Innovative methods in teaching psychiatry to medical students

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ABSTRACT – Background and Objectives: To test the conjecture that the innovative method to teach psychosomatic psychiatry previously reported will be confirmed as beneficial in the training of medical students in the field of general psychiatry.

Methods: The emphasis in this course is placed on the discussion of clinical cases, bedside clinical teaching, and a research-oriented part. The “Innovative Teaching Plan” (ITP) is intended to train student-leaders to guide small groups (SG) of students. The results of an intensive clerkship on bedside teaching are also studied. Trainee performance was assessed by the marks in the final examination, and a reliable and valid tool, the Medical Teaching Quality Questionnaire (MTQQ) was used to document trainee satisfaction. The results of five academic courses are presented in this report.

Results: External experts consulted assured that the content of the course was adequate. Eight hundred and thirty eight medical students have completed the learning course in the study period, and 418 (one of the two groups) completed the evaluation with the MTQQ.

Most items related to the students’ satisfaction were rated “high” or “very high”, including the items asking about the usefulness of the course for physicians, the quality of the teaching methods and the bedside teaching. In relation to innovation, the discussion of
临床病例在小组中非常满意，而“研究者的思维增强”被1/3的学生认为是“高”或“非常高”。年审的实用性得到支持，结果显示，在采用改进方法后，初始评价中未得到满意评价的项目得到了显著改善。结论：在一般精神医学课程中取得了良好的成绩和学生满意度。可以借鉴这些有效的方法来教授和学习这个科目。

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引言

精神医学是一个重要的学科，在标准的心理学教育中被列为医学教师培训内容。1

另外一些先前的研究报道了提高医疗毕业生在心理社会医学方面技能的需求2。在这一背景下，新兴的新型教学方法的使用得到了利益。例如，一些作者已经建议将团队学习整合到精神医学的实习中3。其他作者则使用了一个新颖的医学学生的同辈学习活动，包括一个专科精神科医生-全科医生的信件交换，以增强学生对这一学科的复杂性的理解4。另一方面，一些研究强调了解决方法在这一背景中的重要性5。

研究的重要性不可被低估，因为它有助于确定需要采取补救措施的问题。一项系统性研究发现，学生对精神医学的总体态度被认为是积极的，而作为职业选择的精神医学则被负面评价，被许多学生认为不受欢迎6。然而，研究也表明，精神医学的态度可以改变。例如，也有些证据表明，精神病学课程可以改变临床医生的行为，从而使课程对他们职业生涯有益7。

我们认为，学生对精神医学的态度的改善可能依赖于精神医学课程和创新教学策略的开发。尽管国际文献已经探讨了精神医学的教学，但标准化评估方法的使用并不多见。文献提供了多种教育方法来培训医学学生的，但这些文献的质量参差不齐，因此对于发展课程和制定教育政策的指导不一致8。

我们之前报告了在萨拉戈萨大学医学院使用创新方法教授心理和联系精神医学，发现教学效果和使用标准化、原创方法对学生满意度的测量都很好。在小群讨论临床病例也很有效，而“研究者的思维增强”被1/3的学生认为是“高”或“非常高”。年审的实用性得到支持，结果显示，在采用改进方法后，初始评价中未得到满意评价的项目得到了显著改善。结论：在一般精神医学课程中取得了良好的成绩和学生满意度。可以借鉴这些有效的方法来教授和学习这个科目。

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tive. In this background, the objective of this study is to try to test the conjecture that this same method will be confirmed as beneficial in the training of medical students in the field of general psychiatry both, for curriculum results and for students’ satisfaction.

Methods

The content of this course on psychiatry for medical students has been considered to be adequate by external experts consulted. The course has a theoretical part, for lecture-oriented sessions; a seminar part, to potentiate active participation and learning in small groups (SG); a practical, bed-side clinical teaching; and a research-oriented part. The contents of the theoretical, lecture-oriented part follows standard material in textbooks, such as the one we now recommend. The teaching methodology of the full academic year course is summarized in table 1.

A crucial innovation in the last years was the introduction of the “Innovative Teaching Plan” for students (ITP) (http://www.unizar.es/innovacion/convocatorias2010/index.php), intended to educate student-leaders to stimulate between-students interaction and participation. Over the last academic courses, a requirement for each SG was to design an original research project, led by the trained ITP.

Special consideration in the course had the bedside teaching. While the staff resources are limited for the number of students assigned each year and the heavy clinical responsibilities of clinicians, the Department managed itself to provide a 4-week period of bedside, practical supervised work for the students. Table 2 summarizes the main characteristics of this bedside teaching.

A central coordination for the program has been organized, under the responsibility of a motivated, clinical professor. Then, a teaching improvement plan was designed which includes characteristics such as an active supervision by tutors, with the students having online access; systematic meetings with students; specific supervision in taking the psychiatric history and one-to-one supervision by clinical professors throughout the clerkship.

Trainee performance has been assessed by the marks in the final examination, and the Medical Teaching Quality Questionnaire (MTQQ) was used to document trainee satisfaction. We originally developed the MTQQ

Table 1
Teaching methodology in the psychiatry courses.

- One full academic course per year, 9 UZ credits; 6.4 ECTS credits
- Two hours/week for classes/seminars
- 50% lectures/50% clinical cases seminars
- “Innovative Teaching Plan” for students (I.T.P.)
- Weekly session with I.T.P. student leaders
- “Small Groups” (SG) (n = 4 students) with I.T.P. leader in seminars
- One research project by SG and I.T.P. leader.
to capture the student’s perception of salient aspects of teaching practices. It contains five-point, Likert-type items related to the subject matter; to the teaching method; and to the actual stimulation of research interest. Performance of teachers is also assessed, and a global satisfaction item is accessible to capture to what extent the course meets the student’s expectations. The questionnaire also invites the student to answer open questions about “the two most positive” and “the two most negative” aspects of the course. Reliability of the MTQQ was considered to be “good to excellent” (Cronbach’s alfa coefficient was 0.865; and test-retest kappa W was 0.655 (I.C. 99% 0.562-0.748); and construct validity was also supported11.

Table 2
Bedside teaching of psychiatry: the philosophy.
– Central coordination by motivated, clinical professor
– Teaching improvement plan
  + Tutor and personalized supervision (and online access)
  + Systematic meetings with students
  + Annual dossier by coordinator
  + Plan to cover incidences of teachers
  + Specific supervision of psychiatric history by tutors
Operational criteria for assessment
  + One to one supervision by clinical professors throughout the clerkship
  + Voluntary, summer clinical practices for students

MTQQ items were treated separately for the statistical analysis. Scores in each item have been combined into three categories, positive results or “above average” (AA: “high” or “very high”), “average” (“middle”) and “below average”. Descriptive, summary statistics are presented as frequencies and percentages for discrete variables, and means and standard deviations for continuous variables.

Results

External psychiatric professors from different medical schools have been consulted at different points in this process. They support the idea that the content of the course, was adequate. Eight hundred and thirty eight medical students have completed the learning course in the study period, and 418 (one of the two groups) completed the evaluation with the MTQQ.
Most students (85% - 92%) took the first round of the final examination each year, and 93-95% of them passed the examination. High marks, “outstanding” marks (9.0 or more, maximum 10 points) were obtained throughout this experience by 30% – 33% of medical students, including among them 21 students with “honors”.

In relation to satisfaction, figure 1 shows that more than three quarters the students scored above average (AA: “high” or “very high”) the relevance of this subject for medical training, its usefulness for physicians or the quality of the scientific information provided, and the usefulness of the clinical cases was rated particularly high, with more than 90%

![Figure 1. Assessment by medical students of the relevance and quality of contents in five consecutive academic courses of psychiatry. Mean scores in Medical Teaching Quality Questionnaire MTQQ.](image)

scoring in those categories. Medical students considered the degree of difficulty of the subject was not particularly high, since only one third of them scored in the same categories.

In relation to the quality of the teaching methods, figure 2 shows that the technical mastery and the preparation of lectures were rated very favourably by medical students, since both items were rated “high” or “very high” (AA). “Clarity in teaching” was also rated in those categories by more than 2/3rds of students, but the study of bibliographical material was not so favourable, since only 1/4th rated “high” or “very high”.

In relation to innovative teaching methods, “enhancement of a researcher’s mind” was rated “high” or “very high” (AA) by 1/3rd of medical students, and the remainder rated “middle” (average). The usefulness of the continued evaluation, with the assessment and tests performed in the classroom, in regular teaching hours, was rated in the high categories by more than 2/3rds the medical students.

The utility of the yearly evaluation of the quality of teaching methods was tested by observing the results in items rated not very positive in the first evaluation. Figure 4 shows the results of this longitudinal assessment in
relation to the “the clarity in teaching”. It shows favorable results, since the proportion of students rating “very high” this item starts in a rather low proportion in the academic course 2007/08 (below 20%). With this information coming from the enquiries, the teachers face somehow the situation and are able to show an improvement, so that the proportion of “very high” ratings increases gradually to above 40% in the academic course 2011/12.

Similarly, the utility of the yearly evaluation of the quality of teaching methods has also been tested in relation to the approach to enhance a researcher’s mind. Figure 5 shows the results of this longitudinal assessment, also showing favorable results: the proportion...
Figure 4. Progress in positive scores of medical students in assessing the clarity in teaching. Mean scores in Medical Teaching Quality Questionnaire MTQQ.

Figure 5. Progress in positive scores of medical students in assessing the approach to enhance a researcher’s mind. Mean scores in Medical Teaching Quality Questionnaire MTQQ.
of students rating "high" or "very high" (AA) this item starts in a low number in the academic course 2007/08 (approximately 25%). Then, the teachers face somehow the situation and are able to show a gradual improvement, so that the proportion of the same ratings goes up to 2/3rds of students in the academic course 2011/12.

The MTQQ has also been used to assess the students' satisfaction with the bedside teaching during the last academic course in the study period. All students (n = 198) in the class completed this part of the study. Most students (87%) rated "high" or "very high" (AA) this item in the questionnaire.

Among "the two most positive" aspects of the course, the students indicated most frequently the relevance of the subject and the discussion of clinical cases in small groups followed by the general discussion. Similarly, they had an exceptional, positive view of the bedside teaching.

Discussion

As most previous medical education research, this study has focused on the assessment of trainee performance and trainee satisfaction¹², frequently used sources of information entering into the academic decision-making process¹³. Our research has found support for the initial conjecture that the rather original method implemented for the training of medical students in general psychiatry is beneficial for both the final results of examinations in this subject and for the students' satisfaction.

The performance of trainees in this particular course was quite positive, since the great majority passed the first round of the final examination, and a considerable proportion was awarded high marks. These results compare favourably with other medical subjects in the same academic years (information from the medical school). The fact that most students
rated the course as “no-difficult” (2/3rds) may partially explain the positive results.

In relation to the students’ satisfaction, most items in the sections of relevance of the curriculum for a general physician; quality of the teaching methods; or specific methods such as the use of continued evaluation in the standard classes, were all rated very positively. The enhancement of the student-teacher interaction has also been rated positively in the final, open questions, and may merit special attention, since the desirability of this interaction has been supported in different studies14,15.

This report further documents that the inclusion of clinical cases in the teaching seminars was most favourably valued by the students. In fact, methods of teaching with cases are receiving increasing support16, and have been used to advance deeper learning in medical fields17. Our approach is quite similar in this respect to the valued method of problem-based learning (PBL)18. We believe this method is also quite appropriate for learning clinical reasoning, particularly when the cases are worked-out in small groups under the leadership of specially trained medical students and the maintained supervision of the professor19. Clinical reasoning is considered to be a crucial aspect of medical training20.

We have also documented in this study the positive ratings of teachers’ performance by the medical students. This may explain in part the student’s general satisfaction, since approval by students has been documented to be highly related to the teachers’ performance21. Other aspect considered to be positive in this course is the inclusion of available, voluntary summer practices in clinical work22. Moreover, we believe part of the students’ satisfaction may be related to our commitment to teach especially on the recognition and treatment of those common mental disorders that they will have to face frequently in their medical practice. This makes sense to them, obviously, and has been emphasized as one of the goals in the future of medical education23.

An important aspect in the course is certainly the bedside teaching. In relation to this, the appointment as coordinator of a highly motivated, clinical professor (RC) has been crucial to promote the plan; and to stimulate a personalized supervision. We consider the very positive rating in this section is quite remarkable, particularly because the time allotment for bedside teaching, a 4-week clerkship, is limited, and the supervisors are particularly burdened with clinical care. A special consideration in the bedside teaching was given to the improvement in the ability of students to collect psychiatric histories, an important aspect of medical training18.

The positive rating in “enhancing a researcher’s mind” merits emphasis, since innovation and research is certainly crucial in Medicine. It is quite remarkable that the students were able to produce original research protocols, with only limited training, although we have previously documented similar results in Psychosomatic Psychiatry9. As we have previously suggested, an explanation to this performance may be related to the high quality of medical students in countries such as Spain, where the acceptance in medical schools requires very high marks (http://wzar.unizar.es/servicios/acceso/admisgrado/corte/grados11-12.pdf). However, we believe it also relates to the clear message sent to trainees about the relevance of research, and the commitment to stimulate the initiative and the potential of such bright students. Research activity is not a mandatory component of medical education in Spain, and similarly in other countries, although some previous reports underlie the fact that most students are interested in research and complain of the lack of institutional incentive24.
Contrary to the positive aspects, most students rated low initially the items related to “out of classroom” (not in-person) work with bibliography material. While this type of study is valued by the teachers, particularly aiming at continuous, post-graduate education, it seems obvious that changes in this methodology had to be introduced should the objective be to make it more attractive for the students. On the bases of this observation, we modified the teaching method, with some positive results. Similarly, we show in this study that it was possible to improve the students’ satisfaction in relation to the “clarity” of lectures, by modifying the method in the following courses once we were aware of the unsatisfactory results. This observation supports the importance of this type of research, since weak aspects of the teaching method may be identified so that remedial action can be implemented.

Among the strengths of the study we include the use of a reliable and valid assessment instrument and the longitudinal design, with a five-year evaluation. We also value the innovative method introduced by training I.T.P. students as leaders in the SGs, and also in the development of the original research designs. Students’ responses to the final, open questions in the MTQQ support this interpretation.

Limitations in the study should also be addressed. First, the results in one medical school, although it is rather typical in Spain, may not be generalizable, and the methods should be implemented elsewhere before they have more general acceptance. And second, it has been shown that medical students may be only moderately consistent in the extent to which they evaluate teachers, and the inconsistency may vary by course and by teachers within the courses. However, this potential bias is minimized in this study, because different academic courses were assessed and results were consistent.

Few other subjects may be addressed, looking at the future. The teaching of specific areas of psychiatry, such as child and adolescent psychiatry, competent psychopharmacology, community psychiatry or substance abuse may need a more detailed analysis. We are particularly interested in the potential role of trainees as clinical teachers of medical students in psychiatry; and are also supportive of the need to try to homogenize the core curricula across medical schools. Finally, we are also convinced, as our teachers McHugh and Slavney, that teaching psychiatry may provide notable pleasure and lasting satisfaction.

In conclusion, the conjectures about the advantages of our method in teaching psychiatry for medical students are supported by the results presented and discussed. In view of the positive assessment of this course, this study also may draw lessons to inform medical teachers about efficient and effective ways of teaching and learning psychiatry.

Co-authors


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References


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