An introductory course in philosophy of medicine

A Rudnick

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Philosophy of medicine, narrowly defined as ontology and epistemology of medicine, is a well developed research field, yet education in this field is less well developed. The aim of this paper is to present an educational development in philosophy of medicine—an introductory course in philosophy of medicine. Central features of the course are described. Participants (medical undergraduate students) scored high on average. The conclusion is that further such educational ventures in philosophy of medicine should be developed and implemented.

school. No previous philosophical education was required or reported on the part of the students. The course reported here was conducted in the academic year 2002/3, and approximately half of the students—72 in number—were obliged to participate (the other half participated in a medical anthropology class; the allocation to one or the other of these courses was on a first come first served basis). The course was part of a broader education programme in medical humanities and behavioural sciences at the school, comprising also courses in history of medicine and medical anthropology, among others, as well as workshops in clinical communication skills, and early clinical experiences, and discussion groups.⁵

Philosophy of medicine, narrowly defined as ontology and epistemology of medicine, has in the last few decades become a scholarly field in its own right. This is manifest in research journals that are to a large extent dedicated to this field, such as the *Journal of Medicine and Philosophy* and in book series, such as the series *Philosophy and Medicine*, published by the Dordrecht based company, Reidel. Yet education in philosophy of medicine is lagging behind. There are, for instance, few acknowledged textbooks in philosophy of medicine, an honoured exception being the classic introduction by Wulff, Pedersen, and Rosenberg¹ although there are a few anthologies in this field.² If one compares philosophy of medicine—that is, ontology and epistemology of medicine—to medical ethics, the lag of education in philosophy of medicine becomes particularly conspicuous, as there are many courses in medical ethics worldwide, but far fewer in philosophy of medicine. Even in contemporary innovative programmes dedicated to the medical humanities, ontology and epistemology of medicine are less often allocated a course of their own than are medical ethics, history of medicine, literature and medicine, and other areas in medical humanities.^{3,4} Yet basic knowledge and skills in philosophy of medicine may be conducive to a reasoned, critical, and reflexive approach to medicine, which may improve medical practice. The venture described in this paper aimed to develop and implement an introductory course in philosophy of medicine dealing with ontology and epistemology of medicine (and excluding other domains of philosophy of medicine more broadly defined, such as phenomenology of medicine).

PARTICIPANTS AND SETTING

The course was established for first year undergraduate medical students at the Tel Aviv University school of medicine by the author, who is also responsible for medical ethics courses at that

COURSE FORMAT

The course consisted of seven weekly lessons, with each lesson lasting two academic hours and comprising formal lecturing, questions and answers, and exercises. The blackboard and overheads were used, and the students were expected to prepare for the lessons (excluding the first and last ones) by reading suggested philosophical writings, mostly canonical and not technical, before the lessons. These writings were then discussed when addressing the pertinent issues in the lessons. The lessons are listed in the box below, beneath the heading 'Philosophy of medicine course lessons' (in chronological order, and referring to the relevant reading material). The course focused on topics central to modern medical practice, such as the concepts of science, disease, diagnosis and treatment, as well as on methods of philosophical discussion that could be used by the students.

STUDENT ASSESSMENT AND SATISFACTION

The students were assessed on a paper in philosophy of medicine which they submitted after the end of the course. They were offered the opportunity to submit drafts up to a month before the deadline for paper submission, and to modify the draft in view of the assessor's comments if they so wished. They were assured that those resubmitting the modifications would be graded on either the draft or the final paper, according to their higher score. Assessment was divided into five sub-scores (out of a maximum total of 100 points): up to 20 points on knowledge—that is, accurate and relevant propositions; up to 20 points on critical thinking—that is, sound and balanced arguments; up to 20 points on comprehensiveness—that is, varied points of view and references; up to 20 points on organisation—that is, paper coherence and technicalities, such as orderly documentation of references, and up to 20 points on general impression.

Correspondence to:
Dr A Rudnick, Department
of Behavioral Sciences, Tel
Aviv University School of
Medicine, Tel Aviv 69978,
Israel; harudnick@hotmail.
com

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Philosophy of medicine course lessons

1. Introduction to general philosophy:

- Philosophy's goals—for example, positing world-views, clarifying concepts, reflecting critically, raising problems.
- Philosophy's domains—for example, ontology, epistemology, ethics, aesthetics.
- Philosophy's problems—for example, induction, causality, reduction, free will.
- Philosophy's methods—for example, logical analysis, dialectics, thought experiments, analogies, counter-examples.
- Philosophy's theories—for example, realism v idealism, rationalism v empiricism, scepticism, critical rationalism.
- Exercise (discovery of given informal logical fallacies in a set of fallacious arguments).

2. The conceptual relation between medicine and science⁶:

- Characterisations of science—for example, positivism, constructivism, fallibilism.
- Characterisations of technology and craft/art—for example, goals, methods, products.
- The standing of medicine—for example, science, technology or craft/art.
- Exercise (a dialectical discussion of the epistemological standing of alternative/complementary medicine).

3. The conceptual distinction between disease and health⁷:

- Disease/health as discovery or as convention—for example, naturalism, normativism.
- Disease/health as referring to parts or to whole—for example, mechanism, holism, systemism.
- Disease/health as a state or as a process—for example, common states, ideal states, self organisation processes.
- Disease/health as opposites or as mutually independent—for example, the biostatistical approach, the action/theoretical approach.
- Related distinctions—for example, the distinction between disease, illness, and disability, the distinction between health and normality, the distinction between life and death.
- Exercise (a scrutiny of the ontological standing of addiction as compared to disease, primarily by means of counterexamples).

4. Philosophical issues in medical diagnosis⁸:

- Classification systems in nosology—for example, diagnosis according to categories or to dimensions, diagnosis according to cause, to presentation or to disease course.
- Distinction between diagnostic components—for example, symptom v sign, syndrome v disease, aetiology v risk factor, pathogenesis v pathophysiology.

- Approaches to differential diagnosis—for example, Venn diagrams, eliminative induction, Bayes's theorem, distinction between the null diagnosis and the unrecognised diagnosis, the therapeutic trial.
- Exercise (thought experiment on malingering as disease/illness).

5. Philosophical issues in medical treatment⁹:

- Goals of treatment—for example, cure v recovery, therapy v rehabilitation v prevention.
- Means of treatment—for example, differential treatment, null treatment, placebo.
- Frameworks of treatment—for example, the biosychosocial model, systems theory, the agent/host/environment scheme, the individuality of organisms.
- Exercise (analogy between treatment of infectious diseases and treatment of genetic diseases, primarily using the agent/host/environment scheme).

6. Philosophical issues in medical research¹⁰:

- Scientific method—for example, epistemology v methodology, context of justification v context of discovery, basic research v clinical research, quantitative research v qualitative research, centrality of comparisons in experimental and non-experimental research.
- Causality—for example, relation v influence, Mill's tenets and Koch's postulates, homology v analogy.
- Theoretical background—for example, facts v theories v methods, the theorems that theories are underdetermined by facts and that facts are theory laden, fishing v exploration v theory guided research, theories v hypotheses, the Duhem-Quine thesis and auxiliary hypotheses, and assumptions and background theories.
- Exercise (applying Koch's postulates to non-infectious—genetic—diseases).

7. Writing philosophy papers:

- Approaches to writing philosophy papers—for example, reviews, a problem oriented dialectical/critical approach.
- Exercise (writing an abstract of a paper in philosophy of medicine using a problem oriented dialectical/critical approach).

Of the 72 students, 69 students submitted drafts and/or final papers (the three students who did not submit did not provide reasons for this). Of these, 25 students submitted only drafts, with a mean score of 86 and a standard deviation of nine; 19 students submitted only final papers, with a mean score of 86 and a standard deviation of six; and 25 students resubmitted modified drafts, with a mean score of 89 and a standard deviation of six. According to a statistical analysis using ANOVA and matched t-tests and assuming a significance level of $\alpha = 0.05$, there were no significant differences between the scores of these three groups of students, and the group of students who resubmitted modified drafts improved their scores significantly after resubmission and demonstrated more variability (with a draft mean score of 72 and a draft standard deviation of 16). The mean score of all the 69 students was 87, and their standard deviation was seven.

General satisfaction concerning the course among the students was measured on a scale of one to four (where four represents most satisfied). Fifty two of the 72 students expressed an opinion. The mean score was 2.3. When students expressed additional comments they mostly commented that the course was too short and too abstract. General satisfaction of the lecturer concerning the course was measured using a similar scale, with a score of three.

DISCUSSION AND CONCLUSION

The course was condensed, covering many topics in philosophy of medicine in a relatively short time for students who do not have an educational background in philosophy. This, as well as the common preference of medical students for sciences rather than humanities, may explain the somewhat low student satisfaction with the course. Still, the scores of the students were in the high range for their submitted papers. This implies that such an introductory course can teach medical students philosophy of medicine effectively. The students who submitted only drafts scored similarly to those who submitted only final papers. The students who submitted modified drafts first scored lower than others (on their initial drafts), but on their modified drafts they improved their scores so that they were comparable to those of the other students. It seems then that a subgroup of students, roughly a third or so, may need the opportunity to modify their drafts according to assessor comments in order to increase the quality of their philosophical work.

The introductory course in philosophy of medicine presented here is an innovation in medical humanities education for medical students. Modifications of the course format may consist of increasing the hours and the length of the course so that students have more time during the course to read and discuss the material learned and to study many illustrative examples, as well as additional topics such as

phenomenology of medicine—which may be conducive to teaching experiential aspects of patient care. Alternatively, the format could be modified to that of a seminar with fewer students in each class so that each student has the opportunity for more individualised learning contact with the lecturer and with the other students. Alternatively the course or seminar could be fully elective so that only students who are interested in this field participate and student satisfaction increases (as may lecturer satisfaction); admittedly, an obligatory course might result in more students acquiring basic philosophical knowledge and skills, which may be important for a sound approach to medicine. Whatever the format, educational ventures in philosophy of medicine should be further developed and implemented.

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