

THE CONCEPT OF DISEASE: ITS EVOLUTION IN MEDICAL STUDENTS

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Abstract—First, third and fifth year medical students were asked to say to what extent they considered each of 38 conditions to be a disease, to be treatable, to be serious, to be the fault of the patient and to be external in cause. Fifth year students were significantly more inclusive in their use of the term disease, applying it to far more conditions, with third year students midway between the first and fifth year students. The use of the term disease did not relate to any great extent with its treatability, seriousness, blame or externality.

The concept of disease, despite the difficulty of a consistent, formal philosophical definition, is heuristically useful, and is applied readily by medical students, evolving as students progress through medical school, in a way that cannot be explained in relation to other perceptions of the conditions.

Key words—medical students, disease concept, disease perceptions

INTRODUCTION

Despite its apparent importance to the practice of medicine, there is little consensus about a precise definition of the term 'disease' [1]. The innovative empirical research of Campbell *et al.* [2], who asked medical and lay subjects to classify such conditions as malaria, tuberculosis, hangover and drowning as disease or not-disease, showed large differences in the use of the term. Adapting a concept derived from mediaeval scholasticism [3], they argued that the lay public were *essentialist*, with a quasi-metaphysical notion of diseases as well-defined entities caused by specific agents. In contrast doctors were described as using the word disease to indicate an aggregate of abnormal, biological phenomena without implying specific theories of aetiology. Scadding sought to formalise this distinction in his much criticised *nominalist* definition of disease, which links the term to the idea of biological disadvantage [4], construed in the practical sense of seriousness and treatability [1], or more broadly to diagnosability and socio-cultural significance.

In this cross-sectional study we examine how the concept of disease evolves in students at medical school.

METHOD

First, third and final year medical students at the Guy's campus of the United Medical and Dental Schools ($N = 76, 61$ and 62 respectively; overall response rate = 62%) completed a questionnaire adapted from Campbell *et al.* [2] in which they indicated on a four-point scale, for each of 38 conditions, whether or not they thought it was a disease (D), and whether it was treatable (T), serious (S), the fault of the patient (F), or external in cause (E).

RESULTS

Figure 1 shows that students in later years were generally more likely to regard conditions as diseases; thus 18% of first year, 58% of third year and 82% of final year students thought that 'gallstones' was definitely a disease (chi-square = 55.6, 2 *df*, $P < 0.001$). Analysis of summary statistics, using logistic regression to calculate an individual threshold and discrimination parameter for each student, showed not only that students in the final year had a lower threshold for calling conditions a disease [$F(2,194) = 37.0$, $P < 0.001$], with third year students mid-way between first and final year students, but that final year students also had a somewhat higher discrimination, being more definite in their differentiation between disease and non-disease [$F(2,194) = 3.04$, $P < 0.05$] (i.e. the slopes of individual curves analogous to those in Fig. 1 become steeper).

Ratings of T, S, F and E showed few differences between the years; thus 95, 84 and 84% of first, third and fifth year students thought that gallstones were definitely treatable, 28, 30 and 16% thought they were definitely serious, 47, 49 and 44% thought they were definitely not the fault of the patient, and 17, 15 and 3% thought the cause was definitely external to the patient. T, S, F and E showed only small correlations with disease status ($r = 0.03, 0.26, -0.26 -0.12$ respectively), with minimal differences between the 3 years.

DISCUSSION

The concept of 'disease', like many natural categories [5], such as 'red', 'tree' or 'fish', is heuristically useful, despite being logically fuzzy and indistinct. Medical students use the concept readily and here we have shown that its usage evolves as they pass through medical school, becoming both more inclu-

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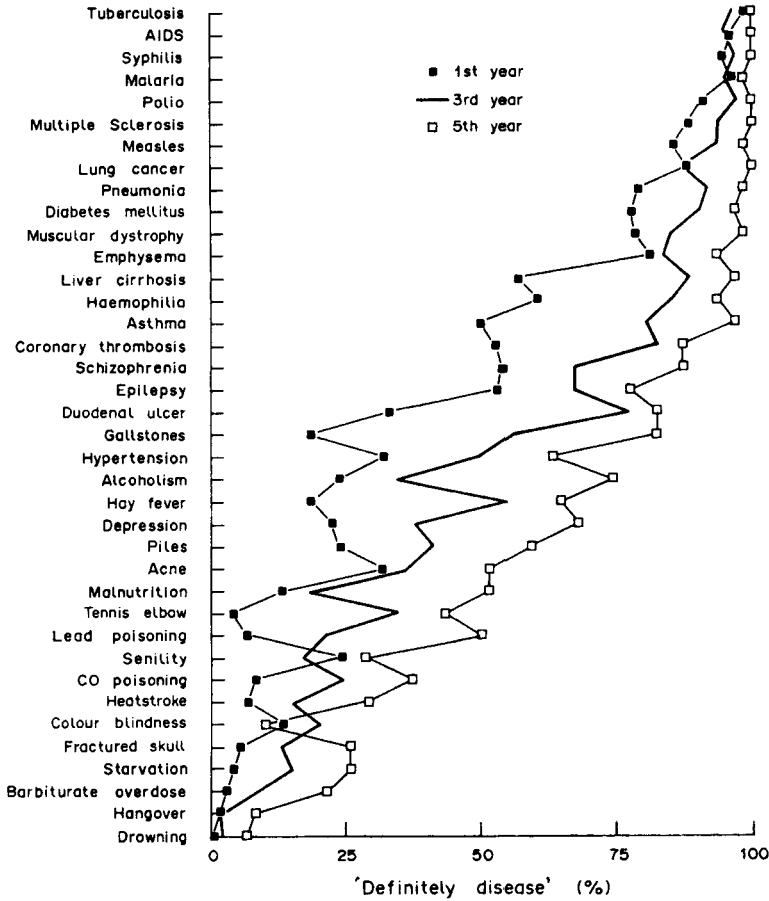


Fig. 1. Indicates the percentage of first, third and fifth year students who said it was 'Definitely' a disease for each of the 38 conditions. The conditions are ranked in terms of the overall proportion of students who thought that the condition was a disease; the order shows a correlation of 0.958 with that reported by Campbell *et al.* [2].

sive and somewhat more precise in its application. Irrespective of the philosophical problems associated with a nominalist definition of disease [1, 3, 6], our empirical findings suggest that psychologically the changing usage in medical students of the term 'disease', which occurs smoothly and without obvious watershed, cannot be explained adequately as a result of developing perceptions of the seriousness or otherwise of the conditions.

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