Neurologial education

Neurosciences need to be made more accessible for medical students

N
eurology, it seems, has a reputation among medical specialties of being particularly difficult. This was highlighted in the British Medical Journal in 1999 when the editor wrote, “the neurologist is one of the great archetypes: a brilliant, forgetful man with a bulging cranium....who...talks with ease about bits of the brain you’d forgotten existed...adores diagnosis and rare syndromes, and—most importantly—never bothers about treatment.” The relevance of this view to the teaching of neurology was analysed in a not totally serious letter in 1994 by Ralph Jozefowicz entitled “Neurophobia,” in which the author claimed 30% of medical students at some stage have “a fear of neural sciences and clinical neurology.” His explanation for this was students’ inability to apply knowledge of basic sciences to the clinical situation. This letter was based on personal views not supported by what the BMJ called “evidence based education” in another editorial in 1999. We therefore set out to ascertain perceptions of seven major medical specialties among British medical students, senior house officers (SHOs), and general practitioners, principally in order to find out the actual perceptions of neurology in comparison with the other disciplines.

THE STUDY

Part 1

Part 1 was a questionnaire based study, given to four separate groups and the results presented are the analysis of 345 replies: 101 medical students from St George’s Hospital (five sequential groups of about 20 at the end of their fourth year clinical neurology attachment), 85 medical students from the Royal Free Hospital attending a revision course for their final examinations (the total size of this group was 94), 100 SHOs attending teaching courses for parts 1 and 2 of the MRCP examination (of a total of 108), and 59 general practitioners (31 of whom were attending a postgraduate neurology session and 28 were attending a meeting of general practitioners who teach medical students at St George’s Hospital). All were asked three questions about seven medical specialties: cardiology, endocrinology, gastroenterology, geriatrics, neurology, respiratory medicine, and rheumatology.

Question 1: What is your current level of interest?

Six options were offered: 0 = not known or other; 1 = little or no interest; 2 = some interest; 3 = moderate interest; 4 = quite interested; 5 = very interested.

Question 2: What is your current level of knowledge?

The six options offered were: 0 = not known or other; 1 = little or none; 2 = some; 3 = moderate; 4 = fair; 5 = great.

Question 3: Do you think the subject is easy or difficult?

The six options were: 0 = not known or other; 1 = very easy; 2 = quite easy; 3 = moderate; 4 = quite difficult; 5 = very difficult.

The 159 qualified doctors (SHOs and general practitioners), but not the students, were also asked the following fourth question:

Question 4: When you see a patient in accident and emergency (for the SHOs)/your surgery (for the general practitioners) with a not straight forward complaint in each of the following areas, what do you feel? 1 = very uneasy; 2 = uneasy; 3 = averagely competent; 4 = confident; 5 = very confident.

The data presented are the pooled results for all 345 questionnaires unless stated otherwise. For each of questions 1 to 4, the difference between the mean scores for neurology and the other six specialties was examined using the independent sample t test.

Part 2

After the results of the initial study had been analysed a second questionnaire study was carried out on another group of SHOs attending MRCP courses, aimed at trying to analyse why neurology was felt to be a difficult subject. Five possible reasons were selected:

1. The need to know basic neuroscience
2. The complex clinical examination
3. Neurology having a reputation as a difficult subject
4. Neurology covering such a large number of diagnoses
5. Neurology being badly taught.

For each of these reasons, five options were offered: 0 = do not know; 1 = unimportant factor; 2 = possible factor; 3 = important factor; 4 = very important factor.

At the end of the questionnaire there were two “open” questions:

1. Write why you think neurology is felt to be a hard subject.
2. Write ways in which you think neurology and neuroscience teaching could help the situation.

We analysed the replies of 80 SHOs (of a total of 96).

RESULTS

The answers to questions 2, 3, and 4 all showed how difficult neurology is perceived to be in comparison with the other six disciplines surveyed. When asked about their level of knowledge, the participants said they knew least neurology (p < 0.005 v all other subjects), followed by endocrinology and rheumatology. The subjects they felt they knew most about were respiratory medicine and gastroenterology (fig 1A).

Second, not only did the whole group rank neurology as the most difficult subject but they felt it was far more difficult than any of the other subjects (fig 1B). This view was equally clear among all the four separate groups surveyed. The perceived level of difficulty of neurology over all the other subjects was again highly significant (p < 0.001). All the other subjects were ranked fairly close together, although gastroenterology was considered the easiest followed by geriatric medicine and respiratory medicine.

The two groups of qualified doctors who were also asked to assess their confidence in practical clinical situations felt clearly less confident in dealing with neurological cases than with any of the other medical specialties (fig 1C) (p < 0.001). Both groups of doctors felt that elderly care cases were the easiest to handle, with respiratory medicine and gastroenterology almost as easy.

As a group, the 345 participants were not uninterested in neurology, ranking it third after cardiology and respiratory medicine, with gastroenterology fourth and geriatric medicine seventh (fig 1D).

A further 80 SHOs were asked questions about why they felt neurology was perceived to be such a difficult subject. Five possible reasons were given for the ranking, and the responses to these were categorised on a scale of 1 to 4, where 1 = unimportant and 4 = very important. The results are based on 78 completed questionnaires. “The need to know basic neuroscience” was ranked the most important factor (mean score 3.05), followed fairly closely by “poor teaching of neurology” (mean score 2.92). The “reputation of neurology as being difficult” and the “complexity of neurological examination” were ranked as moderate factors (mean scores 2.56 and 2.50), and the “wide range of diagnoses” was felt to be the least important (mean score 2.00).

The group of 78 SHOs also answered the two open questions given above in

www.jnnp.com
The section describing part 2 of the study. The full list of replies is given in table 1.

The first open question was on why neurology was difficult. Eighty-one reasons were given by the 70 people who answered the question. The most common reason was “poor teaching” followed closely by “problems related to neuroanatomy” and “the difficulty of the clinical examination.” Six other common reasons were: concerns about neuroscience in general; the subject’s awesome reputation; the complexity of the subject; the multiplicity of diagnoses; the lack of integrated clinical and basic neuroscience teaching; and finally the wide ranging nature of the subject.

The second open question asked for ways in which the situation could be improved by better neuroscience and neurology teaching. There were 78 responses to this question from 59 completed forms. Four main answers were given. The commonest was the need for more teaching, with half specifying the need for more clinical teaching. Next came the need to integrate basic neuroscience teaching with clinical neurology. Third was the need for better teaching, with half the respondents specifically mentioning neuroscience teaching. Fourth was the need to make clear what is “simple, basic, straightforward, and important”.

COMMENT

In this questionnaire based survey of British medical students from two London teaching hospitals, SHOs, and general practitioners we examined perceptions of seven medical disciplines, with the aim of focusing on attitudes to neurology. We could not find any similar published surveys.

The main findings relate to how difficult neurology was felt to be. There were three separate aspects to this: first, neurology was ranked as far more difficult than any other discipline in a theoretical context; second, it was also the subject the doctors had least confidence in handling “at the bedside”; and third, neurology was the discipline the group felt least knowledgeable about. This was a predictable response from the medical students; however, we were interested to find that it also applied to junior doctors and general practitioners, some of whom had been practising for 20 years. We appear to carry the perceptions formed at medical school throughout our subsequent careers.

The fact that neurology is thought to be so difficult does not, of course, mean that students or doctors actually know less neurology, do worse in neurology questions in examinations, or handle neurology cases less adequately in their clinics than they do the other six disciplines. They could, for example,