Original Article

Assessment of the Undergraduate Curriculum in Paediatrics in Malta

Student feedback in Paediatrics, Malta

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Summary

Aim: The study was designed to assess both satisfactory and unsatisfactory aspects of the undergraduate curriculum in Paediatrics as perceived by the students themselves.

Methods: A simple questionnaire was designed to assess students' perceptions of the curriculum and was returned from 17 students from a cohort of 57 in 1999, and 32 from 39 in 2002.

Results: In most aspects of the course, replies were highly satisfactory and often excellent, particularly with regard to the course organisation, attendance of lecturers, coverage of general paediatrics, tutorials and examinations. Some areas where student dissatisfaction was in excess of one third of respondents, notably the amount of neonatal coverage in 1999, have been addressed and had improved in 2002. Nevertheless, the follow up questionnaire in 2002 has shown that other issues remain problematic, particularly a lack of coverage of community paediatrics and insufficient 'hands-on' teaching.

Conclusions: A simple questionnaire-based format for assessing student feedback was both practical and reliable, and can be applied to assess the influence of any future changes in the curriculum. The questionnaire does not only confirm anticipated curricular deficiencies but is also effective in highlighting unexpected problems that can, therefore, be addressed appropriately.

Keywords

Undergraduate feedback, paediatrics

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Introduction

Constructive feedback from 'clients', whether critical or complimentary, is essential for the ongoing improvement of any exercise. This is certainly true for all teaching programmes, not least those that involve 'real' patients and require considerable student participation. Useful feedback will not only support the strong points in the programme but will also highlight deficiencies, thereby allowing the organisers to adjust and improve subsequent courses, as appropriate. Although student feedback is a continuous, dynamic process, it can be documented formally using various processes[1-3]. In this study we used a questionnaire in order to obtain feedback on the curriculum in Paediatrics from undergraduates and newly qualified houseofficers. This paper reports on the findings of this study whilst highlighting the pitfalls of such an exercise that may, in practice, render the entire process useless.

Methods

The undergraduate course in Paediatrics

In the University of Malta Medical School, Paediatrics is taught in the fourth and fifth (final) years when students are given 1ecture modules comprising 25 and 12 lectures, respectively. They are exposed to an 8-week clinical attachment in the fourth year and 4 weeks in final year, which include allocation to the general, oncology and neonatal wards in rotation, according to consultant firms. They are assessed by a written examination comprising 25 multiple choice questions (MCQs) with negative marking, 4 short answer and one long, structured question in the fourth year. In the final written examination in Medicine, Paediatric questions amount to 2 out of 10 short answer and 5 from 60 MCQs. A clinical examination contributes to one third of the final clinical mark in Medicine and consists of 2-3 short cases with 6-12 picture slides/imaging/data interpretation. Teaching is undertaken by six part-time lecturers and several other paediatricians who do not hold a University post yet assist in the clinical module.

Target audience

An initial questionnaire and explanatory letter was posted to all newly qualified house officers who graduated from the University of Malta in 1999, within one month of their success in the Final Examination. An initial reminder in the form of an identical questionnaire was sent to non-responders two months later, followed by a second reminder (in letter format) a further

two months later. In 2002, the same questionnaire was handed to and collected immediately from students at the beginning of the last revision lecture in Paediatrics just prior to the final examination. The grades obtained by these cohorts in the two examinations in Paediatrics in fourth and final year, respectively, were assessed in order to confirm a normal Gaussian distribution of marks that, in turn, would suggest that the cohorts were representative of the 'average' graduating class from the Medical School.

The questionnaire

A relatively short questionnaire was divided into six main sections which addressed: 1) General course organisation; 2) The syllabus; 3) The lecture programme; 4) The clinical teaching; 5) The Paediatric assignment (a choice whether to submit a Dissertation with three Case Histories, or ten Case Histories without Dissertation, and 6) The examinations. Each section comprised of 3-6 stem questions and the respondent was asked to circle one of three or four options, e.g: low (<10%) /moderate (10-25%) /high (>25%); or excellent/good/fair/poor. Each section was provided with space for 'comments', and the final page was solely allocated to feedback in the form of comments/suggestions/criticism. (NB: A copy of the original questionnaire may be obtained from the corresponding author).

Analysis of the questionnaire

The grades obtained by each cohort were analysed to assess whether they reflected a normal, Gaussian distribution or not, and reported as the degree of 'skewness'. Replies to each question were grouped as total numbers and percentages of the questionnaire returns. For the purposes of this study, adequate satisfaction for a given question was assumed when at least two thirds (66%) responded positively; conversely, more than 33% voicing dissatisfaction to a given question was taken to indicate the need for corrective measures in future courses. Where appropriate, Chi squared analysis (with Yates correction due to small numbers[4]) was used for statistical analyses.

Ethical approval: This was not considered appropriate for this study.

Results

Respondents

Cohort 1999: The questionnaire was sent to 57 successful new graduates, all of whom had completed the undergraduate course in Paediatrics in their fourth and fifth year of studies. The cohort was representative of most undergraduate classes in Medicine, with two failures from 57 students in both the fourth and final examination in Paediatrics, all of whom were successful in the subsequent resit examinations. An expected Gaussian distribution was observed in the grades of those that passed at the first attempt with, for examples, six having obtained a grade 'A', thirty four grade 'B' and seventeen grade 'C' in the fourth year examination (skew +1.28).

Cohort 2002: The questionnaire was given to 32 students (out of a total of 39 for the year) who attended the revision lecture just prior to the final examination. All had completed the undergraduate course in Paediatrics. Although none of these students failed either the fourth or fifth year examinations, the distribution in grades was narrow with no student obtaining an 'A', 16 obtained a 'B' and 23 'C' in the fourth year (skew +0.32).

The questionnaire

Despite the repeated reminders, just 17 (30%) of the total of 57 graduates in 1999 returned the questionnaire, although all 17 returns were completed in full. In contrast, all 32 (82%) from the total of 39 students in 2002 returned the completed questionnaire. The results from these questionnaires are summarised as follows:

General section

Cohort 1999: 13 of 17 respondents (77%) felt that the duration of the paediatric course was appropriate whilst four (23%) would have preferred a longer course. None believed the course was too long. 16 (94%) were pleased with the overall organisation, whereas one respondent felt that this area left room for improvement.

Cohort 2002: There was no difference in the answers to the questions in this section in 2002, with 24 from 32 (75%)

Figure 1:
Syllabus: Percentage satisfaction in 1999, 2002

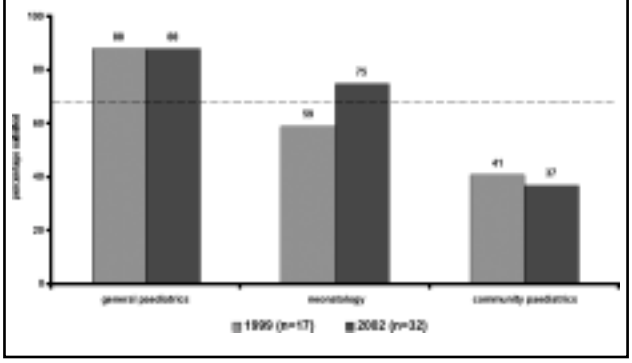
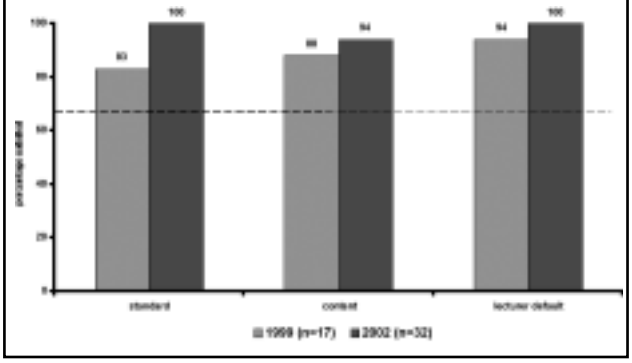


Figure 2:
Lecture programme: Percentage satisfaction in 1999, 2002



expressing satisfaction with the course duration and eight (25%) believing this to have been too short. The number who felt the course organisation could improve increased to 25% whereas 75% were satisfied with this aspect of the course. These results were not statistically different from those in 1999 (x^2 1.58; p=0.14).

Cohort 1999: Respondents varied in their assessment of the non-attendance rate for lecturers with 10 from 17 (59%) reporting a low default rate (less than 10%), 35% reporting a default rate of between 10-25%, and one respondent claiming a default rate in excess of 25%. These respondents gave an identical assessment for the default rate of tutors for clinical sessions.

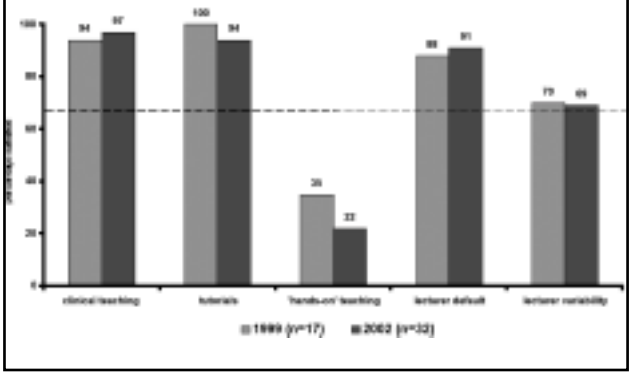
Cohort 2002: Lecturer non-attendance had improved in 2002, with 22 respondents (69%) reporting a low default rate, 10 (31%) a moderate rate and no student reported a default rate greater than 25% for lectures. The results were not significantly different for clinical sessions in 2002 with 66, 25 and 9% of students reporting low/moderate/high default rates, respectively.

The Syllabus

Cohort 1999: Respondents believed General Paediatrics was well covered with 88% reporting sufficient coverage versus 12% reporting insufficient material. In contrast, respondents were less convinced with regard to Neonatology and Community Paediatrics where 59 and 41%, respectively, believed the syllabus was adequately covered in these specialties.

Cohort 2002: As shown in Figure 1, satisfaction in the General Paediatric syllabus was almost identical in 2002: 88% 'sufficient material' versus 3% 'too much' and 9% 'too little'. Student satisfaction with neonatal coverage had improved with just 22% complaining of inadequate cover (and one claiming too much), although this was not statistically different when compared with 1999 (x^2 0.45; p=0.25). However, dissatisfaction with the extent of Community Paediatrics in the syllabus continued to increase with 63% voicing dissatisfaction (x^2 0.01; p=0.96).

Figure 3
Clinical Programme: Percentage satisfaction in 1999, 2002



Lectures

Cohort 1999: 13 of 17 (77%) scored 'good' and 3 (18%) 'fair' for the standard of lectures, whereas one thought these were 'excellent' and none reported these as 'poor'. The majority (88%) believed the material content of lectures was sufficient with one respondent preferring more and one less.

Cohort 2002: As shown in Figure 2, the standard of lectures appeared to have improved in 2002 with all respondents considering the standard of lectures as 'excellent' (18=13%) and 'good' (28=87%), respectively. Likewise, 94% believed the material content of lectures was sufficient, with one respondent preferring more and one less.

Clinical teaching

Cohort 1999: Ninety four percent of respondents considered the overall standard of clinical teaching excellent (47%) or good (47%), but were less convinced with the consistency of this aspect of the course with 30% reporting that this was variable and tutor-dependent.

Cohort 2002: Similarly, as shown in Figure 3, 97% of students in 2002 felt that the overall standard of clinical teaching was good or excellent with, again, 31% reporting that clinical teaching was somewhat variable and rather tutor-dependent.

Both cohorts: All respondents were satisfied with the standard of tutorials, reporting 'excellent' or 'good' in 100% (1999) and 94% (2002), respectively (Figure 3). In contrast, however, respondents were dissatisfied with the amount of 'hands-on' teaching with a majority of 65% in 1999 increasing to 78% in 2002 (x^2 0.45; p=0.25) reporting that 'hands-on' teaching was 'too little' (Figure 3).

Assignments

Cohort 1999: Of the seven respondents who completed a dissertation, six found this to be a useful exercise and five of these reported satisfactory support from their respective tutors. The majority (79%) considered the case histories 'useful' whilst 21% felt this was a worthless exercise. Only six respondents (35%) had kept a log book during their Paediatric assignment and all barring two of the total of 17 considered this to be 'a waste of time'.

Cohort 2002: Students were not assigned this task in 2002 but when asked, all respondents reported that they would consider this a useful exercise only if the dissertation or case histories contributed toward the final mark in Paediatrics. No student had kept a log book and all 32 considered this a worthless exercise.

Examinations

Cohort 1999: 71 percent in the fourth year and 94% in the fifth year felt that the written examinations were 'fair'. Just one candidate considered the fourth year examination to be 'too difficult' whilst four in the fourth year and a single final year candidate felt that these examinations were 'too easy'. Similarly,

the majority (94%) was satisfied that the clinical examination in the fifth year was 'fair' with just one individual considered this to be 'too easy'.

Cohort 2002: All respondents in 2002 believed the fourth year examination was 'fair'. However, since this cohort completed the questionnaires before the final examination, we were unable to report their assessment of the final clinical examination.

Comments and suggestions

Cohort 1999: There were 29 suggestions from seventeen respondents. Some issues were raised by individual students, including a request to provide handouts and another to increase the duration of the examination papers. Others were repeated by at least two or three respondents, including requests to attend paediatric casualty, requests to increase 'hands-on' teaching and include ethical issues in the syllabus. Complimentary comments relating to the organisation of the course, lectures and slide presentations were cited on seven occasions. However, the greatest optional feedback was for the abolition of the log book with almost 88% of respondents making a point of criticising this exercise with just 12% passing favourable observations.

Cohort 2002: There were 31 suggestions from 32 respondents. There were eight complimentary comments relating to the organisation, standard of teaching, lecturer commitment, usefulness of tutorials and slide presentations. Individual students requested the availability of past papers, an increase in the length of the course and attachment to the same consultant throughout. Again, a request for more tutorials was cited four times, whilst a majority would have liked more clinically-orientated, 'hands-on' teaching (11 replies).

Analysis of results

More than 66% of respondents were satisfied with the organisation, syllabus, lecturers, clinical teaching, tutorials and examinations in both cohorts. Scores (as a percentage) of more than one third (33%) of respondents claiming dissatisfaction were deemed inadequate and were obtained for the following questions (in decreasing order of importance as assessed by the students):

	Cohort 1999	Cohort 2002
The log book	88% dissatisfied	100% dissatisfied
'Hands-on' teaching	65% dissatisfied	78% dissatisfied
Cover of Community Paediatrics	59% dissatisfied	63% dissatisfied
Cover of Neonatology	35% dissatisfied	(below 33%)

In addition to these, comments received also indicated the need for (i) the introduction of ethics in the syllabus (1999), (ii) student exposure to Paediatric Casualty (1999), and (iii) an increase number of tutorials (2002).

Discussion

This study is in consonance with other studies[1-3], and has shown that useful information on a teaching curriculum can be obtained from undergraduates by relatively simple means, and that this information can be used to introduce effective changes. The questionnaire format allows direct student participation in the assessment of the curriculum and in guiding any future developments. Although student feedback was generally found to be 'as anticipated', interestingly, what they perceived as 'curricular needs' may not be identical to those prioritised by the tutors. However, this usually applied to relatively minor issues (e.g. handouts) and, in the main, both students and tutors rated highly issues that translate into better clinical practice (e.g. hands-on teaching). In addition, the questionnaire was validated by subsequent student cohorts and, moreover, the results of any effected changes can also be audited over successive years.

The study also highlighted problems related to a postal questionnaire, especially the response rate of just 30% despite multiple reminders in 1999, which was well below the returns of 84-87% reported in similar studies[1,5-7]. This problem was circumvented in 2002 where the return rate was 82%, since the questionnaire was handed out and immediately collected from those students who attended the last revision lecture before the final examination in medicine that, not surprisingly, constituted the majority. However, this *modus operandi* has the disadvantage that the study groups were inherently dissimilar in that one consisted of newly qualified doctors, the other final year students who may be less inclined to comment adversely. Furthermore, feedback of students (albeit a small minority) who were absent for the final revision lecture was not obtained and, for this group, there was no feedback relating the final examination itself.

Arbitrarily, a positive response rate in excess of two thirds was taken to be satisfactory, and any question whereby more than 33% of respondents replied negatively as unsatisfactory. Overall, the returns obtained were encouraging and were generally 'satisfactory' (or better) for most areas of the undergraduate curriculum. Despite the poor return rate from just 30% in 1999, the answers obtained agreed with the authors' experience and concerns and, later, with those obtained from the cohort in 2002, 82% of which completed the questionnaire. Hence, although the low response rate in 1999 raised problems when comparing the two groups, the reproducibility of the results justified the acceptance of this limitation. Indeed, for this rea-

son the replies and suggestions in 1999 were taken into account, and changes were effected in the curriculum on the basis of these returns. In 1999, dissatisfaction was observed with the log book (88% dissatisfied), amount of 'hands-on' teaching (65%), teaching in community paediatrics (59%) and neonatology (35%). Encouragingly, on review in 2002, curricular changes effected between 1999-2002 had resulted in improvements, in particular with regard to the coverage in neonatology where the dissatisfaction rate had dropped to 22%.

Although all observed results in this study did not reach statistical significance, this was attributed to the inherent limitations of the study due to the small numbers involved. Nevertheless, those apparently disappointing, if not statistically significant, replies would suggest that a greater effort is required in the areas of 'hands-on' teaching and community paediatrics where the number of dissatisfied students in 1999 and 2002 had actually increased from 65 to 78% and 59 to 63%, respectively. The disappointing results relating to 'hands-on' teaching were expected following our day-to-day discussion with students. Although this problem may be compounded by the small size of our own department, both in terms of teaching staff, resources and number of in-patients, it appears to be common to many undergraduate curricula[1,7]. In contrast, however, the poor results for community paediatrics were not expected, thereby underlying the importance of this in-house audit. Clearly these two areas require addressing with a further, greater emphasis on practical, 'hands-on' teaching and greater exposure to community paediatrics, both in the lecture programme and in 'the field'.

Other issues where students voiced concerns in 1999 have already been addressed, notably the introduction of a seminar on ethical issues which has formed part of the curriculum since 2000, and an increase in the number of tutorials. The latter, particularly if conducted in small groups by tutors with good group-dynamic skills have been shown to be very effective learning tools[2,8]. Like others[1], this study has reported a variable standard of teaching that is tutor-dependent. However, we did not ask students to grade individual tutors and, in a small department with limited resources and personnel (including just six officially appointed lecturers), it would be difficult to address this issue satisfactorily. The provision of handouts, more time spent with a single consultant and exposure to paediatric accident and emergency may have their advantages although, in this study, the majority of students did not believe that these are crucial to the improvement of the curriculum. We would agree with these sentiments, with the exception of exposure to casualty. Other issues, in particular the use of a log book, seems to be uniformly disregarded by the students. Hence, a reintroduction of the log books will only be effected if overwhelming arguments in favour surface at some point in the future. Indeed, the same is true for any other part of the curriculum, which will require evidence-based data in order to bring about change[9].

Conclusion

A simple yet practical questionnaire provided useful feedback and has shown that, overall, the undergraduate course in Paediatrics in the Medical School, Malta is performing well. Moreover, the same questionnaire can confirm anticipated curricular deficiencies, highlight unsuspected lacunae and clearly indicate those areas still requiring corrective action. It can be applied to audit curricular changes and, in practice, has already allowed for effective, ongoing improvements in the undergraduate course. This study would strongly support the introduction of a similar, in-house audit exercise for all other departments within this Medical School, on a regular basis.

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