

The objective assessment of general practitioners' educational needs: an under-researched area?

PAUL MYERS

SUMMARY

A systematic literature review of the educational needs assessment of general practitioners (GPs) is described. A total of 36 studies, based on the subject of educational needs in primary care, were identified. The methods of searching and the difficulties in identifying papers on the chosen subject are discussed. Although there is an extensive literature on the reporting of the perception of GPs' learning needs, there have been relatively few studies describing their objective evaluation. Seventeen papers on this subject are described, and it was found that questionnaires and structured interviews were the most usual method adopted. There is a case for developing and evaluating a wider range of methods for assessing educational needs in primary care, particularly if the move towards portfolio-based learning is to gain momentum.

Keywords: educational needs assessment; continuing medical education; portfolio-based learning.

Introduction

OVER the past five years, the philosophy of providing continuing medical education (CME) for primary care has changed. In the early 1990s, educational activity for general practitioners (GPs) was developed around postgraduate education allowance (PGEA) accreditation, and innovation and modern methods of learning were rarely introduced. The majority of PGEA-accredited activities were obtained outside the practice setting, generally in postgraduate centres and on courses. Now, multidisciplinary education and practice-based activities are being promoted widely and we are beginning to see education programmes reflecting this. It has long been accepted that adult learners will frequently choose educational areas that are of interest to them, rather than being related to areas of educational need. GPs are no exception to this, and a closer matching of educational provision to measured need is a desirable feature of CME.

While CME is receiving increasing attention from medical educators and health administrators worldwide, many efforts need to be made to improve its performance and overall effectiveness. Traditionally, CME has depended primarily on postgraduate courses and lectures. These remain of unproven cost-effectiveness, and often the choice of their content is not tailored to meet the needs of the learners.

There is an increasing need for the introduction of assessment mechanisms that will objectively measure the actual desired advancement of the learners as well as the matching of education to need. Also, in a culture of changing from unidisciplinary postgraduate centre-based education to a multidisciplinary practice-based system, the need to match educational provision to the real

needs of the primary care team is greater than ever. An insight into educational needs assessment methodology among family doctors could therefore have important implications for the development of practice educational needs assessment.

While CME has been accepted as effective in the clinical behaviour of participants, there is still uncertainty as to the most effective method of determining the educational needs of family doctors to produce a content that is both clinically important and relevant to their practice. For example, the author is currently developing a portfolio-based learning programme for GPs and practice nurses that is based on the objective assessment of educational need. Knowledge of the available methods for assessing the educational need of practising family doctors would be helpful to any GP educationalist evolving CME programmes. Such information would also assist emerging Education Boards in the development of strategies for education provision in primary care.

The objective of the study described here was to determine the range of available techniques used in the assessment of GPs' educational needs that could be found in peer-reviewed publications. To achieve this, a series of literature searches of educational needs assessment was undertaken and an analysis of the results is presented here.

Method

The literature search was based on two methods of information retrieval. A series of on-line electronic searches of the MEDLINE databases¹ was made using the BMA/Ovid² (1997) Internet site. Initially, various keywords were used for separate searches and this was followed by further searches using the database's MeSH subheadings. This search was complemented by direct independent requests to the British Medical Association Library, the Royal College of General Practitioners Library, and the Library at St Bartholomew's Hospital and The Royal London, Queen Mary and Westfield College for references on the chosen topic. This approach was adopted to reduce the chance of missing a relevant reference. Keywords used in the searches included 'needs assessment', 'general practice/practitioners', 'family physicians', 'educational needs', and 'needs assessment visits'. All of the resultant citations were entered onto an electronic database (MSWorks version 4.0) and sorted according to the actual relevance to the subject under review. This was, admittedly, a subjective evaluation, but was necessary to identify those studies that related directly to educational needs. For example, some articles might contain a reference to phrases containing or referring to a given keyword, but in practice was not actually relevant to educational needs assessment. All studies resulting from the search methods described were evaluated as to content, year of publication, country of origin, and relevance to general practice. A final database of studies was produced, the arbitrary criteria for entry being:

- study based on family practice medicine,
- study concentrates on assessment of educational not service needs,

P Myers, MBBS, FRCGP, senior lecturer, Department of General Practice and Primary Care, Queen Mary and Westfield College, London.
Submitted: 2 March 1998; final acceptance: 30 October 1998.

© British Journal of General Practice, 1999, 49, 303-307.

- study relates to clinical practice rather than medical administration, and
- study undertaken in the past eight years.

Results

The primary searches identified 87 original articles that dealt with the subject of educational needs assessment. Of these, 38 originated in the United Kingdom (UK), 21 from the United States (US), 13 from Australia, 8 from Canada, and the remainder from Europe. The articles were, on average, three years old, with 25 articles published in 1997 and 24 published the year before. Following the review of the articles against the entry criteria described, a total of 35 articles were found. Thirteen of these were based on educational needs assessment in the UK (Table 1).

Discussion

The review of the papers resulting from the search revealed that there is only a limited literature on the subject of assessing GPs' educational needs. The literature search revealed a confusion over semantics; for example, the interpretation of the term 'GP educational needs' was frequently taken to be synonymous to learning needs, and often papers would be more concerned with an evaluation of the educational programmes under discussion rather than an evaluation of the needs around which the programme should be built. Once such papers were excluded, the remaining publications did not always differentiate between a preferred learning style of the observed subjects and their learning needs, and both areas tended to be grouped together as 'educational needs'. Studies often incidentally referred to educational needs assessment in passing and emphasized other areas, such as CME programme content or the evaluation of the educational activities being described. In addition, studies might refer to needs incidentally, the main thrust of the article being an evaluation of an educational intervention.

The articles under review could be divided into two main groups. The first group covers the assessment of educational needs in abstract, either presented in the form of a review article or described from the perspective of interested third parties, such as workers in secondary care. This was considered a subjective opinion based on experience rather than a definitive, objective assessment. For example, Myers,³ Moorhead,⁴ Mann,⁵ Forrest,⁶ and Laidlaw⁷ describe survey techniques for the subjective assessment of need, and Boath describes the use of the Delphi technique in a study on GP prescribing.¹⁵ This contrasts with the second group of articles that describe an objective assessment of educational needs, often describing the performance of a group of practitioners against defined criteria using a standardized assessment tool. This differentiation between these two assessment types is shown in Table 1.

When one considered the objective assessments, these covered a wide range of clinical topics and used a diversity of methods ranging from assessment using an interactive medium, such as the Internet, to more traditional methods, such as surveys and questionnaires. The clinical topics covered, and the method of assessment of 17 studies that dealt with the objective assessment of GPs' educational needs, is shown in Table 2.

A review of the objective assessment methodology described in these studies is a useful exercise. Self-administered questionnaires given at the time of an educational event were the most frequent method of assessment,⁸⁻¹² although postal questionnaires were also used.^{13,14}

Other methods were used to obtain a perception of the knowl-

edge, skills, competencies, and attitudes required by GPs to practice. An interactive technique involving the Internet for a needs assessment survey of family doctors and others, using an on-line survey form on the Internet, was described by Richardson.¹⁶ Evaluation techniques developed for undergraduate training and extended to practising family doctors were described by O'Brien,¹⁷ who used objective structured clinical examination (OSCE) assessments with standardized patients to assess clinical skills covering knowledge of cardiology, physical examination, and counselling skills. Observation of the practical performance of GPs was described by Jansen as an evaluation method for the assessment of cardiopulmonary resuscitation.¹⁸ He also looked at performance-based tests for the technical clinical skills of GPs and compared this with the results of written knowledge tests.¹⁹ In another study, educational needs assessment centred on small group work evaluation of clinical competencies was described by Houston.²⁰ Jacques²¹ described the use of a structured oral interview (SOI) as a method of identifying educational need using clinical problems associated with standard cases. The evaluation of education needs of family physicians by use of the SOI was also described by Miller²² as a method of assessing physicians in areas of prescribing and referrals. Clinical assessment based on a slide presentation was another innovative method used.²³ Davis employed the technique of using a standardized case recall questionnaire on the management of osteoarthritis, and found this to be a simple and inexpensive means of assessing educational needs of family physicians.¹² In a recent study, Marshall²⁴ described interactive sessions centred on clinical cases to determine educational needs.

The need to link the relevance of the educational material to the GPs' actual practice was a recurrent theme among the papers; a proactive model developing this concept was described by Williams using a knowledge examination to determine clinically important content that is relevant to the practitioner population.¹¹ In looking at educational needs, Manning emphasized that knowledge gained from formal CME activities is memory-based and called for educational methods for answering specific questions at the time of caring for patients.²⁵

Conclusions

The initial literature search revealed many studies that related to areas other than educational needs. Topics describing GP involvement in education intervention studies, patient needs studies, and the educational needs of other health professionals were often present in articles initially appearing to be covering the subject of GP needs assessment. It is important to differentiate between papers considering the perceived educational needs of GPs and those describing a measured objective evaluation. The search has revealed a gap in the available literature with respect to objective assessments.

This is of considerable relevance when attempting to relate CME programmes directly to the measured rather than the perceived needs of the participants. Currently, there is a move towards relating the provision of CME programmes to the educational needs of the participants, as in the model of individual portfolio-based learning. Such models have been reviewed previously,²⁶ and programmes are beginning to be developed and evaluated.^{27,28}

If the model for continuing professional development for the GPs of the future is likely to be based on individual portfolio-based learning, then the development of a learning plan upon which the portfolio-based activities would be based will require a range of structured educational needs assessment tools. The methods summarized here could provide the basis for the

Table 1. Articles describing GPs' educational needs assessments (NA = not applicable).

Principal author	Country of origin	Article's relevance to educational needs assessments	Year published	Assessment type
Black F	Australia	Visit by external clinical teacher to assess competence of GP registrars	1995	NA
Black F	Australia	Learning from GPs' own consultations and giving feedback when visited by external teachers, but model relates to GP registrars	1994	NA
Boath E	UK	Assessment of knowledge, skills, attitudes, and competencies for GPs to prescribe effectively to develop distance learning course content based on the Delphi technique of interviewing GPs. Not a specific educational needs assessment.	1997	Subjective
Boland M	Australia	Review article on the wants and needs in CME, although no specific assessment programmes described	1997	NA
Challis M	UK	Assessment of learning needs of GPs through a portfolio-based learning programme	1997	Subjective
Crozier AM	UK	Assessment of learning needs of GPs based on a proposed annual education assessment visit to produce a personal learning plan	1996	NA
Davis P	Canada	Assessment of educational needs of family physicians by the use of a standardized case recall questionnaire on the management of osteoarthritis	1995	Objective
Forrest JM	UK	Assessment of educational needs of GPs determined through a questionnaire study to examine their perceived needs	1989	Subjective
Gillam SJ	UK	Assessment of needs (Occasional Paper, RCGP); relates to patients' medical needs rather than GPs' educational needs	1996	NA
Houston HL	UK	Assessment of needs evaluated in small group work looking at clinical competencies	1995	Objective
Jackson C	Australia	Assessment of GPs' skills in assessing eye problems measured by looking at slide presentations before and after a 'clinical up-skilling intervention'	1997	Objective
Jacques A	Canada	Assessment of educational needs of family physicians investigated through the use of a structured oral interview with the presentation of prepared cases	1995	Objective
Jansen JJ	Netherlands	Performance-based test for technical clinical skills of GPs	1996	NA
Jansen JJ	Netherlands	Skills evaluation of the performance of GPs providing cardiopulmonary resuscitation by the use of checklists and observation	1997	Objective
Kelly MH	UK	Evaluation study of the motivation of GPs to attend PGCEA-approved activities	1996	NA
Laidlaw JM	UK	Assessment of GPs' decision-making on referral needs of patients with malignant melanoma	1996	Objective
Mann K	Canada	Assessment of learning needs of practising physicians based on physicians' perspectives and expressed need	1992	Subjective
Marsden P	UK	Postal questionnaire for GPs assessed on the subject of diabetes	1990	Objective
Martin F	Canada	Evaluation of a CME programme for GPs on the subject of HIV, assessing knowledge before and after the programme by questionnaire	1997	Objective
Miller F	Canada	Assessment of education needs of family physicians by use of structured oral interview using physician interviewers and standardized clinical cases	1997	Objective
Moorhead RG	Australia	Assessment of educational needs of GPs via a survey; measured areas of need and preferred method of learning	1994	Subjective
Moran JA	Canada	Assessment of family physicians' competence by analysing data from patients' charts and by measuring doctors' performances	1996	Objective
Myers P	UK	Assessment of educational needs of GPs by the identification of key facts by consultants	1997	Subjective
O'Brien MK	USA	Assessment of clinical skills using OSCE with standardized patients. Also covers knowledge of cardiology and physical examination and counselling skills	1996	Objective
Phongsavan P	Australia	Questionnaire study assessing educational priorities and training preferences of GPs dealing with mental illness	1995	Subjective
Pitts J	UK	Identification of wants and needs of GPs considering undergraduate teaching	1994	NA
Richardson ML	USA	Needs assessment survey of family doctors and others through Internet using an on-line assessment form	1997	Objective
Robinson LA	UK	Assessment of training needs of GPs considering undergraduate teaching	1996	Subjective
Rubenstein LV	USA	Evaluation of education programmes; included an illustrative pilot study in which GPs and others agreed on generalist competencies	1994	Subjective

Table 1 (cont). Articles describing GPs' educational needs assessments.

Principal author	Country of origin	Article's relevance to educational needs assessments	Year published	Assessment type
Schwartzberg JG	USA	Evaluation of the effectiveness of a CME programme on family practitioners on the subject of care of housebound elderly; pre-test and post-test design	1997	Objective
Shahabudin S	Malaysia	Assessment of competence of GPs in diagnosing anxiety neurosis using standardized patients	1990	NA
Toews J	Canada	Assessment of learning needs of GPs by questionnaire sent to family physicians about their patients with schizophrenia	1996	Objective
Ward J	Australia	Assessment of educational needs of GPs dealing with skin cancer; feasibility and values assessed	1993	Objective
Westcott R	UK	Proposal of an annual GP educational visit used to develop personal learning plans to involve learners more actively	1996	NA
Williams T	USA	Assessment of learning needs of primary care physicians through the use of a knowledge examination for CME audiences	1989	Objective

Table 2. Methods of GP objective educational needs assessment.

Method of needs assessment	Principal author	Clinical subject	Country of origin	Reference
Standardized case recall questionnaire	Davis P	Rheumatology	Canada	12
Multiple choice questions (MCQs) based on clinical vignettes	Houston HL	Child health surveillance	UK	20
Recognition of eye disorders by review of slides and answering MCQs	Jackson C	Eye disease	Australia	23
Structured oral interview	Jacques A	General medicine	Canada	21
Performance-based test for evaluating clinical skills	Jannsen JJ	Various	Netherlands	19
Case study questionnaire	Laidlaw JM	Dermatology	UK	7
Postal questionnaire	Marsden P	Diabetes	UK	14
Questionnaire before and after CME programme participation	Martin F	AIDS/HIV	Canada	10
SOI	Miller F	Various	Canada	22
Physician's performance and analysis of data from patient's records	Moran J A	Preventive care/therapeutics, etc.	Canada	39
OSCE	O'Brien MK	Cardiology	USA	17
Self-administered questionnaire	Phongsavan P	Mental illness	Australia	36
On-line survey in Internet	Richardson ,L	Various	USA	16
Self-administered questionnaire	Schwartzberg JG	Geriatric care	USA	9
Postal questionnaire	Toews J	Mental illness	Canada	13
Self-administered questionnaire	Ward J	Dermatology	Australia	8
Self-administered questionnaire	Williams T	Colorectal cancer	USA	11

development of a suitable practical programme of needs assessment. However, the difficulties faced when making definitive needs assessments of practitioners are well known and include resentment at being assessed by 'teacher-centred' and 'top-down' methods.²⁹ Therefore, the most acceptable assessment of educational need in the future is likely to be based on the performance in practice itself, as well as the methods described here. Developed assessment programmes of the future may consist of a range of assessment methods based in clinical practice and that also used a range of methods such as learning needs questionnaires, interviews, and MCQ tests.³⁰

Although the UK is well represented in terms of the publication of papers on educational needs assessment, consideration of the more limited area of objective needs assessment reveals little published literature. This is unlikely to accurately reflect the blossoming interest in needs assessment among GP tutors and course organizers. The further development of needs assessment

should be promoted in the UK, and educationalists promoting CME in this country should be encouraged to look critically at the matching of needs with educational provision.

References

1. MEDLINE database. Internet address: <http://www.nlm.nih.gov>
2. MEDLINE/BMA database. Internet address: <http://www.ovid.bms.org.uk>
3. Myers P, Mahmood K. Keyfacts as an aid to developing CME for general practitioners. *Educ Gen Pract* 1997; **8(3)**: 238-241.
4. Moorhead RG, Laurence CO. Continuing medical education needs for local general practitioners. *Aust Fam Phys* 1994; **23(10)**: 1929-1933.
5. Mann KV, Chaytor KM. Help: Is anyone listening? An assessment of learning needs of practicing physicians. *Acad Med* 1992; **67(10)**: S4-6.
6. Forrest JM, McKenna M, Stanley IM, *et al.* Continuing education: a survey among general practitioners. *Fam Pract* 1989; **6(2)**: 98-107.

Keypoints

- Developing a learning plan for a portfolio-based learning model requires an objective assessment of GPs' educational needs.
- The majority of published work on GP educational needs assessment deals with the perception of need based on a subjective assessment of learners or teachers. The assessment of educational need based on an objective measurement of GP performance using a standardized assessment tool has been described less frequently.
- Although there is a wide range of methods available to directly assess the education needs of health professionals, there is a limited literature on their application and evaluation in primary care.
- More studies of the evaluation of the educational needs assessment of both individual GPs and practices are required.

- Laidlaw JM, Harden RM, Morris AM. Continuing medical education case study series. An innovative programme for general practitioners on malignant melanoma. *Med Educ* 1996; **30(3)**: 226-231.
- Ward J, Macfarlane S. Needs assessment in continuing medical education. Its feasibility and value in a seminar about skin cancer for general practitioners. *Med J Aust* 1993; **159(1)**: 20-23.
- Schwartzberg JG, Guttman R. Effect of training on physician attitudes and practices in home and community care of the elderly. *Arch Fam Med* 1997; **6(5)**: 439-444.
- Martin F, Murphy P. Human immunodeficiency virus risk awareness. Evaluation of a CME program for family physicians. *Can Fam Phys* 1997; **43**: 1382-1387.
- Williams T, Donaldson WS. Towards the identification of CME content needs for primary care physicians. *J Cancer Ed* 1989; **4(4)**: 255-259.
- Davis P, Suarez-Almazor M. An assessment of the needs of family physicians for a rheumatology Continuing Medical Educational program: results of a pilot project. *J Rheumatol* 1995; **22(9)**: 1762-1765.
- Toews J, Lockyer J, Addington D, et al. Improving the management of patients with schizophrenia in primary care: assessing learning needs as a first step. *Can J Psychiatry [Revue Canadienne de Psychiatrie]* 1996; **41(10)**: 617-622.
- Marsden P, Grant J. The learning needs in diabetes of general practitioners. *Diabet Med* 1990; **7(1)**: 69-73.
- Boath E, Mucklow J, Black P. Consulting the oracle: a Delphi study to determine the content of a postgraduate distance learning course in therapeutics. *Br J Clin Pharmacol* 1997; **43(6)**: 643-647.
- Richardson ML, Norris TE. On-line delivery of continuing medical education over the World Wide Web: an on-line needs assessment. *Am J Roentgenol* 1997; **168(5)**: 1161-1164.
- O'Brien MK, Feldman D, Alban T, et al. An innovative CME program in cardiology for primary care practitioners. *Acad Med* 1996; **71(8)**: 893; 894-897.
- Jansen JJ, Scherpbier AJ, Metz JC, et al. Performance-based assessment in continuing medical education for general practitioners: construct validity. *Med Educ* 1996; **30(5)**: 339-344.
- Jansen JJ, Berden HJ, van der Vleuten CP, et al. Evaluation of cardiopulmonary resuscitation skills of general practitioners using different scoring methods. *Resuscitation* 1997; **34(1)**: 35-41.
- Houston HL, Reilly TA, Sibert JR, Davies DP. Child health surveillance: development of a multicentre course and its evaluation. *Med Educ* 1995; **29(3)**: 242-246.
- Jacques A, Sindon A, Bourque A, et al. Structured oral interview. One way to identify family physicians' educational needs. *Can Fam Phys* 1995; **41**: 1346-1352.
- Miller F, Jacques A, Brailovsky C, et al. When to recommend compulsory versus optional CME programs? A study to establish criteria. *Acad Med* 1997; **72(9)**: 760-764.
- Jackson C, Hirst L, Ambler JA, Battistutta D. GPs and eye skills. A brave new world? *Aust Fam Phys* 1997; **26(4)**: 409-411; 413-415.
- Marshall MN. Qualitative study of educational interaction between general practitioners and specialists. *BMJ* 1998; **316**: 442-445.
- Manning PR. Continuing education needs of health care professionals. *Bull Med Lib Assoc* 1990; **78(2)**: 161-164.
- Royal College of General Practitioners. *Portfolio-based learning in general practice*. [Occasional Paper 63.] London: RCGP, 1993.
- Westcott R. Improving continuing medical education and addressing the challenge of instituting re-accreditation. *Br J Gen Pract* 1996; **46(402)**: 43-45.
- Challis M, Mathers NJ, Howe AC, Field NJ. Portfolio based learning: continuing medical education for general practitioners - a mid-point evaluation. *Med Educ* 1997; **31(1)**: 22-26.
- Boland M. Wants and needs in continuing medical education. *Aust Fam Phys* 1997; **26 (Suppl 1)**: S53-S55.
- Hunt N, Carney RA. Identification of learning needs in general practice. [Personal communication, 1997.]
- Salisbury C. The Australian Quality Assurance and Continuing Education Program as a model for the reaccréditation of general practitioners in the United Kingdom. *Br J Gen Pract* 1997; **47(418)**: 319-322.
- Robinson LA, Spencer JA, Neal DE. Teaching the teachers - a needs assessment of tutors for a new clinical skills course. *Med Educ* 1996; **30(3)**: 208-214.
- Rubenstein LV, Fink A, Gelberg L, et al. Evaluating generalist education programs: a conceptual framework. Generalist program evaluation working group. *J Gen Int Med* 1994; **9(4) (Suppl 1)**: S64-72.
- Crozier AM. GP learning needs. *Aust Fam Phys* 1996; **25(2)**: 124-125.
- Pitts J, White P. Learning objectives in general practice identification of wants and needs. *Educ Gen Pract* 1994; **5**: 59-65.
- Phongsavan P, Ward JE, Oldenburg BF, Gordon JJ. Mental health care practices and educational needs of general practitioners. *Med J Aust* 1995; **162(3)**: 139-142.
- Kelly MH, Murray TS. Motivation of general practitioners attending postgraduate education. *Br J Gen Pract* 1996; **46(407)**: 353-356.
- Black F. External clinical teacher visits. A personal viewpoint. *Aust Fam Phys* 1996; **25(10)**: 1588-1589.
- Moran JA, Kirk P, Kopelow M. Measuring the effectiveness of a pilot continuing medical education program. *Can Fam Phys* 1996; **42**: 272-276.
- Salti IS. Continuing medical education. *Med Educ* 1995; **29(Suppl 1)**: 97-99.
- Black F. 'You show me yours and I'll show you mine'. A new CME option - learning from your own consultations. *Aust Fam Phys* 1994; **23(9)**: 1788-1790.

Address for correspondence

Dr Paul Myers, Western Road Medical Centre, 99 Western Road, Romford, Essex RM1 3LS.