

IN BRIEF

- This paper has demonstrated that the GKT Diploma in dental sedation has enabled practitioners to develop and use operator sedation techniques in dental practice.
- Students who have attended the course have shown a commitment to training others and a team approach to the provision of sedation.
- Students demonstrated the value of sedation in the provision of all aspects of dental care.
- The study identified a need for a clinical mentored training program at an interim level between the diploma course and a short two day course.
- The use of sedation techniques by students in the community dental services has helped to provide a valuable strategy of pain and anxiety management in response to problems resulting from the reduction of general anaesthetic services in the community.

The GKT diploma in dental sedation – A judgement

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Aims and objectives: The use of sedation in the management of pain and anxiety for the provision of dental care is as vital to the dental profession as are windscreen wipers to a motor vehicle. Not for use on every patient or every occasion, but in times of need to wipe away the tears, and essential for effective work. Training in sedation techniques should be a part of the undergraduate curriculum, and postgraduate opportunities need to be developed to support this important aspect of care. This paper examines a particular training course provided within the Department of Sedation and Special Care Dentistry at GKT Dental Institute, King's College London, leading to the Diploma in Conscious Sedation for Dentistry (Dip.D.Sed). The aim of this study was to investigate what impact the course has had on the practice of sedation. Three objectives were defined: 1) Students' evaluation of the course; 2) Students' practice in sedation prior to and on completion of the course; 3) Students' involvement in sedation training of dentists or dental nurses following completion of the course.

Method: Information was obtained by postal questionnaire from students who had attended the course since its inception in 1997 to 2000.

Results: 30 students completed and returned the questionnaire which represented a 100% response. There was an overall expression of satisfaction from students on the course content and the experience they had obtained. The range of experience was 70–100 treatment episodes over 40 clinical sessions. An increase in both the practice of sedation and the involvement in training (dental nurses and dentists) was also shown. The greatest clinical change was the increase in use of intravenous sedation by the students from the community dental service.

Conclusion and recommendation: This study concluded that the objectives of the course had been achieved. The importance of providing training that enables the safe and effective provision of sedation within primary care as an operator sedationist was strengthened by this study. The value of an intermediate level between the two day section 63 course and the six month diploma course was suggested by students in this study. The development of a clinical attachment based on The Standard Course in Conscious Sedation was proposed as a possible option to fill the gap. The provision of postgraduate training in sedation is limited particularly in some areas of the UK. This problem should be addressed by increasing the opportunity for postgraduate training in sedation by dental schools and postgraduate deaneries. Work towards increasing the funding and opportunities for training in this important area of care needs to be undertaken.

INTRODUCTION

The management of pain and anxiety is an essential and routine part of the practice of

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dentistry.¹ The experience of providing dental care for the patient who is anxious presents itself to clinicians working in all areas of dental care. The profession must therefore provide dentists and their teams with a range of skills and management techniques in order to be able to provide good patient care.

Behavioural management techniques are traditionally acquired by the undergraduate through lectures and practical experience gained whilst treating anxious adults and children. Training in conscious sedation may also be provided in this way, but many dental schools do not yet provide adequate

clinical experience and so skills are often acquired through attending postgraduate courses.

In November 1998 the General Dental Council issued new guidelines on the use of general anaesthesia in dentistry¹ emphasising the need to consider alternative techniques such as behaviour management and/or sedation before a decision to treat under GA is taken. In 2000 the Department of Health produced a report titled 'A Conscious Decision'² which effectively removed the provision of general anaesthesia from the primary care setting. This represented part of a changing attitude to the introduc-

tion of clinical governance initiatives within the medical and dental professions.³ Concern about safety and standards in the provision of general anaesthesia for dental care has become widespread in the profession⁴ for some time and consequently resulted in the restriction of this aspect of care to hospitals.

As a result of these events and the changes in regulations for the provision of general anaesthesia, the development and increase in the use of conscious sedation in recent years has been at the forefront of the dental profession's work.² The regulations and recommendations for conscious sedation set by the dental profession have been recognised to be of the highest standard by our medical colleagues.⁵

The use of inhalation and intravenous sedation have been shown to be safe and effective techniques.⁶ Training in sedation techniques should be provided at undergraduate level,⁷ however curriculum demands have influenced the students' achievement of even a basic standard of competency.⁸

Postgraduate education as provided by the deaneries, royal colleges, dental schools and other organisations (eg The Society for Advancement of Anaesthesia in Dentistry) offer a variety of options, however the level of training and experience is also variable.⁹ For example, a student who has attended a course consisting of one day per week for six months during which all sessions are devoted to the provision of clinical treatment using conscious sedation techniques would be expected to be equipped to confidently provide sedation as an operator/sedationist within the primary care setting. Alternatively someone attending a one or two day theory course may expect initially to be able to undertake sedation only under direct supervision. This would particularly apply in the case of intravenous sedation. The Dental Sedation Teachers Group (DSTG) provide current information on postgraduate training leading to diplomas and certificates.¹⁰ Information on section 63 courses is also available through local deaneries.

In order to increase the effective use of sedation in primary care, training should be more widely available.¹¹ Transferring evidence-based care to practical experience for the benefit of patients is important and has been addressed by McGlone *et al.*¹² It would seem self-evident that students attending a postgraduate course would intend to use skills obtained on completion of their training. It is suggested that the effectiveness of a course may be evaluated on the basis of a measurable change in the practice of the qualifying students. In some cases this may also require a change in attitude towards clinical practice and factors

other than just skills may exist that provide a barrier to the use of sedation. These may be:

- Appropriate referral from colleagues.
- Terms of service conducive to provision of sedation.
- Support and encouragement from medical and dental colleagues.
- The opportunity to gain experience in a supported environment.

Ideally such training courses should not only provide the necessary knowledge, skills training and experience but should also motivate and enthuse students to overcome the barriers that they may face in the practice of sedation. In order to explore these concepts it was felt useful to examine the practices of dentists who had completed the course leading to the Diploma in Conscious Sedation for Dentistry in the Department of Sedation and Special Care Dentistry at GKT Dental Institute London.

AIM AND OBJECTIVES OF THE STUDY

The aim of the study was to investigate what impact the course had on the practice of sedation.

Objectives

From this study the following information would be available:

- The student's evaluation of the diploma course.
- The student's sedation practice prior to and on completion of the diploma course.
- The student's involvement in training of dentists and dental nurses.

COURSE DESCRIPTION

The Diploma in Conscious Sedation for Dentistry¹³ was started in January 1997. It is based at the Guy's campus of GKT Dental Institute within the Department of Sedation and Special Care Dentistry. During 1997 and 1998 there were two intakes (January and July). From 1999, due to increased undergraduate teaching commitments, there has been a single intake each January.

The principal aim of the course is to provide a level of training and experience which will enable the provision of safe and effective conscious sedation in addition to promoting the operator/sedationist approach to sedation for the dental team in primary dental care. The clinical teaching part of the course runs over a six month period and at the time of conducting this study was the total length of the course.

Current arrangements for changes in the course are being made so that it will be extended to nine months with no change in the clinical teaching component. Students

are accepted following interview and must have full General Dental Council registration. An interest in the practice of sedation is important for acceptance on the course. The qualification awarded on satisfactory completion of the course (Diploma in Conscious Sedation for Dentistry DipDSed) recognises a satisfactory level of academic and practical skill and clinical competence. The student attends one day per week during which exclusively clinical work is undertaken. This provides 40 clinical sessions with a range of 70-100 treatment episodes using sedation. In addition 10 formal teaching sessions are arranged throughout the course.

Clinical experience involves the provision of dental care to patients receiving sedation, either intravenous or inhalation, and a high level of commitment is given by staff to ensure that students gain varied and extensive clinical experience. The use of oral and/or intranasal techniques are also taught within the department and at an outreach clinic involving the care of people with disability. In addition students complete one essay per month, a project, and theoretical, oral and practical examinations at the end of the course.

METHODOLOGY

The sample comprised those students who had attended the Diploma in Conscious Sedation for Dentistry course at GKT since its inception in 1997 until and including those students who completed their training in 2000. The total student group was 30 and information was obtained by postal questionnaire. The questionnaire consisted of a mixture of closed and open-ended questions, 25 in total. A response rate of 100% was achieved. The data was analysed by hand and expressed numerically being a small sample size.

RESULTS

Of the 30 students 19 were male, 11 female with an even distribution by age between 25-49 years. Seventeen students worked in general practice (including three with hospital attachments) and 13 in the community dental service, including one with hospital attachment and one within PDS.

Student evaluation of diploma course

Nineteen out of 30 were satisfied with the topics covered by the diploma course. The remaining 11 listed a range of topics that they felt were not adequately covered. These included sedation for special care patients, alternative sedation techniques such as propofol infusion, intranasal midazolam, hypnosis, paediatric sedation, medicolegal aspects, Advanced Life Support, sedation in the general dental services and molar endodontics under sedation.

Only four people thought there were any unnecessary areas covered by the course: three students cited the project and one felt that they did not need to cover local analgesia.

Looking at the balance of theory against practical aspects of the course, again only four people felt that the balance was incorrect. All of these suggested more lectures, tutorials and group discussions but they did not want this at the expense of reducing the clinical time.

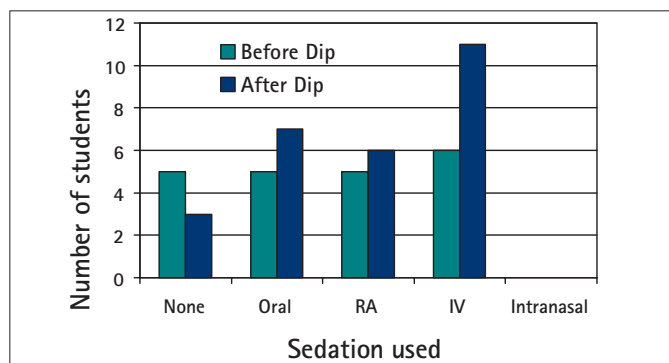
Twenty-two people felt the diploma course was the right length. Of the remaining eight, all thought the course could increase to incorporate more theory and practical or to give longer for project completion. An additional two or three months was suggested.

When asked what they felt would improve the current diploma course, many of the suggestions were related to inclusion of topics previously mentioned as not having been covered adequately. Some students were keen for the qualification to be registered with the General Dental Council. It was suggested that a different level of qualification (certificate) that would not include a project, may be an alternative option.

Clinical practice

Students were asked if they had practised sedation prior to attending the course and what changes they had made in their clinical practice following completion of the course. While 20 out of 30 students were using sedation prior to starting the course, there were variations with regard to specific techniques used. (Fig. 1) Similarly variations existed between the community dental service and general practice (Figs 2 and 3). Information was not requested on individual students' degree of experience; however, it was considered self-evident that this would not

Fig. 2 Changes in sedation practice of those working in the GDS (n=14).



be extensive or the student would not be attending such a course.

Twenty-seven out of 30 students felt that doing the diploma had changed their clinical practice. The remaining three students were not practising sedation due to restraints in their current working environment within the General Dental Services. The changes, as shown in Figure 1 below, reflect an increase in oral, inhalation, intravenous and intranasal sedation, with the greatest increase being in the practice of intravenous sedation.

Interestingly, when looking at the changes of those working in general dental services (Fig. 2) and those in the community dental service (Fig. 3), the results show a greater increase in the practice of sedation of those in the CDS when compared with those in the GDS. All those working in the CDS are now using both inhalation and intravenous sedation and they are the only ones to be using intranasal sedation.

Most of the students who are practising sedation provide routine conservation (27) and extractions (26) as seen in Figure 4. Twenty-two provide periodontal treatment, 21 crown and bridgework and root canal therapy, 20 minor oral surgery and 16 prosthetic treatment. Only those working in the GDS or hospital service were pro-

viding implants (3). One of CDS' staff reported using sedation for examination of special care patients and inhalation sedation for taking orthodontic impressions.

Of the 27 students currently providing sedation, 26 were now accepting referrals. However, although all but one person working in the CDS accepted referrals, they only did so from the local area, whereas half of the GDS staff would accept referrals from anywhere.

Sedation training

Since completion of the course only nine people had attended further updates and these tended to be professional group meetings eg Dental Sedation Teachers Group, Association of Dental Anaesthetists, Society for the Advancement of Anaesthesia in Dentistry. Nearly all past students (29) expressed an interest in attending an update study day. Students were asked if they felt there was a need for an additional level of training between the single/two day courses and the level provided by the Diploma in Conscious Sedation for Dentistry. Seventeen of the students considered such an intermediate level would be of value and suggested a variety of course designs. The most common suggestion was a five-day theoretical component and a clinical attachment of five to 10 days.

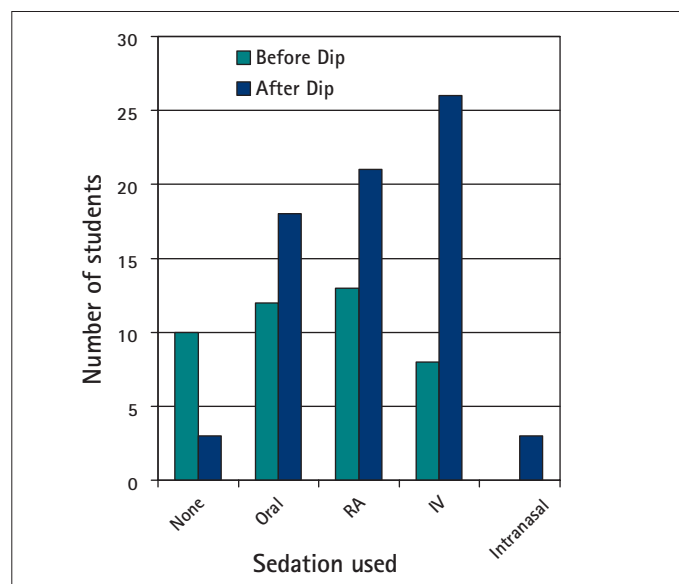


Fig. 1 Sedation practices before and after gaining DipDSed (n=30).

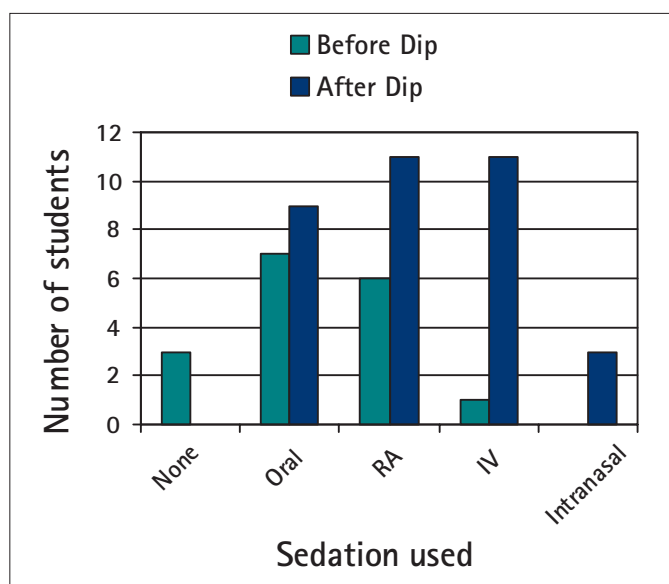


Fig. 3 Changes in sedation practice of those working in the CDS (n=11).

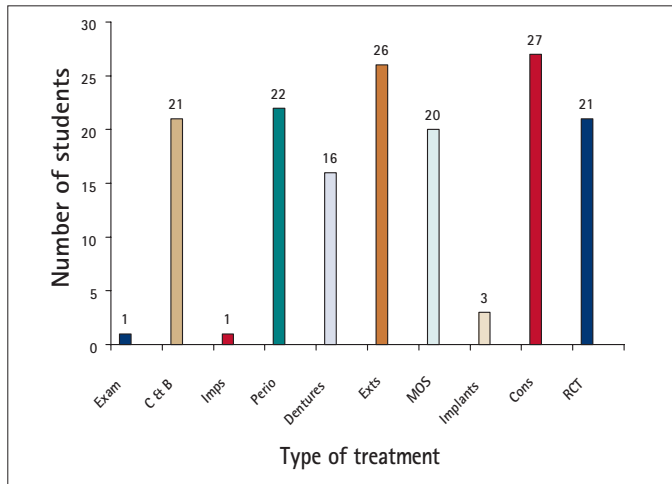


Fig. 4 Treatment currently provided under sedation (n=30).

In terms of past diploma students providing sedation training, 18 were involved in this activity, however there was variation in the sedation techniques taught depending on the teachers, their subject and target audience. (Fig. 5)

Of the 12 people not currently involved with sedation training, eight said that they would be prepared to be involved with training in the future. Reasons given for not currently providing training or not being prepared to be involved included:

- Not practising sedation themselves at present.
- Impractical in current working environment.
- Limited time and loss of earnings.
- Felt staff should be trained.

DISCUSSION

This study sought to examine the impact on students who had completed a course leading to a Diploma in Conscious Sedation for Dentistry. This was explored in terms of whether the course had any effect on the clinical practice that was undertaken following completion of the course. Evaluation from students of the training that they had received was also undertaken. In order to examine students' commitment towards promoting the use of sedation, students were also asked about their involvement in training dentists and dental nurses after completion of the course.

The response rate of 100% was not unexpected for such a small cohesive group of students with a common bond and interest and who had all experienced the work involved in completing such a project. This was reflected in the support for a diploma update day. In addition the overwhelming positive opinion expressed on the course is not perhaps surprising. Nevertheless, a number of suggestions were made. One third of students felt the course should be longer, principally to provide a more formal theoretical component. The suggestion of weekly short tuto-

rials was also made. On the practical side, shortfalls in areas such as special care and paediatric dentistry could be addressed by the arrangement of clinical attachments, and in the area of sedation for people with disability this option was available.

The second objective concerned with change in practice was considered to be particularly important, as the major purpose of the course was to enable students to be effective in providing sedation for anxiety management and to be confident to carry out sedation in their practice as an operator/sedationist. Since students attending this course were almost exclusively from the primary care services it would be expected that sedation was being used in the provision of all aspects of dental treatment. This was found to be the case – as shown in Figure 4 – and strengthened the value of this course since the skills necessary to provide sedation for a wide range of treatments is essential for practitioners working in primary care.

Although two thirds of students were using sedation prior to undertaking the course, changes in the use of sedation techniques occurred as shown in Figures 1-3. In particular, there was an increase in the use of intravenous sedation within the community dental service. Although sedation is widely used in this service this has tended to be predominantly inhala-

tion sedation. With the reduction of general anaesthesia and the role of providing care for people with disability within the community dental service, it would seem appropriate that intravenous sedation should play an increasing part in the options available within this service.

This course appears to have encouraged this approach. The use of oral and intranasal techniques by students from the community dental service may also relate to the need for such methods in the sedation of people with disability.

It was encouraging that 18 past students had become involved in sedation training. This not only represents a commitment towards promoting the use of sedation, but shows a confident and positive attitude to the subject and towards building a team approach.

There was a particular commitment towards training in the community dental service across all techniques and levels. The question about offering an alternative level of training to the diploma was responded to positively. The Dental Sedation Teachers Group is an organisation concerned with promoting policies for teaching both at the undergraduate and postgraduate level. This group has advised on basic competencies required as part of sedation training. Based on such recommendations there has been a recent development in establishing a Standard Course in Conscious Sedation (England and Wales).¹⁴ This is supported by the Department of Health and The Royal College of Surgeons of England and sets out the requirements for completion of formalised training which are:

- A mentored clinical attachment consisting of the completion of 20 intravenous sedation cases, 10 inhalation sedation cases and five assessments. Trainers are formally approved by The Royal College of Surgeons of England.
- The completion of an approved theoretical course.
- Attaining a level of knowledge as assessed

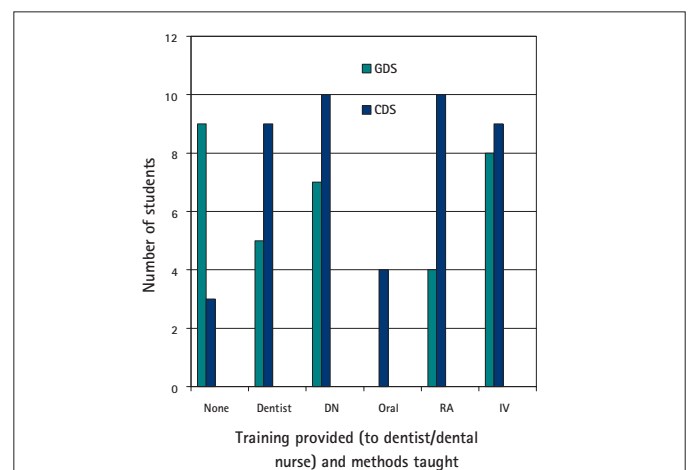


Fig. 5 Number in each service involved in sedation training (n=30).

by successful completion of an MCQ paper.

Support was funded initially by The Department of Health (through NCCPED) and subsequently funding may be provided through individual deaneries. This development provides an opportunity to fill the gap between a diploma course and a short two day theoretical course. It provides mentored support for the practitioner who may be interested in an introduction to sedation. In addition, for the experienced sedationist practitioner who may not wish to undertake the commitment of a diploma course, it provides a formalised validation of experience. In view of the commitment to training within the community dental service it may be that this service could play an active role in promoting this training option.

CONCLUSIONS AND RECOMMENDATIONS

The use of sedation is recognised to be an important part of pain and anxiety management in dentistry. The purpose of this study was to find out if students who had successfully completed the training had been able to change their practice in providing an increased range of sedation techniques. In addition by examining any change in involvement in training it would be possible

to suggest students had both achieved an increase in theoretical knowledge, clinical skills and commitment towards promoting the use of conscious sedation in dentistry.

The information obtained from past students who attended the course leading to the Diploma in Conscious Sedation for Dentistry shows that this course has achieved these objectives of providing the theoretical knowledge, clinical skills and confident ability in those who took part. On completion of this course most of the students have been enabled to surmount the barriers to changing clinical practice and increase the range of sedation techniques offered in primary care.

The value of an intermediate level between the two day section 63 course and the six month diploma course was suggested by students in this study. The development of a clinical attachment based on The Standard Course in Conscious Sedation was proposed as a possible option to fill the gap. The provision of postgraduate training in sedation is limited particularly in some areas of the UK. This problem should be addressed by increasing the opportunity for postgraduate training in sedation by dental schools and postgraduate deaneries. Work towards increasing the funding and opportunities for training in this important area of care needs to be undertaken.

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