

A review of teaching of behavioural sciences in the United Kingdom dental undergraduate curriculum

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In 1990, the GDC published its recommendations on the teaching of behavioural sciences. A study of sociological and psychological teaching in the dental undergraduate curriculum has shown a great deal of variation between the 14 dental schools in the United Kingdom. Most of this teaching was also theoretical and at a pre-clinical level. Should skills and applied psychology be given an increased emphasis in the core clinical content of the undergraduate curriculum?

Behavioural sciences primarily describe the combination of the subjects of psychology and sociology. Other areas such as anthropology, communication and epidemiology are also sometimes included. The need for a formal behavioural sciences teaching programme in the dental undergraduate curriculum was identified in three publications concerning this issue in the 1980s.²⁻⁴ Kent collated information on the teaching of behavioural sciences in UK dental schools, which he defined as including psychiatry and epidemiology.² Many of the teachers were not based in dental schools and the data was collected by postal questionnaire. At that time, it was reported that teaching took place in both pre-clinical and clinical years in all but 2 of the then 16 dental schools. Considering psychiatry and epidemiology separately, only half of the UK dental schools included behavioural sciences as part of their dental undergraduate curriculum. This teaching seemed to be based on an informal, ad-hoc substructure. The emphasis was in applied learning (clinical knowledge related to patient management), rather than a theoretical, research perspective and behavioural sciences was not integrated into clinical dentistry, but

taught as a separate course.

The General Dental Council (GDC) has had a pivotal role in developing behavioural sciences teaching in the dental curriculum across the UK. The first formal reference to the subject appeared in the document: *Recommendations Concerning the Dental Curriculum*.⁵ This recommended that students should be taught how to build effective relationships with patients in groups such as those who are anxious, handicapped and children. Although the advice was limited and focused solely on psychology it did, nonetheless, endorse the role of the patient as a 'person' in the interaction between dentist and patient, emphasising a holistic approach. However, the recommendations relating to psychology seemed to view the subject as an adjunct rather than an integral part of the curriculum. In 1985, further revisions were made in the GDC dental undergraduate curriculum recommendations to include the role of preventive teaching from a community perspective.

A defining document was produced in 1990 by the GDC's Working Party on Behavioural Sciences, endorsing behavioural sciences teaching as a comprehensive part of the dental undergraduate curriculum. This marked the formal recognition of behavioural sciences in the training of dentists and was published as a guidance document in May 1990. The working party consisted of specialists within the fields of dentistry and behavioural sciences who were deliberately outwith

the Education Committee. Their consensus was that behavioural sciences teaching varied enormously within the dental schools. More pertinent, however, was the fact that some 60% of the dental schools did not see behavioural sciences as having even a low priority within the dental curriculum. Briefly, the GDC guidelines recommend that teaching of the behavioural sciences be integrated throughout the dental undergraduate course and formally taught in a way that meets the needs of dentists. Integration in this sense means not only an interdisciplinary cooperation between non-clinical and clinical disciplines but, direct relevance to the treatment of patients.

There has been no review since the recommendations of the GDC in 1990. Behavioural sciences teaching is thought to be fairly well established in most dental schools, implemented by a range of dental and non-dental health professionals (such as psychologists and sociologists) working in an integrated way. However, the nature and extent of this teaching remains unclear and indications are that it varies greatly between schools with varying individual perspectives on how it should be taught.

Dental schools will have been collating their teaching material in this field in relation to the decennial GDC visits and the Higher Funding Councils reviews of teaching quality. Therefore, it was timely for a detailed review in the area to be undertaken.

The aims of this current study, to undertake a 1995/96 UK Behavioural Sciences Teaching Review were:

- 1 To describe similarities and differences in subject content and methods of teaching between institutions as a basis for increasing knowledge about the value of different teaching methods.
- 2 To examine the extent of integration which has taken place between behavioural sciences teaching and the dental curriculum
- 3 To examine the interaction between

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dental and non-dental staff in the pursuit of behavioural sciences teaching

- 4 To identify potential benefits for the graduating dentist that have been attained through the teaching of behavioural sciences as it is currently structured.

Methods

Design

A mixed method approach to data collection was employed using both a self-report questionnaire and key informant interviews. Data was collected between February 1994 and March 1995. The results of the key informant interviews are reported in full elsewhere with main points included in this paper.

Sampling

The person responsible for organising and/or delivering the behavioural sciences teaching in each dental school was identified by means of a membership list of the Behavioural Sciences in Dentistry Teachers' Group and with the assistance of dental deans. Where two or more organisers were identified, both acted as key informants for the semi-structured interview and jointly contributed to providing the information on the structured postal questionnaire. All 14 dental schools in the UK provided information for the study, although due to various pressures and constraints on the part of the key informants, the mode of this data collection varied between schools. Eleven dental schools completed the self-report questionnaire and interview, one school completing the interview only, and two dental schools provided documentation from which information regarding teaching in the dental undergraduate curriculum was extrapolated.

Interview design

Quantitative data concerning the content, methods and examination structure of behavioural sciences teaching was collected by means of a structured, self-report questionnaire.

Procedure

The organisers of behavioural sciences teaching in each dental school were contacted where possible by telephone, the study was explained and he/she was invited to participate. Behavioural sciences teachers from twelve separate dental schools were known from the Behavioural Sciences in Dentistry Group Teachers' membership list, and contacted directly by the first author (PMcG). Two other dental schools were contacted via the second author (CP) who identified the key informants for the study. Following approval from each dental school or behavioural sciences teacher to participate in the study, the structured questionnaire and details of the study were mailed to each recruited person who had agreed to provide information. Once appointment times had been scheduled, the researcher visited each key informant in his or her respective dental schools to carry out an interview. It was at this time that the structured questionnaire was discussed and collected.

Analysis

The structured questionnaire was analysed using SPSS.⁷ Descriptive statistics were used to summarise and present the findings.

Results

Sample

Information was provided by three main professions, dentist ($n = 5$), sociologist ($n = 4$), and psychologist ($n = 8$). All but 2 of the 13 staff involved in the questionnaire survey were educated to doctorate level, the other 2 had post-graduate qualifications. Of these 13 teachers, 5 had been working in their present post for over 10 years, while four were in post for ten years and 4 teachers had been appointed in the previous 5 years.

The teaching of behavioural sciences in UK dental schools.

Since 1990, a further 7 dental schools had introduced behavioural sciences teaching into their dental curriculum, making a total of 13 dental schools formally

teaching the subject as part of the dental undergraduate curriculum.

An estimation of the hours spent teaching behavioural sciences across the dental undergraduate curriculum was given by the participants. Hours ranged from 17 to 178, with a mean of 83 (s.d. = 51.5).

A range of subjects was covered under the umbrella of behavioural sciences teaching as illustrated in figure 1. The teaching was dominated by psychology with a relatively small contribution from sociology-based subjects being taught in most schools. Communication skills were taught to some degree within each of the 14 dental schools. Unexpectedly, two schools included cross-infection control in the behavioural sciences course.

Teaching facilities and methods

Teachers taught in a range of environments according to the method of teaching being delivered. These were confined to lecture theatre ($n = 11$), seminar/tutorial room ($n = 9$), video suite ($n = 4$), and laboratory ($n = 3$). Methods of teaching varied from primarily lectures in eight dental schools through to a wide range of other methods. They included seminars (8), workshops (5), tutorials (3), video (8), case scenarios (3), problem-based learning (6), independent learning (4), project work (8), computer assisted learning (2), observation of clinics (4), and research projects (7).

Methods of teaching that were considered to be successful included: small group teaching, workshops, practically-based teaching (role-play), tutorials, a mix of teaching methods, provision of handouts, project work, student-led seminars, and problem-based learning. Methods reported to have been unsuccessful were primarily, didactic lectures as well as morning lecture slots, lectures in the fourth year as students preferred 'hands on' teaching, and theory-based lectures. Topics best received by the students as reported by the teachers included: communication skills, pain/anxiety, stress in dental practice, psychological treatments, and clinically related

Fig. 1 Range of behavioural science subjects taught in UK dental schools

issues. Those topics least well received included: statistics, basic cognitive psychology, theoretical subjects, social issues, sociology with the exception of ethnicity, and stress management.

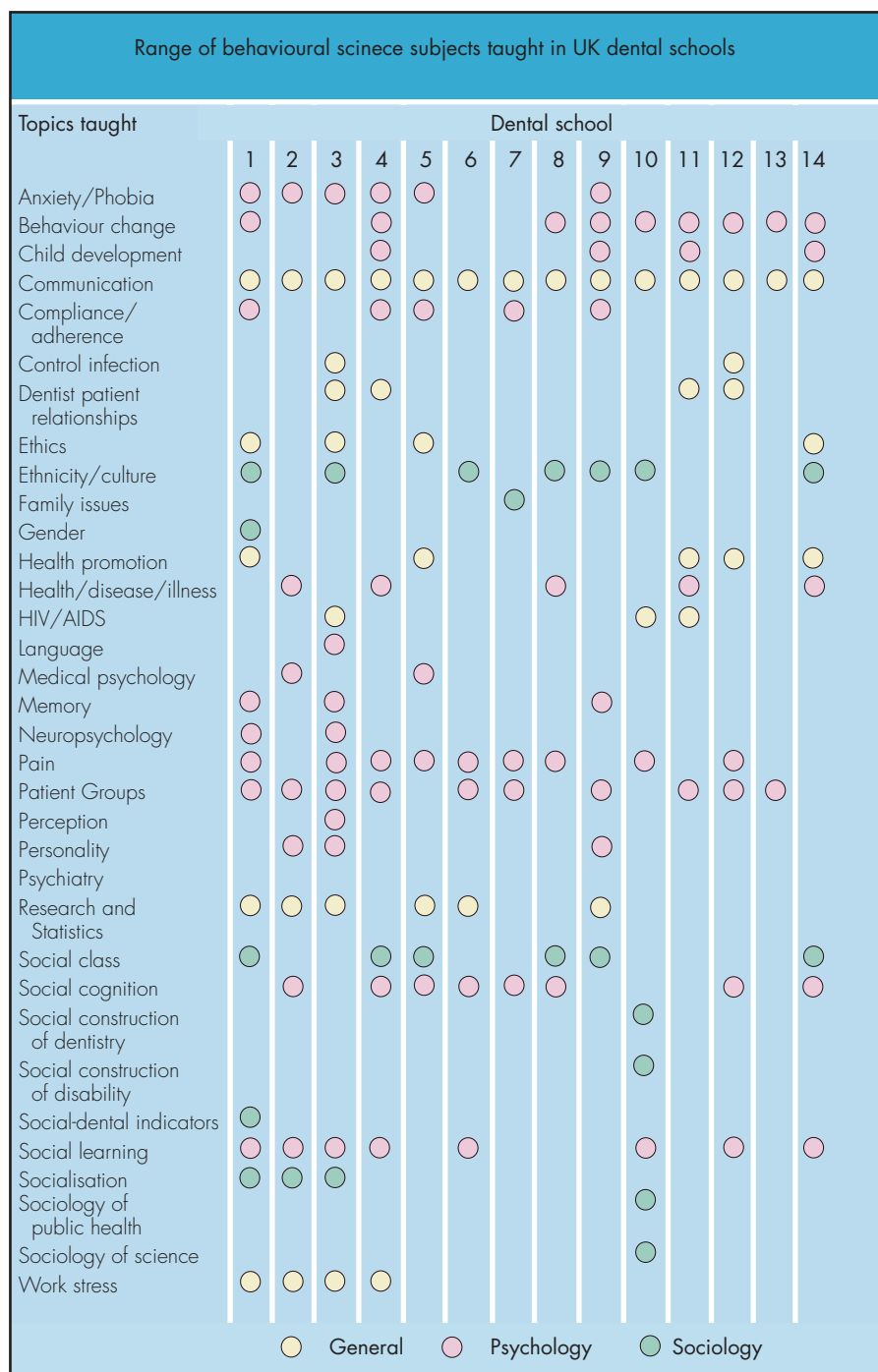
Integration of behavioural sciences teaching within the dental curriculum.

Nine dental schools claimed to have integration of behavioural sciences teaching in other clinical dental areas while, three did not and, there were two undisclosed answers. In terms of examination and formal assessment, the majority ($n = 12$) of the dental schools who taught a behavioural sciences course examined the subject formally within the curriculum structure. In only three dental schools behavioural sciences was examined as part of the professional exam structure (4/5th year).

Staff in relation to behavioural sciences teaching

Participants were asked to list the teaching team responsible for teaching behavioural sciences in each dental school. The number of staff involved ranged from 1–12 with a mean of 5 staff members. Staff included dentists ($n = 27$), psychologists ($n = 15$), sociologists ($n = 7$), a doctor ($n = 1$), a psychiatrist ($n = 1$), and health promotion staff ($n = 4$). Of these 55 staff, 15 had a clear remit within their job descriptions to deliver behavioural sciences teaching.

Teachers were asked how the behavioural sciences course was developed within each dental school. The starting point for most of the schools appeared to be through informal routes with interested dental clinicians and progressed on the strength of the 1990 GDC guidelines to having the subject examined formally. The professions responsible for organising the behavioural sciences teaching initially were primarily dentists ($n = 8$), a sociologist ($n = 1$) and psychologists ($n = 4$). While currently, courses were organised by dentists ($n = 6$), sociologists ($n = 3$) and psychologists ($n = 6$). In two instances, course responsibility was shared equally between the psychologist



and sociologist and, in one case it was the dentist and psychologist.

When asked what should constitute a behavioural sciences course for dental students most teachers emphasised the subjects of psychology and sociology, with an application to the practice of dentistry seen as being important. Ten of the dental schools stated that they followed the guidelines as laid down by the GDC in the delivery of behavioural sciences teaching.

Teachers were asked for their views on the balance between psychology and sociology. Of the ten opinions given, two

teachers felt that the subjects should be equally taught in the dental course, three felt that currently there was too much emphasis on psychology, one of whom felt that this was justified although sociology did merit more input than hitherto. When asked whether teachers envisaged or wanted a link between behavioural sciences and dental public health, the majority ($n = 8$) responded favourably. Four respondents were not in favour of such an alliance.

Teachers were asked how satisfied they felt with teaching facilities, topics and hours devoted to behavioural sciences

teaching in the dental undergraduate curriculum. Figure 2 illustrates the level of satisfaction reported. On the whole, no staff member was completely satisfied with facilities, hours and topics, and only one dental school was completely satisfied with facilities and topics. The majority ($n = 6$) were either barely or not at all satisfied with arrangements concerning any of the above.

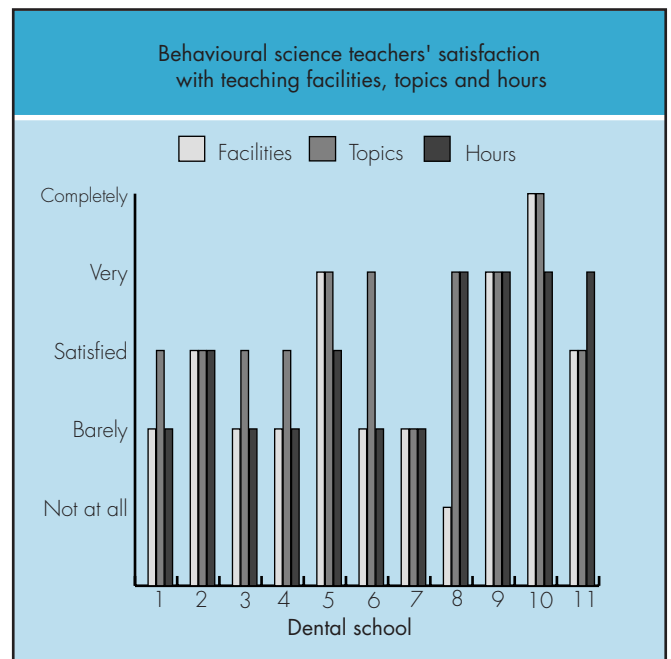
Areas that teachers found deficient included: 'time available for teaching was insufficient to allow topics to be covered in the depth it was felt was needed, skills-based learning, communication skills, sociology, biological basis of behaviour, and teaching on ethnic minorities and disabilities'. Two of the dental schools reported that no areas were currently seen as deficient.

When asked about who should be involved in behavioural sciences teaching there was unanimous support for an interdisciplinary team involving psychologists, dentists and sociologists, although this approach was evident by its absence. However, no one reported a truly interdisciplinary approach with shared responsibility for teaching and curriculum development. The professions with the overall responsibility for organising and delivering behavioural sciences teaching to the dental students were dentists ($n = 6$), psychologists ($n = 4$) and sociologists ($n = 2$). The professions with responsibility for curriculum review and planning were dentists ($n = 6$), psychologists ($n = 2$) and a sociologist ($n = 1$), and, multi-disciplinary groups ($n = 3$).

The applicability of the current system to the profession of dentistry

Participants were asked to indicate which students were taught behavioural sciences during their undergraduate years. Both pre-clinical and clinical students were taught but not in all dental schools. First year students were taught in three dental schools and second year students in eight dental schools. The majority ($n = 10$) taught students in third and fourth years, with seven schools claiming to teach final

Fig. 2 Behavioural sciences teachers' satisfaction with teaching facilities, topics and hours (for 11 out of 14 dental schools)



year students. No dental school taught behavioural sciences throughout the undergraduate curriculum (i.e. from year 1 to 5).

Discussion

This study is the first UK review of behavioural sciences teaching in the dental undergraduate curriculum since the publication of the 'Guidance on the Teaching of Behavioural Sciences' in 1990. The subjects of psychology and sociology which seem to solely comprise the behavioural sciences in the UK are formally recognised as part of the dental undergraduate curriculum in all but one UK dental school at the time of this survey. It is apparent that there has been a steady progression and emphasis on teaching psychology and sociology to dental students over the past 15 years.

Clearly much variation remains in the teaching, which makes comparisons of teaching quality among schools difficult. This variation in the teaching of behavioural sciences between the dental schools is most evident in the areas of staffing, and teaching content. There were large differences between the dental schools in the number of personnel employed to teach behavioural sciences as well as in the hours devoted to teaching. None of this however, necessarily reflects the nature or quality of the teaching carried out. Furthermore in most dental schools there was at least one person identified with overall responsibility for delivering the behavioural sciences course. More important perhaps, are the differences in the content of behavioural sciences teaching across dental schools. For example,

communication skills, while offered by all schools, seemed to lack resources and the time devoted to it did not reflect a skills training approach, with the exception of one dental school. Furthermore, the number of topics taught, as well as the psychology/sociology split, has poor agreement and no doubt represents individual school/teacher preferences. Additionally, no single dental school taught across the curriculum indicating that horizontal integration may not be present in teaching the subject. There was also little evidence of true vertical integration. Integration between behavioural sciences and clinical dentistry would seem an important issue to be addressed in the future. Agreement among teachers is essential if true integration of the behavioural sciences into the main core dental curriculum is to be realised.

Perhaps the greatest barrier that exists is in the differing attitudes, to the relevance and applicability of the behavioural sciences to the career of dentists, in particular, sociology, even among those directly involved in delivering the teaching. In a recent survey of the clinical relevance of behavioural sciences, 84% of senior dental students sampled from five UK dental schools indicated that its inclusion in the dental curriculum was important. However, their confidence in dealing with a range of patient management situations was low.⁸ This may suggest that students require a behavioural sciences course that addresses patient management issues and is clinically relevant.

There may be merit in developing agreement and specification of core competencies of knowledge, attitudes and

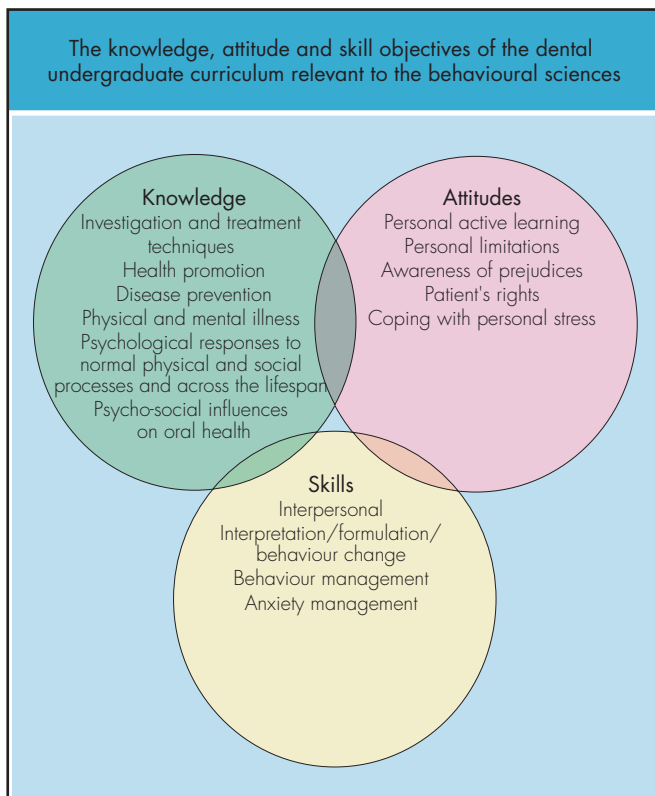


Fig. 3 The Knowledge, Attitude and Skill objectives of the dental undergraduate curriculum relevant to the behavioural sciences

skills in the area of behavioural sciences. This may be useful in overcoming the lack of consensus and clarifying integration with clinical disciplines. It would also enable curricula to prioritise the relevant skills in behavioural sciences, which are core to the training of the dentist. In several aspects, the most recent curriculum guidelines from the GDC, *The First Five Years*,⁹ offer clear guidance concerning the type of knowledge, attitudes and skills which should be taught from the disciplines of psychology and sociology.⁹ The guidance has been examined carefully by the authors and the knowledge, attitudes and skills relevant to the behavioural sciences summarised (fig. 3). While this survey would indicate that many of these topics are already being taught to varying degrees in some dental schools,

great anomalies still exist.

Once core skills have been identified and agreed there is a need to assess their acquisition appropriately and to integrate them with knowledge and attitudes.¹⁰ Those involved in developing and delivering behavioural sciences teaching may wish to adopt such approaches in an attempt to promote comparability and agreement. In this way we can have a clearer and more secure vision of the contribution of behavioural sciences to the dental undergraduate curriculum.

Conclusions and recommendations

Much variation exists in the delivery of behavioural sciences teaching in the UK dental undergraduate curriculum. Little of the teaching is skills-based but is focused on theoretical perspectives with

little clinical application. Given that dentistry is a clinical discipline, it would seem unwise to adopt such a narrow perspective of behavioural sciences teaching, besides being counter to the most recent undergraduate curriculum guidelines.

It is recommended that more specific guidance be given to teachers of behavioural sciences in dentistry. This may involve an update of the 1990 GDC guidelines. In particular, new guidance needs to address the application of behavioural sciences to clinical dentistry and educational methods for delivering this teaching competently and efficiently.

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