CLINICAL TEACHER

A systematic review of teaching and learning in palliative care within the medical undergraduate curriculum

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SUMMARY End of life care or palliative care has been acknowledged as important over the last 30 years and it is essential that doctors have core training in palliative care during their undergraduate training. There is little knowledge of the nature of teaching of palliative care within the undergraduate curriculum. This review was undertaken to determine the evidence to create an effective and appropriate undergraduate curriculum in palliative care. All relevant databases were electronically searched from 1966 until 2001 and selected contemporary work included. Key authors were contacted and grey literature and conference abstracts were searched. Efforts were made to quality grade any evaluation studies of teaching, learning and assessment.

Two hundred and eighty abstract citations were obtained—192 papers were excluded due to lack of relevance to this study. Eighty-eight abstracts were obtained and forty-nine papers included in the review. There were no randomized controlled trials of educational interventions or open effect studies. All studies included were descriptive and were graded as level of evidence C. The main findings include lack of consistency in what undergraduates are taught about palliative care. Teaching tends to be fragmented, ad hoc and lacks co-ordination. There are difficulties in recruiting appropriate teachers. Palliative care is rarely formally assessed. Teaching focused more on the acquisition of knowledge and skills rather than attitudes. It is suggested that guidelines should be established within each medical school to develop an integrated curriculum for palliative care with due reference to the multidisciplinary nature of palliative care.

Introduction

End of life care or palliative care has become increasingly important over the last 30 years. Historically, palliative care has been confined to the care of patients dying from cancer and a few other diseases e.g. Motor Neurone Disease and AIDS, but recent papers and reports (Eve & Smith, 1996; Addington-Hall & Altman, 2000) have identified the need for all patients with chronic life threatening illness to have access to palliative care. Thus all doctors will encounter patients with palliative care needs—over 90% of hospital beds are occupied by patients with chronic life threatening disease and over 40% of all deaths occur in hospitals. In order to provide palliative care for all patients, who may require it, it is essential that doctors obtain core skills in palliative care during their undergraduate training—a finding identified in the UK by the General Medical Council in the document Tomorrow’s Doctors (1993). Despite increased education and teaching in palliative care (Merrman et al., 1991; Macleod & James, 1997; Dickinson & Mermann, 1996; Dickinson, 2002; Field & Wee, 2002; Dickinson & Field, 2002), junior doctors still report that this is the area in which they feel most unprepared and which causes them the greatest distress (Field & Howells, 1988; Tiernan et al., 2001).

When should medical students be taught palliative care—does the timing and sequence of teaching have any influence, and in what context should palliative care be taught, were themes identified by papers on teaching. Classically the order in which subjects are presented implies that completion or mastery of those subjects is required for success in later subjects. Unfortunately there is little evidence to support this view. Much of what happens in parts of medical training is possibly educational habit or custom, and in fact in those schools that have developed problem-based approaches to learning, this ‘theory’ has been dismissed. The timing of teaching about palliative care, although not adequately researched has attracted attention and there is widespread variability between schools in the way this is dealt with. Mastery of a particular subject means achieving a degree or success at a predetermined educational objective. It implies an objectives-based approach (a listing of components to be learned) and the competency levels must be worked out in advance. Frequent assessment of learning is needed and becomes an essential component of the programme.

There is little understanding of the nature of teaching of palliative care within the undergraduate curriculum. This review was undertaken to determine the available evidence for what is currently delivered within undergraduate curricula in palliative care.

Methods

The review search was for papers published between 1966 and December 2001 related to undergraduate medical education in palliative care.

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Criteria for inclusion

- Criteria for considering studies.
- Types of studies. The authors acknowledged at the preliminary stage that it would be unlikely for randomized controlled trials in the area of palliative care undergraduate teaching, and therefore all relevant studies would be included if they satisfied all the other criteria.
- Types of participants. Undergraduate medical students.
- Types of interventions. Interventions included, various teaching methods, methods of assessment and methods to identify student’s learning.
- Types of outcome measures. The definitive outcome measures were the impact of teaching on medical students’ abilities when they become junior doctors—again it was recognized at the outset that such longitudinal studies may not be available and therefore descriptive studies were included.

Criteria for exclusion

UK graduate training, continuing medical education, practice based learning (PBL), GP registrar teaching, technology based studies, US residency programs, US family practice clerkships were excluded. All relevant international papers were included but were confined to those published in English. Letters and discussion papers were not included, but two review papers (Oneschuk et al. 2000 and Weissman, 1999) were included for snowballing.

Search strategy

A search strategy was developed which included the resources to be searched and the key words that would be used. The search strategy was conducted using an explicit and reproducible methodology. Systematic literature searches were carried out using all relevant electronic databases from 1966 to the present day. This included primary sources such as Medline, Cinahl, Embase, PsychInfo, ISI Web of Science, ERIC, the British Education Index, Education Online and the National Research Register. Secondary sources included the Cochrane Review database, Munich Campbell Collaboration database and BUBL information service.

Grey literature and unpublished articles were obtained by searching SIGLE and FADE and by contacting experts in field. Conference proceedings were searched for using ISI Proceedings and ZETOC. Key journals were hand-searched and key experts were contacted. The Association for Medical Education in Europe (AMEE) and the Association for the Study of Medical Education (ASME) were also contacted for any additional information they may have had available.

The following search headings were used; Education; Medical; Undergraduate; Schools/medical; Curriculum or medical training; Palliative care; Terminal care; Hospices; Teaching; Learning; Assessment.

The research results were reviewed by assessing titles and abstracts to determine whether each article might meet the inclusion criteria. Where the information available determined that an article did not meet the inclusion criteria, it was rejected. Where the title and abstract left doubt, the text of the article was retrieved. All citations at this stage were entered into the bibliographic database. A subset of relevant citations was identified using this method and further papers were identified by citation ‘snowballing’—that is by checking the reference list of previously obtained articles until the point at which data saturation was reached i.e. no new references are identified.

Procedures were generated for data extraction based on the methods developed by Hawker et al. (2002) and efforts were made to quality grade the included papers although it was difficult to define what is or is not a quality study as this seemed to be a very subjective concept but quality constructs were based on methodology, bias, internal validity and external validity which led to a hierarchy of studies. The results of the data extraction were collated under pre-identified themes in a systematic way using an Access database.

Results

A total of 280 abstract citations were obtained using the above search strategy. There was considerable overlap of papers being cited under more than one index and a significant number of papers reporting the same study twice in different publications. 192 papers were excluded due to lack of relevance. Of the remaining 88 papers which were obtained, 43 were reviewed for quality criteria. The vast majority of papers (80%) were from North America and USA with an equal number from UK and Australia/New Zealand—there were no papers from Europe. There were no randomized controlled trials of educational interventions or open effect studies. All studies included were categorized as descriptive. Due to the heterogeneity of the studies, a formal meta-analysis was not possible and the findings are presented in narrative form.

Studies of need for palliative care education—is it important?

Specialist palliative care i.e. that provided by hospices and specialist palliative care units, is only required by a small number of patients. It is the holistic and palliative approach to care that is required by the majority of patients. Marcer and Fenton (1988) made a plea for multidisciplinary palliative care education to be included in the UK curriculum by looking at the provision of education in the management of cancer pain. Block and Billings (1988) cited the brief time and scant attention given to palliative care education in North America and the USA at that time.

Two similar discussion papers (Jette, 1996; MacLeod, 1997) reinforced the impact that teaching palliative care in the undergraduate curriculum can have on medical students; however, no mention is made as to whether such experiences permanently influence the physician’s attitudes to patients who are terminally ill.

What is the best context or time to teach palliative care?

Surprisingly there is little to support the view that palliative care education should begin early in the pre-clinical years. This was a view eloquently outlined by Barnard et al. (1999) in their paper identifying basic end-of-life care competencies in five domains that will encourage medical students to
provide optimal care to patients near the end of life, as well as to patients in general. An innovative approach from the United States was described where palliative care was taught as a component of an end of life care module within the context of intensive care and emergency medicine (Danis et al., 1999). In this arena many of the decisions are concerned with withdrawal or withholding of life supporting treatment and the ethical dilemmas and conflict within a multidisciplinary team can be great. The paper suggested that using the palliative care approach could help students learn the options available and how to facilitate such decisions as part of a team.

Weissman and Griefie (1998) report on the University of Wisconsin palliative care curriculum, which is integrated into all areas of the undergraduate curriculum, in both acute and community settings. It comprises a course for second year medical students; an elective course for third and fourth years with further provision of seminars for house staff. There is no mention of evaluation of this integration but the authors believe such integration raises the profile of palliative care across all specialities and makes the principles apparent to students.

What should be taught—the curriculum?

Nine papers were identified which addressed the content of undergraduate curricula—again these papers were all descriptive, outlining what had been carried out in a particular university or a survey of the palliative care curriculum of a specific country.

One of the earliest papers to address this (Irwin, 1983) describes an interdisciplinary course, which had been running for 6 years—the objectives of what the author calls the "terminal care" aspect. Five papers (Macdonald et al., 2000; Dickinson & Mermann, 1996; Billings & Block, 1997; Barzansky et al., 1999; Barton & Simons, 1999) are questionnaire surveys establishing whether objectives are used in curriculum development.

Five papers were identified which reported objectives being set for medical training in the care of patients at the end of their lives (Macdonald et al., 1993; Forbes, 1994; Schonwetter & Robinson, 1994; Grauel et al., 1996; Ury et al., 2000). Ury et al. (2000) evaluated a needs assessment for a curriculum in palliative care in one teaching hospital in the USA. A number of methods of obtaining information included an anonymous survey, focus groups, topic rankings and individual interviews.

Medical (including recently qualified interns) and nursing staff, academic staff, patients and families were all included. At the time of their survey in 1995, there was no palliative care education programme and no defined electives in the specialty, therefore individual students’ exposure was limited and variable. The results from the interns particularly identified the need for formal education in this area, which included specific symptom management, communication skills and ethical issues.

Schonwetter and Robinson’s paper (1994) is based on working out objectives for palliative care teaching on a survey of the members of the Academy of Hospice Physicians. A Delphi type approach was used whereby 30 objectives based on knowledge, skills and attitudes, were initially devised by a small working group then circulated to physicians who were invited to rate each objective as −1 (inappropriate), 0 (unsure) and +1 (appropriate). Congruence analysis was used to provide an index of the importance and validity of each objective. The paper reports that 34 of the 39 objectives were validated. Highest ratings were given to skills followed by knowledge and then attitudes. Important skills included multidisciplinary team working, communication and ethical issues. The objectives for knowledge were in favour of physical symptom control. Attitudes included such items as describing the determinants of suffering and discussing death as a normal part of the living cycle etc. The invalid objectives related to religious and fiscal issues.

Macdonald’s paper uses evidence from the USA, Canada, Australia, United Kingdom and Europe to develop a curriculum in palliative care. The curriculum working group consisted of medical specialists involved in teaching at each of the Canadian medical schools. Each school had previously agreed that a teaching block would be given to palliative care whilst recognizing that many of the principles would also be addressed in other teaching blocks. The committee elected to develop objectives that met the three areas of attitude, skill and knowledge. The curriculum was divided into main areas of symptom control, psychosocial issues and what were termed ‘fundamental issues’ (ethics, home care and quality assurance). The paper stated that the palliative care component of the curriculum should be assessed and that assessment of palliative care will send “a powerful message to students, which will assist them in their priorities”. Although Canada appears to have a number of palliative care medical staff working with universities, the paper also states that in order for a curriculum to be developed an academic palliative care base is essential.

Forbes (1994) looked at the principles of developing a curriculum in what he termed “supportive care”. He defined principles, which he believed essential for the teaching of palliative care, which included:

1) Reduce the factual knowledge to relevant and essential core information.
2) Use small groups for problem based learning.
3) Include multidisciplinary teaching.
4) Involve all team members and the patient in the teaching.
5) Integrate teaching and combine disciplines and principles throughout the curriculum.
6) Foster reflective learning.
7) Regularly review and improve methods of teaching and assessment.

The paper suggests that communication skills are the key to effective palliative care. The paper also includes sections on how to teach, the selection of teachers, the importance of enthusiastic teachers who are practising what they are teaching, the advantages of using small group teaching and developing skills in problems solving and problem-based learning. Teaching in the author’s medical school (Newcastle, Australia) was primarily during the oncology block in the final year, but observations were made that teaching should be undertaken in other contexts. The paper commented that where no assessments take place, students are left with uncertainty as to the values of that they are being taught.

Grauel et al. (1996) outline the experience of developing a curriculum at the University of Maryland, USA. The
American Board of Internal Medicine had carried out a review stating the importance of palliative care education in the undergraduate curriculum giving the area a priority in curriculum development. The working groups given the task of establishing a curriculum, were a multidisciplinary team including an educationalist. The team used task analysis to define their objectives—a process to determine what behaviours students should be demonstrating after the end of the programme. These behaviours were identified as professionalism, medical competence, psychosocial elements, and hospice care. The behaviours are aimed at developing positive attitudes towards terminally ill patients, to appreciate the palliative care multidisciplinary approach and to synthesize both clinical and interpersonal skills. The authors aim to validate the programme by means of measuring gains in student behaviour against a baseline of performance and a survey of student satisfaction and also patient and family satisfaction.

Who should provide the teaching?

As in all forms of medicine, enthusiastic and knowledgeable teachers are essential—palliative care is a small field—those who are enthusiastic teachers are frequently very busy clinicians or they may also be researchers, and their time is consequently limited. Enquiry into hospice doctors’ education and training in teaching methods/styles revealed a large majority who had experienced no formal training in this area (MacLeod, 1992).

An interesting model of teaching was reported from Australia (Barrington & Murrie, 1999) using nursing preceptors. Medical students were attached to experienced nurses during their standard nursing shifts. The experience was reported positively, by both nurses and medical student groups, and an attempt to evaluate the experience utilized a visual analogue scale to determine medical student confidence levels in aspects of palliative care. The focus was on establishing a multidisciplinary approach and to synthesize both clinical and interpersonal skills. The authors aim to validate the programme by means of measuring gains in student behaviour against a baseline of performance and a survey of student satisfaction and also patient and family satisfaction.

Impact of learning

Ten papers were identified which looked critically at the impact of palliative care teaching on medical students (Mason & Fenton, 1986; Knight et al., 1992; Rapport & Witzke, 1993; Dickinson & Tourneir, 1994; Ogle et al., 1997; Ross et al., 1997; Kaye & Loscalzo, 1998; Hayes et al., 1999; Seligman et al., 1999; Dickinson et al., 1999). Mason and Fenton (1986) described how palliative care teaching was organized as part of the human behaviour module and consisted of two one-hour lectures and a three-hour symposium in the second year of the course. Teaching was extended to include an additional three-hour symposium on pain control and an interdisciplinary fourth year symposium to recap on what had been learnt. Their paper reports evaluation by the first cohort to receive this additional teaching. The questionnaire which enquired about demographics, included 25 true/false questions to test the cognitive aspects and five questions to assess attitudes using a four-point Likert scale. Sixty-eight students were involved in this programme and 74% participated in the evaluation study. The responses were positive to the placement and the impact it had on their subsequent care of dying patients especially in the understanding of the holistic needs of these patients. Two papers (MacLeod, 1993; James & Macleod, 1993) report on the findings of a project of teaching palliative care to medical undergraduates within a hospice and also highlight some of the issues regarding multidisciplinary teaching.

The role of hospices

Hospices would seem to be an ideal model in which to base palliative care teaching—they provide a focus for palliative care and enable students to learn a multidisciplinary approach to care. Drawing on experiences of one hospice where first and second year students were allocated a weekly hospice placement as part of their introductory clinical course, Franks (2000), reported that this was a positive experience for all parties. Patients greatly enjoyed speaking to the medical students and felt they were contributing something useful when they were so debilitated and could do so little in other ways. Students also found the placement valuable and enjoyable and gave it a positive rating.

A week’s hospice placement composing of didactic and clinical learning was highly evaluated by students in the USA (Steen et al., 1999).

It is more important to consider the content and nature of teaching rather than the mere length, but courses from one day to seven days have been identified as being useful to students (Latimer et al., 1999; Martin & Wylie, 1989). Seligman et al. (1999) studied the impact of a hospice placement on practising physicians. They were all former students at the University of Colorado medical school who were sent a questionnaire after a five-year period and had elapsed since the development of their palliative care programme. The programme contained an elective in which five students per year could choose to participate. This two-week hospice elective consisted of seminars, lectures and interactive teaching together with attending interdisciplinary care team meetings. Students admitted were required to be present at one day at least. The questionnaire comprised sixteen items on a four-point Likert scale. Sixty-eight students were involved in this programme and 74% participated in the evaluation study. The responses were positive to the placement and the impact it had on their subsequent care of dying patients especially in the understanding of the holistic needs of these patients. Two papers (MacLeod, 1993; James & Macleod, 1993) report on the findings of a project of teaching palliative care to medical undergraduates within a hospice and also highlight some of the issues regarding multidisciplinary teaching.
additional teaching, students believed that terminal care was an area where satisfaction as a doctor would be low.

It is important to have a baseline measure of the attitude of the students prior to the teaching exposure. The paper by Knight et al. (1992) reported a study to determine the effect of a 16-hour hospice rotation of didactic and small group teaching within a hospice environment. Objectives were defined at the beginning of the attachment and included students being able to describe the philosophy of hospice care, describe effective pain management and physical symptom management, and recognize psychosocial distress, spiritual distress and normal and abnormal grief. The objectives were measured on 65 fourth year students using pre- and post-exposure likert scales consisting of a number of statements. Students gained in knowledge the principles and philosophy of care and also exhibited more positive responses towards patients with advanced metastatic cancer at the end of the rotation (a finding that was confirmed by MacLeod and Nash (1992) in their work with GPs and GP trainees in England and Wales). What was not discussed was whether this effect was sustained into the final year of undergraduate training and indeed the early years of working as a doctor.

Dickinson’s studies reported in 1994 and 1999 followed a cohort of undergraduates from 1976 and found that over time graduates reported greater confidence which suggested greater openness in communication. It is not apparent whether or not the mode of teaching had impacted on this change or whether such graduates had accessed further educational courses in palliative care for example. Rapport and Witzake (1993) used a questionnaire approach to evaluate learning in death and dying of all third year clinical (final year) medical students at the University of Arizona. In a survey of 180 students (59% response rate), all students had cared for a patient who was dying by the end of the third year of medical school and 83% had discussed with patients their diagnosis or prognosis. General medicine and surgery offered the most opportunities for learning in this area. When a patient was discharged home, one third of the students could not identify the problems that such patients may face and 57% felt they were ill prepared to care for a patient with a life threatening illness when they completed medical school.

Evaluation of undergraduate pre-clinical teaching, was carried out by Ross et al., at the University of Maryland, School of Medicine. The module was entitled “The role and the responsibility of the physician in palliative and end of life care: the interdisciplinary team approach”. Teaching consisted of a didactic 30 minute lecture followed by a 30 minute video after which students were divided into small groups for a two-hour period to discuss hypothetical case studies. The course was given to all freshmen medical students. Responses were measured on a four-point scale. The results indicated that more that 70% felt that end of life care could be rewarding and that 90% felt that the three components of the teaching had helped them appreciate their own future roles in providing such care.

Kaye and Loscalzo (1998) aimed to evaluate the effect of learning longitudinally at the Philadelphia School of Medicine. The authors recruited 99 course participants and 92 controls and used the Collett-Lester fear of death scale in what they described as a semantic differential technique to measure attitude towards the care of dying patients and their families. Evaluations were repeated at the end of the course and annually for 4 years. Students were recruited who had undertaken an elective module conducted by the school of humanities with the overall objective to study the ethical, emotional and cultural aspects of death and dying. Sessions included a variety of didactic teaching together with small group and interactive discussion. They found a consistent positive impact of this course with those who studied the module having sustained positive scores throughout their medical school course.

Hayes et al. (1999) looked at the ethical issues involved in end of life care. All third year medical students at Emory Medical School in Atlanta, were required to enrol on a medical ethics course as part of their clinical clerkship year of training. The overall objective of this course was to improve the ethical decision making of physicians in end of life care—the course consisted of 40 hours of predominantly preceptor lead seminars. The survey consisted of asking students to rate the level of importance given to certain areas on a 1–5 scale corresponding of “unimportant” to “very important”. The study of 104 students had a 92% response rate—the study found that clinical students received limited exposure to end of life decision making during their clinical clerkship but that the course helped them to become more aware of the issues involved, allowing patients the right to be involved in this decision making process.

Assessment of palliative care education

Only one paper was identified which addresses assessment (Irwin, 1984). Irwin’s paper appears to be one of the first in the field of palliative care education to identify methods of teaching and assessment. He states clearly which professionals are involved in the interdisciplinary teaching in palliative care—representatives from the departments of primary care, geriatric medicine, oncology, psychiatry and the clergy. The objectives of the course are clearly stated to the teachers—the 50 students were divided into small groups and were encouraged to read background material prior to the session; two facilitators, a doctor, and a clergyman facilitated the group. The session and cases included the areas of attitudes to terminal care, knowledge of methods of symptom control and psychosocial aspects of care and interdisciplinary and multidisciplinary working. The learning was assessed at the end of the 12-week course (which included areas other than palliative care) and was in the form of short answer questions with oral examination for those who were “borderline” or who failed. Irwin reports that the questions were generally answered well with few failures and that the teaching was highly rated—the marks for this assessment were included in the final examinations.

Discussion

This review suggests that there is little consistency in what medical undergraduates are taught about palliative care and what teaching there is tends to be ad hoc and is rarely assessed.

Although in the UK and USA, there is much emphasis on the integration of the clinical and pre-clinical curriculum, there is still wide variation as to where in their undergraduate
training, medical students are taught about palliative care. Indeed the question is “when is the most effective time for palliative care to be taught?” Does theoretical teaching early in undergraduate training, allow students to develop deeper knowledge and skills when they are exposed experiential to palliative care patients during their clinical years?

Most medical curricula include some teaching on ethics and it may be more appropriate for that to be included early in the curriculum, possibly in the first year and for more formal teaching in palliative care to be placed later. Clinical teaching could ideally be during all years of the medical curriculum—each placement potentially includes opportunities for caring for patients with chronic life threatening illness and allows the palliative care approach to be incorporated.

The issue of who should teach palliative care is one that is mentioned frequently in papers. Palliative care is a multi-disciplinary entity—the care of the patients requires the skills of many different people and an awareness of this team approach is essential for medical students. There is an increasing call for medical and nursing students to be taught together for certain aspects of their undergraduate training and palliative care would lend itself ideally to such learning with both medical and nursing students learning from each other.

There is little discussion in the literature on the process of learning and which teaching methods are most effective; this suggests that much of this research is yet to be carried out in palliative care education. One of the central tenets of professional development is enhanced performance. Schon (1987) used experience as the critical piece of performance to understand how a professional’s knowledge changes with what he terms a “reflective practice”’. Professionals develop a specific knowledge base to formulate and generate their professional work. Experience allows that knowledge base to expand in ways that cannot be readily linked to traditional teaching methods. Reflective practice proposes that problems are often not clear or well defined and it is those intermediate steps that help in clarification of problems and the development of solutions or new strategies for action. Students work on specific professional problems standing alongside a professional as teacher in that area. Schon also talks of the “right kind of telling” that takes place when students work closely with their teacher to learn how to frame the questions and to respond in an appropriate manner. A recent paper (MacLeod et al., 2003) has discussed how an emphasis on personal reflection has transformed the approach taken by medical students when learning about how to care for patients who are dying. In identifying how a programme affected student learning, they found that actual encounters differed from the medical students’ anticipation of them. Students identified an emotional component to the experience; they explored their own and the patient’s understandings of spirituality; they reflected on personal meanings of the encounter and they suggested ways in which they may learn to care for people who are dying, more effectively. Their work suggests that the way in which many students approach end-of-life care was altered through a transformative educational experience that encouraged them to draw on their own experiences and skills.

This review suggests that most emphasis is placed on the teaching of attitudes to dying patients within undergraduate curriculum. It is important that doctors realize that patients who are at the end of life, need and deserve as much of their skill and attention as those who are curable. It is the intern or the house officer who provides the majority of the care for patients who are in the final stages of their illness and it is important that they have learnt the core skills and knowledge to care for these patients adequately.

How could learning in palliative care be assessed? Many elements of palliative care will lend themselves to inclusion in multiple-choice questions but also some centres have developed OSCE stations and are undertaking OSLER examinations in this field. The use of skill labs are being developed alongside observed or videotaped consultations with patients or actors as an additional form of assessment. Students can also be examined/formally assessed during their hospice or palliative care placement.

We would suggest that a palliative care curriculum needs to be devised with due reference to the multidisciplinary nature of palliative care with teachers drawn from medical staff, nursing, social work, community, voluntary agencies, and chaplaincy. The development of more academic departments of palliative care would facilitate palliative care teaching.

Recommendations for teaching could include:

- Ensure that actual knowledge and essential core information is taught;
- Use small groups for problem based learning;
- Include multidisciplinary teaching;
- Involve all team members along with the patient and family in the teaching;
- Integrate teaching and combine disciplines and principles throughout the curriculum;
- Foster reflective learning;
- Include ethical and legal issues of relevance to end of life care;
- Ensure that students have effective mechanisms to deal with the professional and personal pressures of this aspect of their work.

Reflective learning has been identified as important—MacLeod (2001) reported that doctors identified turning points in their learning when they first perceived a notion of what it meant to care for a patient who is dying. Teaching could be incorporated into both the pre-clinical and clinical curriculum. During the pre-clinical years, teaching could focus on attitudes to palliative care with clinical years aiming to integrate palliative care to ensure it is not taught purely in the context of caring for patients with end stage cancer.

It is important that objectives are identified for the core aspects of palliative care which medical students need to be taught. These could include knowledge and skills of physical symptoms, for example, the assessment of pain and the prescribing of analgesia. Objectives should also recognize that the psychological, spiritual, and social aspects are integral to palliative care and are of equal importance and intimately related to physical symptoms.

Conclusions

Caring for patients at the end of life can be one of the most rewarding aspects of being a doctor. It is an opportunity to use knowledge and skills as part of a team. Medical students
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