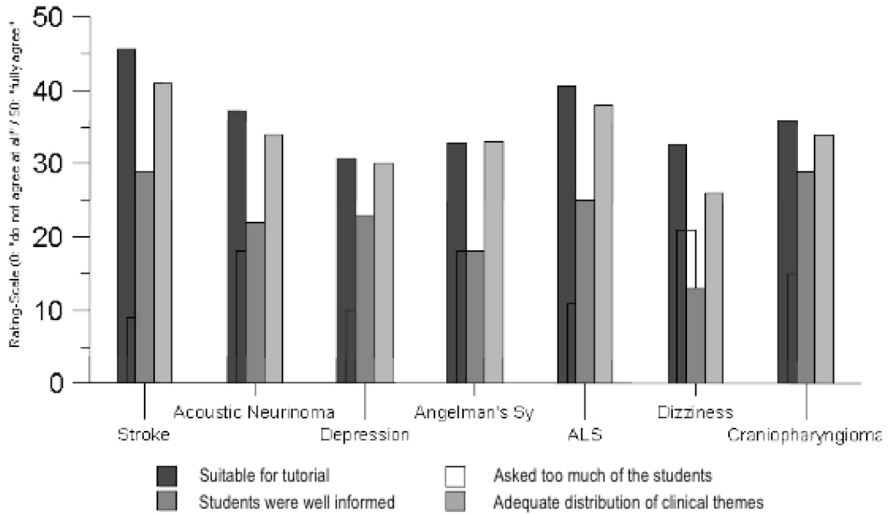


Figure 1. Tutor's evaluation of cases (N=21).

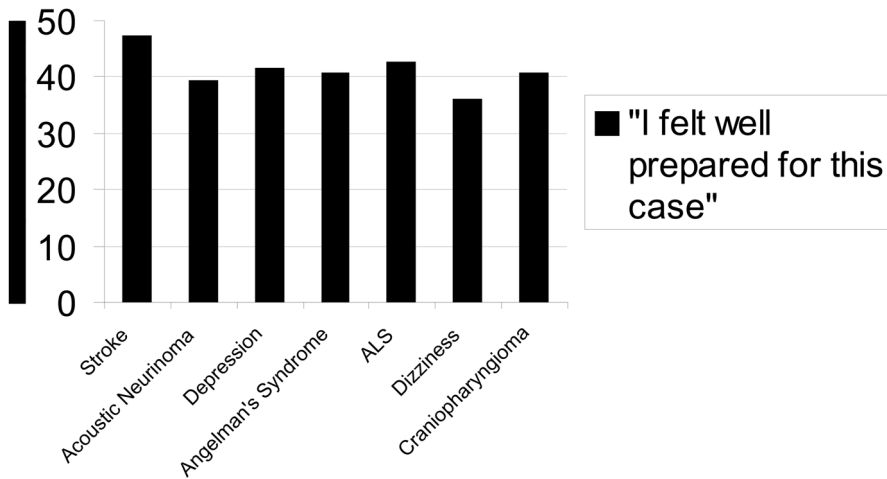


Figure 2. Tutor's preparation (N=22).

Others expressed the desire to be better prepared for the specific theoretical framework necessary for understanding the case.

Discussion

Although the teaching experience presented in this article does not allow us to draw conclusions about the long-term effect of the described intervention, the

results suggest some answers to questions raised in the introduction part: (1) A psychosomatic PBL-case can be implemented in the frame of a nervous-system course. (2) There are specific difficulties and challenges as far as teachers' and students' preparation are concerned.

PBL curricula are already integrated in psychosocial education of various medical faculties (Peters *et al.*, 2000; Brennan *et al.*, 2001; Köllner *et al.*, 2003). PBL is ranked highly by participating students (Yates & Gerdes, 1996; Köllner *et al.*, 2003). These very positive experiences seem to be due to a successful integration of psychosomatic medicine into other disciplines. With respect to the danger that specific psychosomatic topics disappear when taught in other domains (Waldstein *et al.*, 2001), our experience tells us that the transition from hybrid models (Doig & Werner, 2001; Sundblad *et al.*, 2002) to reform models offers particular opportunities for the psychosocial disciplines (Frick, 2002).

Furthermore, PBL curricula develop the interest in psychosocial specialities even when proposed to those students with little previous knowledge in this domain (Peters *et al.*, 2000; Brennan *et al.*, 2001; Jünger & Köllner, 2003; Köllner *et al.*, 2003). Additionally, previous authors argued that integrative psychosomatics will change our vision of medical education (Burger, 2001; Köhle *et al.*, 2003). In other words, provided a biopsychosocial approach can be integrated into medical education, psychosomatics will broaden the horizon of future doctors and help them to perceive the patient in his/her biographical context.

The PBL curricula aim to help students create semantic networks by proposing a learning environment similar to clinical reality. This is true as far as the cognitive and the emotional dimensions are concerned (ten Cate, 2000). PBL "prepares for uncertainty" by acknowledging what is theoretically and clinically certain and what can help to recognize patterns or explain aetiology. The specific challenge in the "dizziness" case is due to the difficulty in semantic networking. It is not clinical uncertainty, which is the problem, but rather missing basics, theoretical models and sufficient tutor instruction. The case requires a personal paradigm shift from the lesional, neuro-scientific aetiological models to theories, which can include conversion, the impact of the unconscious, secondary gains from an illness, conditioning, stimulus and reaction and the social consequences. A personal paradigm shift needs to occur for the student or the physician when confronted with the mental health realm, because traditional medical knowledge and skills may be swamped by this area. More than other clinical disciplines, the field of psychopathology calls for the acquisition of knowledge and an assessment of future doctors' attitudes towards the mentally-ill person (Roth *et al.*, 2000), e.g. through feedback provided by the teachers or by supervision and peer-group-discussion of clinical interviews.

Learning Opportunities of the Dizziness Case

What can be learnt from the students' and tutors' feedback and from some of the practical problems presented by the dizziness case? There may be a polarity

between “pacemakers”—excellent students with quite a lot of objective knowledge and clinical skills—and more “silent” students. Pacemakers may show reactions of impatience and irony when psychosocial issues are discussed. Such conflicts in the PBL tutorial group can be compared with similar processes in psychotherapy (Huey, 2001). Homosexuality is a detail of this case, which was not an object of diagnosis. It is a part of the psychosocial history (Brennan *et al.*, 2001) and psycho-dynamically part of the significant “cues” (disease onset situation, transition from the psychological to the somatic or, behaviouristically, the “stimuli”) of pseudo-neurological symptoms. The shame and silence, provoked by the emotional context of homosexuality, have a certain impact on the patient’s experience of adolescence. In actual fact, homosexuality is not the “cause” of feeling dizzy, giddy and sick all the time. Psycho-dynamically speaking however, hiding his desire for autonomy (and the actual possibility of a gay “coming-out” as one realization of this autonomy) is symbolized by the dizziness.

The German word for vertigo and dizziness (“Schwindel”) has an added meaning (English “swindle”, to deceive). The principle of PBL cases is progressive disclosure. The swindle, symbolized by dizziness, becomes clear during the tutorial through the case narrative itself, group discussions, emotional reactions and listening to the patient on the University Intranet. This disclosure (the reversal of the patient’s “swindle”) can provoke different reactions among students, such as impatience, irony, aversion and the feeling that the patient and case author are lying.

There are various advantages of PBL-teaching in psychosomatic medicine when compared with the usual process of facilitation. By attempting a tolerant discussion in a situation of personal and small-group encounters, PBL can offer better conditions for the modification of attitudes towards patients, who present disorders without organic aetiology. Educating students about psychosomatic illness can contribute to the integration of psychosocial and humanistic concepts with bio-medical principles in patient care (Peters *et al.*, 2000; Brennan *et al.*, 2001; Waldstein *et al.*, 2001). Practically speaking, it fosters interviewing skills, e.g. by role-playing approaches, and introduces a biopsychosocial horizon into the student’s practice of taking a clinical history.

Conclusion

The example of problem-based case discussion presented in this article helps to consider new possibilities for integrating the psychosocial dimension in medical education. Tutors and students need some clear tools for accessing theoretical models (e.g. psychodynamics or behaviourism). Further studies should investigate the link between classical neuro-scientific reasoning and understanding biopsychosocial pathways.

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