

Strategy for teaching communication skills in dentistry

SADJ July 2010, Vol 65 No 6 p260 - p265

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ABSTRACT

Aim: To develop and evaluate a teaching strategy for teaching communication skills in dentistry.

Methodology:

Phase I: Development and implementation of a course in communication skills.

Phase II: Implementation of a teaching strategy by means of an experiential learning strategy complemented by a didactic teaching strategy.

Subjects: Third year dental students (n = 67). The *instruments* included the following:

- (i) Study guide;
- (ii) Case study;
- (iii) Assessment rubric;
- (iv) Two questionnaires: "Patient's and "Dentist's feedback;
- (v) Standardised patient.

Results: The class as a whole scored significantly higher *after* training compared to *before* training ($p < 0.0001$). Both male and female students rated the value, appropriateness and effectiveness of the teaching strategy employed during the study, rather highly (4.18 and 4.26 on a five-point Likert scale, respectively).

Conclusion: The teaching strategy employed for teaching third year dental students communication skills, proved to be effective and was perceived by the students as a valuable and appropriate strategy.

Key words: Communication skills teaching; dentist-patient relationship; standardised patient.

INTRODUCTION

Dental schools should create competitive dentists - perceived by patients to be *different and unique* in their relationships with patients. To be different and unique differentiate the dentist from other dentists and gives him/her a competitive advantage which enhances the loyalty and commitment of the patient¹. Since dental care occurs in the context of relationships amongst patients and dentists, dental schools should complement students' cognitive and clinical development by teaching the human dimensions of dental care by means of the development and implementation of courses in communication skills².

Specific teaching principles and methods should be employed when teaching communication skills in order to achieve optimal educational benefits. However, the literature refers to a lack of an experiential teaching approach in dental schools^{3,4}. Research suggests that effective teaching in communication skills should be continuous and should gradually increase in complexity as students progress through the curriculum⁴. Without the foundation of communication theory as well as skills presented

in earlier years, it seems unlikely that students could truly grasp such complex material later in their careers. As a result, teaching in pre-clinical and clinical settings should be complementary. Many US and Canadian dental schools however fail to provide students with gradual exposure to communication, building from basic principles to complex concepts such as patient education/consultation and managing difficult patients⁴.

A notable finding in these US and Canadian dental schools is that students' interviews with simulated patients and other active learning methods are used less in dental curricula than in medical schools. During active learning a student interactively participates in learning activities. Active practice is necessary to learn communication skills⁴.

AIM

The aim of this study was to develop and evaluate a teaching strategy for teaching communication skills in dentistry.

METHODOLOGY

The *methodology* employed during the study comprised the following two phases:

Phase I: Development and implementation of a course in communication skills².

Phase II: Implementation of a teaching strategy which enhanced a student-centred, problem-oriented learning approach by means of an experiential learning strategy complemented by a didactic teaching strategy.

IMPLEMENTATION OF THE TEACHING STRATEGY

Subjects

A cohort of 67 third year dental students comprised the subjects of the study. The demographics of the subjects were as follows: the majority (n = 42; 63%) was female. Forty-eight students (72%) were White, 12 students (18%) were African and seven students (10%) were Asian. The average age of the group was 21.8 years (male = 22.8 years; female = 21.2 years). The cohort of 67 students was divided in 16 smaller groups of four students each and one group of three students.

Instruments

- **Study guide**
A study guide was compiled and each student was issued with a copy. Students studied the content of the study guide during the training phase (Table 1) as part of the development of their communication skills. The study guide served to provide the rationale for communication skills training.

Table 1: Implementation of the teaching strategy

Pre-training phase	Step 1	Experiential learning opportunity ("experience the experience")	Role play case study with SP	Video recordings of 3 rd year dental students' base line communication skills	
	Step 2			Evaluation of 3 rd year dental students' base line communication skills	Evaluation by SP by means of assessment rubric and video recordings of interviews
Training phase	Step 3	Cognitive evidence by means of didactic teaching	Lecture Videos Study guide Role play case study with peers	Developing 3 rd year dental students' communication skills by teaching	
Post-training phase	Step 4	Experiment/practice	Experiential learning/role play with SP	Video recordings of 3 rd year dental students' newly developed communication skills	
	Step 5	Evaluate		Evaluation of 3 rd year dental students' newly developed communication skills	Evaluation by SP by means of assessment rubric and video recordings of interviews

• **Case study**

A case study was developed which represented a clinical scenario comprising the full scope of bio-psychosocial skills required during the dentist-patient interview. The clinical scenario represented a patient with the following diagnosis: a carious lesion on the right maxillary first premolar; a defective restoration on the left maxillary central incisor; a discoloured right maxillary central incisor; gingivitis and an impacted left mandibular wisdom tooth. Each student conducted his/her interview with the standardised patient (SP) by means of the case study.

• **Assessment rubric**

The assessment rubric represented the identified specific outcomes and sub-outcomes - thought to be essential for the dentist in communication skills - in a logical and sensible structure for teaching and assessing students' communication skills². Specific outcomes and sub-outcomes were converted to "Tasks" and "Skills" respectively².

Each student was assessed (scored/rated) by means of the assessment rubric as follows: a score of "1" if the student did not employ a particular skill; "2" if a skill was partially employed; "3" if a skill was acceptably employed and "4" if a skill as fully employed.

• **"Patient's" feedback**

The questionnaire: "Patient's" feedback was designed to focus particularly upon the relationship between dentist and patient, patient understanding, loyalty and agreement. The questionnaire consisted of a series of 10 statements referring to the "patient's" (SP's) perceptions of the "dentist's" communication skills during the interview with each student on a five-point Likert scale². The scale ranged from "1" = Poor/Disagree to "5" = Excellent/Agree. Likert scales are commonly used to measure attitude, providing 'a range of responses to a given question or statement'⁵.

• **"Dentist's" feedback**

Students provided quantitative and qualitative feedback about their experiences as 'dentists' during the interview with the SP on a five-point Likert scale and by answering open-ended questions, respectively.

• **Standardised patient**

A professional actress was trained as standardised patient (SP) to portray the case study (clinical scenario) in a consistent, reproducible and measurable manner⁶. To assist the SP in understanding the nature of the dental scenario and its presenting signs and symptoms, written case notes were prepared for the SP to review. During training of the SP, the

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Table 2: Comparing gender within training cycles by Wilcoxon's Rank Sum Test

Training phase	Parameter	Male		Female		p-value (< 0.05)
		Mean n = 25	SD	Mean n = 42	SD	
Pre-training phase	Dimension: Opening the interview	3.52	0.50	3.39	0.54	0.2911
	Dimension: Structuring the interview	1.95	0.41	1.93	0.41	0.7992
	Dimension: Understanding patient's perspective	1.55	0.47	1.44	0.27	0.5500
	Dimension: Sharing information	1.46	0.50	1.37	0.18	0.7699
	Dimension: Reaching an agreement	1.94	0.42	1.88	0.30	0.6840
	Dimension: Building the relationship	2.36	0.68	2.30	0.48	0.6840
	Rubric Total	2.13	0.38	2.05	0.23	0.6020
Post-training phase	Dimension: Opening the interview	3.29	0.59	3.60	0.45	0.0495*
	Dimension: Structuring the interview	3.17	0.53	3.19	0.52	0.8611
	Dimension: Understanding patient's perspective	2.68	0.66	2.68	0.71	0.9432
	Dimension: Sharing information	2.20	0.63	2.28	0.63	0.6925
	Dimension: Reaching an agreement	3.13	0.47	3.15	0.54	0.6925
	Dimension: Building the relationship	3.14	0.62	3.28	0.55	0.4718
	Rubric Total	2.94	0.48	3.03	0.48	0.4178

* = significant on 5% level

Table 3: Comparing rubric scores for the two training phases within gender by Signed Rank Test

Parameter	Male			Female			Total class		
	Mean n = 25	SD	p-value (< 0.05)	Mean n = 42	SD	p-value (< 0.05)	Mean n = 67	SD	p-value (< 0.05)
Difference in scores for rubric dimensions: Pre-training phase – Post-training phase									
Dimension: Opening the interview	0.23	0.64	0.0491	-0.23	0.58	0.0165	-0.06	0.64	0.4933
Dimension: Structuring the interview	-1.22	0.58	< 0.0001*	-1.25	0.69	< 0.0001	-1.24	0.64	< 0.0001*
Dimension: Understanding the patient's perspective	-1.13	0.64	< 0.0001*	-1.23	0.70	< 0.0001	-1.19	0.67	< 0.0001*
Dimension: Sharing information	-0.74	0.63	< 0.0001*	-0.91	0.66	< 0.0001	-0.85	0.65	< 0.0001*
Dimension: Reaching an agreement	-1.18	0.49	< 0.0001*	-1.28	0.58	< 0.0001	-1.24	0.55	< 0.0001*
Dimension: Building the relationship	-0.78	0.87	< 0.0001*	-0.98	0.65	< 0.0001	-0.91	0.74	< 0.0001*
Rubric Total	-0.80	0.49	< 0.0001*	-0.98	0.50	< 0.0001*	-0.91	0.50	< 0.0001*

* = significant at the 5% level

assessment rubric served to educate her about the nature of the dentist-patient interaction. The SP was provided with guided feedback as she rehearsed the desired physical and verbal responses during her interaction with the 'dentist.'

Implementation of the teaching strategy (Table 1) aimed for a student-centred, problem-oriented learning approach. In this study an experiential learning strategy was chosen, complemented by a didactic teaching strategy. This approach is presented as an "ATF"-strategy (Table 1):

- **Affectively stimulate students (Pre-training phase):** the pre-training phase provided an opportunity for experiential learning (experience the experience with the objective to stimulate students affectively). It comprised role playing a structured interview with the SP acting as 'patient.' (Pre-training phase, Step 1). The role playing was video recorded and assessed by the SP by means of the assessment rubric in order to determine

students' base line communication skills. (Pre-training phase, Step 2). Feedback was given by means of the video recordings.

- **Theoretical input (Training phase):** during this phase students' communication skills were developed. Students were supplied with cognitive evidence of best practices by means of a lecture and video presentation of an interview supported by the study guide. Students had the opportunity to develop their interviewing skills by practicing in peer groups of four students each (Training phase, Step 3).
- **Functionalisation of the communication skills (Post-training phase):** during the final phase students were given the opportunity to employ (functionalise) their newly acquired skills/knowledge by role playing the case study with the SP who acts as "patient" (Post-training phase, Step 4). Assessment of students' newly developed communication skills was done by the SP by means of the assessment rubric. Feedback was given by means of the video recordings (Post-training phase, Step 5).

Table 4: “Dentist’s” feedback: appropriateness of teaching methods employed

Parameter	Male		Female		Total group	
	Mean n = 25	SD	Mean n = 42	SD	Mean n = 67	SD
Methods employed in terms of the whole teaching experience						
Lectures	3.88	0.67	3.67	1.03	3.75	0.91
Making video recordings	4.20	0.76	4.33	0.85	4.28	0.81
Use of a standardised patient	4.36	0.76	4.50	0.63	4.45	0.68
Evaluation of skills by means of “Rubric”	4.04	0.68	4.14	0.72	4.10	0.70
The “dentist’s” feedback	4.16	0.85	4.36	0.76	4.28	0.79
The “patient’s” feedback	4.44	0.71	4.57	0.59	4.52	0.64
Average	4.18	0.74	4.26	0.76	4.23	0.76

RESULTS

Table 2 indicates that male students scored higher than female students during the Pre-training phase in all six dimensions of the rubric. The total mean score for male students for the Pre-training phase was 2.13 as compared with female students’ mean score of 2.05. For the Post-training phase however, female students obtained higher mean scores than male students for all the dimensions of the rubric except for Dimension: “Understanding the patient’s perspective” in which male and female students obtained equal mean scores of 2.68. The total mean score for male students for the Post-training phase was 2.94 as compared with female students’ mean score of 3.03. Both male and female students obtained higher scores during the Post-training phase as compared with the Pre-training phase, except that male students scored lower in Dimension: “Opening the interview” during the Post-training phase than during the Pre-training phase (3.29 compared to 3.52). However, no significant differences existed between male and female students with regard to the different dimensions of the Rubric in either the Pre-training or Post-training phases - except that during the Post-training phase, female students performed significantly better than male students in terms of Dimension: “Opening the interview.”

Table 3 indicates that both male and female students (including the class as a whole) scored significantly higher during the Post-training phase than the Pre-training phase ($p < 0.0001$) for all dimensions except Dimension: “Opening the interview.” Male students scored higher during the Pre-training phase than the Post-training phase for Dimension: “Opening the interview” (3.52 versus 3.29 - Table 2). Table 3 also indicates significant higher scores during the Post-training phase compared to the Pre-training phase for the total rubric ($p < 0.0001$).

From Tables 2 and 3 it is clear that students’ ratings improved significantly from the Pre-training phase to the Post-training phase.

Table 4 illustrates that both male and female students rated the appropriateness of the teaching methods employed during the study rather highly (4.18 and 4.26 on a five-point Likert scale, respectively).

DISCUSSION

In this study, communication skills development was achieved through a teaching strategy which involved role-playing of interviews by students with a SP. Assessment and feedback by the SP by means of an assessment rubric and video feedback enabled the students to do self-reflection².

Since the purpose of education is to provide students with appropriate skills, the lecture- only approach used in many schools is not sufficient^{3,4}. Results of this study confirm that the teaching strategy developed in the study, resulted in achieving the “Aim” of the study: “To develop and evaluate a teaching strategy for teaching communication skills in dentistry.”

Feedback regarding a student’s interpersonal skills needs to be done skilfully². In this study, feedback occurred directly after the interviews and took place in a constructive and sensitive way. An advantage in applying this methodology with simulated patients is that the simulated patient can give feedback from the patient’s point of view. Vannette et al⁸ found that simulated patients’ feedback out-performed that of academic staff in effecting changes in students’ interviewing skills.

The ATF-teaching strategy was an attempt to ensure the attainment of educational benefits as a function of students’ learning experiences. Such experiences may be deemed relevant, pleasant and adding value to their training.

Results of the study proof that the course developed for this study² provided a sound foundation for the learning experiences of the students. The improved results during the Post-training phase of the study could be the result of the small group size: 16 groups of four students each and one group of three students. This was in contrast to a study done in Dunedin, New Zealand by Hannah, Millichamp & Ayers⁷. Their large group sizes (four groups of 16 to 17 students) may have led to lower ratings of tutor sensitivity to students’ concerns, needs and progress than anticipated. They suggested that smaller groups would increase student participation and would enable more individual teaching. Moreover, they suggested that groups should contain a maximum of 10 to 11 students⁷. Experience gained from this study, however, showed that a group of four students was a favourable ideal size for better participation and maximum benefit from SP feedback.

Improved results of this study could also be as a result that students conducted their interviews with the SP in a private consultation room, this being a more relaxed and realistic setting. This is an encouraging outcome of the study since Hannah, Millichamp & Ayers⁷ indicated that another area that could have been improved in their study related to the manner in which students conducted their videotaped interview sessions. Each student had performed the interview in front of their class mates.

Finally, the gathering of information from the “patient” represents a shift from dentist-centred communication to patient-centred communication². This was clearly demonstrated during this research project, when before training - during the Pre-training phase - students tended to focus on the patient (disease)

Table 5: Recommended teaching strategy

Semester	Teaching strategy	Objective/ rationale	Session	Teaching method
1	Phase 1: <u>A</u> ffectively stimulate students	Allow students to “experience the experience”	1	<ul style="list-style-type: none"> Students to be divided in small groups of four students Each student practices role-play of Dimensions 1- 6 of interview with peer by means of a clinical case study. Enhanced by video recording and –feedback by lecturer.
	Phase 2: <u>T</u> heoretical input	Discuss rationale, evidence, cognitive aspects and communication skills required	2	<ul style="list-style-type: none"> One-and-half-hour’s orientation lecture explaining the rationale and evidence from literature supporting communication skills training and teaching. Each student issued with a copy of study guide Demonstration of ideal interview (7 minutes) by means of a video copy Discussing the rubric as assessment instrument ensuring transparency.
	Phase 3: <u>F</u> unctionalisation of relational communication skills	Opportunity to practice the skills through experiential learning	3	Each student practices role-play of Dimensions 1-3 of interview with peers enhanced by video recording and –feedback by lecturer.
4			Each student practices role-play of Dimensions 4-6 of interview with peers enhanced by video recording and –feedback by lecturer.	
2			5 - 8	Each student practices role-play of Dimensions 1- 6 of interview with SP enhanced by video recording and –feedback by SP. Rubric employed as assessment instrument.

to the exclusion of the person (expectations, psychosocial issues and emotions). The feedback sessions by means of the video-feedback provided an ideal opportunity to address this tendency among students². This has been confirmed by students’ rating of the appropriateness of the teaching methods employed during the study (Table 4).

RECOMMENDATIONS

From the experience and results of the study, structural changes to the teaching strategy are recommended, mainly as a result of the financial implications associated with the use of an SP as well as the “labour-intensive” nature of communication skills training². The recommended structural changes are an attempt to enhance the cost effectiveness of the teaching strategy in terms of resources required: Experiential learning is labour intensive and the financial implications associated with the use of a SP might discourage faculty to implement a programme in communications skills training ².

Table 5 illustrates a cost effective teaching strategy recommended to develop undergraduate dental students’ communication skills. During the study an SP was used during Phases 1 & 3 of the training (Table 1). It is however recommended to use an SP only during Phase 3 of the training in order to contain financial costs associated with an SP ⁹ (Table 5).

The recommended teaching strategy comprises, as during the study, the following three strategies (ATF-strategy) ⁹:

- Affectively stimulate students.
- Theoretical input.
- Functionalisation of communication skills.

During the first phase students are to be affectively stimulated. This allows the students to experience the experience in small groups of four students allowing them opportunity to role play the interview with peers, utilising a clinical case study. The process is supported by video recordings of the interviews and feedback by the lecturer.

The second phase would consist of a theoretical input by the lecturer with the objective to discuss the rationale, evidence and cognitive aspects of communication skills required. The

teaching method comprises a one-and-a-half-hour’s orientation lecture exploring the rationale and evidence from the literature supporting communication skills training and teaching. This must be supported by a study guide and a video demonstration of an ideal interview. The assessment rubric must also be discussed in detail with the students, enhancing transparency of the assessment process.

During phase three students would have the opportunity to functionalise with the objective to practice the skills through experiential learning. Interviews are conducted with peers followed by interviews with the SP. The process is supported by video recordings of the interviews and feedback by the SP by means of the assessment rubric.

The purpose of the gradual approach-design by means of interviews with peers followed by interviews with the SP would be threefold⁹:

- To ensure that students gain confidence and expertise in a safe and supportive environment;
- To provide students with the opportunity to reflect on the process of communication skills development through experiential learning by experiencing the role of “dentist” and “patient”;
- To ensure a smooth transition from interviewing an SP to interviewing real patients during students’ clinical years.

In view of the above, and given the complex nature of communication skills teaching, the general lack of awareness of the unique nature of communication skills in clinical settings and the fact that behavioural change which is lasting requires numerous opportunities to practice and to undergo continual reinforcement, the authors became convinced that students should first be affectively stimulated (for example to experience the experience) before introduced to the theoretical part of communication skills teaching. Following the theoretical input, students should have numerous opportunities to practise newly acquired communication skills⁹.

The challenge however, is to balance resources (personnel, time and money) adequately with the need to give students optimal exposure to communication skills training.

Furthermore, interviews with peers have advantages as well as disadvantages. It is the ideal way to “break the ice” initially. Students feel more relaxed and not too intimidated while being video-recorded. Initial scepticism of communication skills teaching could be due to a lack of knowledge about the specific components thereof. However, the disadvantage of peer-interviewing is that peers know each other too well and as a result find it difficult to experience the peer as a “real” patient⁹.

In addition, as educators, our job does not stop with developing curricula with reference to purpose statement, embedded knowledge, assessment criteria or teaching strategies. We must also look at the context and culture in which we teach, and adjust to that context if we are to be successful. As education researchers, we need to focus more attention on understanding and developing methods for intervention in the all-important “hidden curriculum.” The latter may be defined as “commonly held understandings, customs, rituals and all other aspects so often taken-for-granted”¹⁰.

CONCLUSION

Through this study it was possible for us as educators to fulfil our duty to intervene in the context and culture in which we teach as well as students’ life-space by means of dental education¹⁰. The authors believe that this intervention effected a major and significant shift in the paradigms of clinicians and clinical specialists in the School of Dentistry at the University of Pretoria. As a result of this paradigm shift, a new “non-clinical” academic

department was established in the school. This department will be responsible for addressing the “hidden curriculum” by training dental students in business, entrepreneurial and communication skills². As a result, greater balance will be achieved in the current clinical and technique-orientated undergraduate dental curriculum as the new academic department will have a patient-focused (customer relationship management) approach which will in future enhance the dentist-patient relationship^{2,11}.

Finally, this study will hopefully initiate a change in South African dental schools to the culture that active learning methods are used less in dental curricula than in medical schools^{3,4}. The authors are convinced that this study will bring about such change as the consequences of this study are considered.

Declaration: No conflict of interests was declared

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