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Investigation of Patient Anxiety, Patient Satisfaction, and Dental Student Behaviors

Mary Kathryn Morris
Utah State University

INVESTIGATION OF PATIENT ANXIETY, PATIENT SATISFACTION, AND DENTAL STUDENT BEHAVIOR

by

Mary Kathryn Morris

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Kathryn Morris

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ABSTRACT

Investigation of Patient Anxiety, Patient Satisfaction, and Dental Student Behaviors

by

Mary Kathryn Morris, Doctor of Philosophy
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Major Professor: Dr. Michael Bertoch
Department: Psychology

The present study examined the effect of information about patient's dental anxiety on patient satisfaction, patient discomfort, and patients' perceptions of dental student behaviors. The validity of patients' perceptions was examined by independent observation of dental student behaviors on videotaped dental screening visits.

Thirty dental students each examined two dentally anxious female patients. Each student received information about one of the patient's dental anxiety and no information about the other. The order of presentation of the conditions information and no information was counterbalanced. The dependent measures were the Dentist Behavior Checklist, the Dental Visit Satisfaction Scale, the Patient Discomfort Item, and independent observervations of seven specific dental student behaviors.

Results of the present study suggest that patients' perceptions of specific dental student behaviors are only moderately correlated with independent observation for three of the behaviors. The presentation of information about

patient dental anxiety resulted in no significant differences in patients' perceptions of behaviors. A significant interaction effect was found, however, between information and order of presentation for the independent observations of Took Patient Seriously and Was Calm. These findings suggest that when nonverbal behaviors were examined, dental students were more responsive to patients. This was only true, however, when students received information in the Information/No Information order.

No significant differences were found in either patient satisfaction or patient discomfort as a result of providing information about patient anxiety. Lastly, none of the dental student behaviors as independently observed were related to patient satisfaction. However, patients' perceptions of Encouraged Questions and Took Patient Seriously were significant predictors of patient satisfaction.

Suggestions for further research include continued attempts to delineate dentist behaviors which are correlated with patient satisfaction.

(103 pages)

CHAPTER I

INTRODUCTION

In the past decade, patient satisfaction has become a topic of interest to those involved in the delivery of dental services. Church, Moretti, and Ayer (1980), in their review of issues related to the dentist-patient relationship, concluded that patient satisfaction is influenced more by interpersonal behavior of the dentist than by the dentist's technical competence. This finding has previously been demonstrated with medical patients (cf. Ben-Sira, 1976; Hornung & Massagli, 1979; DiMatteo, Prince, & Taranta, 1979).

A survey of the dental literature reveals that much has been written anecdotally about the importance of establishing rapport with patients, putting patients at ease, dealing with problem patients, and generally how to develop a mutually satisfying dentist-patient relationship (cf. Hirsch & Hittleman, 1978; Jackson, 1975; Deneen, Heid, & Smith 1973). In addition, a limited number of empirical investigations have been conducted to establish possible relationships between dentist behavior and patient satisfaction.

Corah, O'Shea, and Bissell (1985) have found a positive relationship between patient satisfaction and patient perceptions of specific dentist behaviors. However, this study also revealed that patient perceptions of dentist

behavior and patient satisfaction are mediated by patient anxiety. Anxious patients tended to be less satisfied with their dental visit and were less likely to report the occurrence of specific dentist behaviors (e.g. dentist washing his hands).

To date, dentist behaviors have been measured from patient's retrospective observations. Unfortunately, no one has demonstrated the reliability of patient perceptions of specific dentist behaviors. Thus, those specific dentist behaviors that are related to patient satisfaction remain unclear.

Dentistry is becoming increasingly sensitive to the special needs of patients who experience anxiety related to receiving dental treatment (Ingersoll, 1982). Dental school faculty are emphasizing the importance of asking patients about their dental anxiety and some have recommended the use of screening instruments. However, how the provision of information about patient anxiety to dentists may or may not inpact dentist behavior or patient satisfaction has not been studied.

Problem

Two major weaknesses exist in the dental literature. First, there has been no systematic investigation of dentist behavior in an effort to establish possible relationships between those behaviors and patient satisfaction. While there is some evidence relating patient perceptions of

dentist behavior to patient satisfaction, the validity of patient's reports of dentist behaviors has not been determined.

Second, the potential impact of receiving information about patient anxiety on dentist behavior, patient discomfort, and patient satisfaction has yet to be determined. Patient dental anxiety has been shown to be an important variable related to patient satisfaction with dental services. In studies that have examined the relationship between dental anxiety and patient satisfaction (Weinstein, Smith, & Bartlett, 1973; Moretti, 1983), the dentists treating these patients have been kept blind to patient anxiety level. Corah et al. (1985b) determined that certain specific dentist behaviors, as perceived by patients, did not appear to mitigate patient anxiety as expected. Given the relationship between patient anxiety and patient satisfaction, it would seem to follow that giving dentists information about patient anxiety might affect dentist behavior and subsequently impact patient discomfort and patient satisfaction.

Purpose

The purpose of this study is to first examine the validity of patients' perceptions of dental student behaviors by comparing reports of those perceptions with systematic, independent observation of specific dental student behaviors. Second, this study will examine the

effects of providing information to the dental student about patients' dental anxiety. The dependent variables will be specific dental student behaviors, patient satisfaction, and patient discomfort during a dental visit.

Third, the relationship between specific dental students behaviors and patient satisfaction will be investigated.

Questions

The following questions will be addressed in this study:

(1) What is the relationship between patient perceptions of specific dental student behaviors and independent observation of the corresponding specific dental student behaviors?

(2) What effect does giving information about patient's self-reported level of dental anxiety, along with brief instructions to attend to this anxiety, have on specific dental student behaviors?

(3) Is there a significant difference in the correlations between patients' perceptions of specific dental student behaviors and independent observation of these behaviors between groups where information regarding patients' anxiety is given to the student dentist, and where no information is given?

(4) What effect does giving information about patient's self-reported level of dental anxiety, along with

brief instructions to attend to this anxiety, have on patient satisfaction for a specific dental visit?

(5) What effect does giving information about patient's self-reported level of dental anxiety, along with brief instructions to attend to this anxiety, have on patient discomfort during a dental visit?

(6) To what degree can patient satisfaction with a dental visit be predicted by specific dental student behaviors?

CHAPTER II

REVIEW OF THE LITERATURE

This section will contain a review of the literature on the topics of patient satisfaction, patient satisfaction and dentist behavior, and patient satisfaction and patient dental anxiety.

Patient Satisfaction

In the health care field patient satisfaction with treatment has received increased attention in the last fifteen years (Ware, Davies-Avery, & Stewart, 1978). It has begun to be recognized as a critically important factor in enhancing the responsiveness of health care providers to the needs of patients (Vaccarino , 1977). Donabedian (1966) argued that patient satisfaction along with health care status is an ultimate outcome in evaluating medical care. A better understanding of what leads patients to be more or less satisfied with their care is needed. This type of information would appear to be potentially beneficial to health care providers in their interactions with patients.

Patient satisfaction appears to have an influence on several aspects of patient care as well as the profession of dentistry. For example, compliance has been linked to patient satisfaction. Davis (1968) found that satisfied patients are more likely to comply with medication regimens. Other health care behaviors such as appointment keeping have also been found to be influenced by patients' satisfaction

with treatment (DiMatteo & Hays, 1980). Finally, Biro and Hewson (1976) found that satisfied dental patients make twice as many visits and more regular dental visits than dissatisfied patients.

Patient satisfaction also appears to have several direct implications for dentists. Patients who are satisfied with their relationship with their provider are less likely to engage in malpractice suits (Vaccarino, 1977). In addition, the dentist's satisfaction with his/her career is closely related to the satisfaction of his/her patients (Ingersoll, 1982).

Dental school enrollments are steadily declining, partially in response to the large number of practicing dentists. Patients are in a position to be increasingly selective when choosing a dentist. It becomes incumbent upon dentists to behave in a manner that leads to patient satisfaction in order to ensure financial success. Collett (1969) suggests that dentists loose over 50% of their patients over a five year period and that half of these patients are lost due to reportedly poor interpersonal relationships with their dentists.

Kasteler, Kane, Olsen, and Thetford (1976) found, in a stratified sample of 576 families, that nearly half of the families had "doctor shopped" within the past year. Factors related to doctor shopping included lack of confidence in doctor's competence, unwillingness of the doctor to spend time talking with patients, hostile feelings toward doctors,

and unfavorable attitudes toward doctors' personal qualities. Ben-Sira (1976) also found patient dissatisfaction with their physician leads to seeking an alternative caregiver.

Hornung and Massagli (1979) investigated patients' affective responses to their physicians. They concluded that patients have two general goals in seeking health care services. One is receiving an accurate diagnosis and receiving appropriate treatment. Second is getting relief from anxiety and fear often attendant to illness.

Granted, the above studies are concerned with patient responses to their physicians, and may not generalize to dentists. Given the dentist's role in the provision of health care, it would seem very likely that there are a number of similarities in patient's responses to physicians and dentists. There may also be a number of differences which can be illuminated by the results of the present study.

There is evidence which suggests that patients are unable to determine the technical competence of their health care providers (Church et al., 1980). Patients tend to base their immediate satisfaction and judgements of competence on the interpersonal aspects of treatment (Ben-Sira, 1976). Thus, examination of dentist interpersonal behavior is likely to be important for understanding and predicting patient satisfaction.

Patient Satisfaction and Dentist Behavior

Linn (1971) and Ayer and Corah (1982), in landmark reviews, have suggested that dentist variables contributing to the dentist-patient relationship have been virtually ignored. Addressing factors affecting patient satisfaction with physicians, Doyle and Ware (1977) found five significant factors. These five factors were physician conduct, completeness of facilities, continuity of care, accessibility, and availability of family doctors. Physician conduct was measured by patient's responses to questions related to the art and technical aspects of the quality of care received and accounted for 41% of the variance among the five factors. Physician conduct was, by far, the most important factor studied.

This focus on provider conduct is not meant to imply that technical competence is not an important prerequisite for any practitioner. In the education and training of dentists, much emphasis is placed by dental educators on insuring the student's ability to provide technically correct dentistry (Dworkin, 1974). These skills are frequently assessed and subject to constant evaluation. However, when attempting to understand the relationship between dentist behavior and patient satisfaction with treatment, the interpersonal realm appears to play a particularly important role. While the interpersonal aspects of treatment are recognized as important by dental

educators, these skills are rarely subject to close and/or systematic evaluation (Jackson, 1975).

One limitation which has hampered the progress of investigations of the relationship between dentist behavior and patient satisfaction has been the lack of a measure of patient satisfaction for a specific dental visit. Previous measures (Hengst & Roghmann, 1978; Koslowsky, Bailit, & Vallugo, 1974; Murray & Wiese, 1975) have addressed general satisfaction with dentistry, but not satisfaction with a specific provider on a specific visit. The exception is Corah, O'Shea, Pace, and Seyrek (1984) who has attempted to provide such a measure with the development of the Dental Visit Satisfaction Scale (DVSS).

Corah modeled the DVSS after the Medical Interview Satisfaction Scale (MISS) developed by Wolf, Putnam, James, and Stiles (1978). The MISS is a 26 item self report measure of patient satisfaction with a specific encounter with a physician.

The original item pool for development of the MISS consisted of 63 items generated from interviews with patients, observations of consultations, and review of the literature. The 63 items were categorized into three dimensions of satisfaction with patient-provider interaction. The dimensions were cognitive, affective, and behavioral satisfaction. Cognitive items included those related to the physician's giving of information and explanations, the patient's understanding of the diagnosis,

etiology, prognosis, and the effects of treatment. Affective items included those assessing the patient's perception of dimensions of the patient-provider relationship such as trust and confidence in the physician, the physician's positive regard for the patient, and willingness to listen to patient's concerns. Behavioral items included patient's evaluation of physician's professional behavior, physical exam, diagnostic procedures, treatment, and advice.

This MISS was developed in three field trials with a total of 150 patients. Item remainder correlations and alpha coefficients demonstrated that the MISS is internally consistent. The MISS was also moderately skewed, with most of the cases falling in the upper three points of a five point scale. Wolf suggests that the MISS is less skewed, however, than most published satisfaction scales.

In a study of the validity of the MISS, Stiles, Putnam, Wolf, and James (1979) correlated MISS subscale scores with interviews in which the verbal interactions between patients and physician's were coded according to the discourse analysis system developed by the authors. Various types of verbal interactions were found to be significantly correlated with the different dimensions of patient satisfaction.

As a starting point for the DVSS, Corah et al.(1984) reworded the MISS items by substituting the word dentist for doctor. This modified instrument was then administered to

two samples. The samples were selected in order to maximize the variability on level of satisfaction. Fifty-seven regular private patients of different dentists were assessed. These subjects were assumed to be satisfied with their dentist because they continued to make regular return visits to the same dentist. A second sample of 48 subjects received treatment by an unfamiliar dentist who interacted with them only minimally. This latter sample was assumed to be less likely to be satisfied with their dentist and dental treatment due to minimal interaction with the dentist.

Factor analysis of these data yielded a factor stricture that clearly approximated the three dimensions of the original MISS. Ten items were then selected for the final scale. The result was a ten item scale with three items on each of the first and second dimensions, and four on the third. The dimensions were identified as Information-Communication (similar to Wolf's cognitive subscale), Understanding-Acceptance (similar to Wolf's affective subscale), and Technical Competence (similar to Wolf's behavioral subscale).

Reliability was examined by correlating the ten items, three subscales, and total satisfaction scores. Interscale correlations were .69 for Information-Communication (IC) and Understanding-Acceptance (UA), .51 for Information-Comunication (IC) and Technical Competence (TC), and.54 for Understanding-Acceptance (UA) and Technical Competence (TC). Internal consistency was determined using Cronbach's

coefficient alpha. Alpha for the total scale was .92, .94 for IC, .87 for UA, and .84 for TC.

Corah conducted another study to test the hypothesis that patient-dentist interaction is related to patient satisfaction. Additionally, this study was designed to further establish the reliability and validity of the DVSS.

Twenty-four patients of college age, 12 males and 12 females, were randomly assigned to two dentists. All patients were given the control condition (minimum interaction) on the first visit. On the second visit, all patients saw the other dentist. Half of the patients received the control condition again and half received the experimental condition (maximum interaction).

The control condition termed minimum interaction, specified the dentist to say very little to the patient (eg. giving only simple directions such as to open and close), perform the procedure, and leave. In the experimental conlition termed maximum interaction, the dentist encouraged discussion of treatment, explained the treatment, made recommendations, answered questions, and provided support and reassurance.

Data for the ANOVA of first visit scores was not presented. However, Corah reports no significant Group x Sex x Dentist differences. Results of the ANOVA conducted on second visit measures showed dramatic differences between groups with significantly higher satisfaction scores for the experimental group on the IC, UA, and Total satisfaction

subscales. No group differences were found on the TC subscale. Sex differences were significant only for the experimental condition, where females rated TC higher than males.

The authors concluded that the DVSS represents a valid and reliable research instrument for assessing patient satisfaction with a specific dental visit. One limitation of the DVSS, however, is that test-retest reliability was not addressed. While reliability was addressed through examination of item correlations and internal consistency, it would have been possible to accomplish this through readministration of the scale after a brief interval or by comparing results between the subjects involved in the two control conditions. Either of these methods of establishing reliability do not appear to have been utilized.

The experiment conducted to establish validity of the DVSS suffered from several limitations. A very small number of subjects was used, 12 in each group. Another limitation was that there was no monitoring of how well each dentist adhered to minimum and maximum interactions with the subjects. Additionally, the differences between the dentist behavior in the maximum and minimum interaction conditions, as described, are extreme. The conditions appear somewhat artificial. They do not appear to represent the typical range of behavior a patient might encounter across dentists.

In spite of these limitations, these two studies do make an attempt to develop and validate a measure of patient

satisfaction for a specific dental visit, and do make an effort to establish a relationship between dentist interaction styles (behavior) and patient satisfaction. The DVSS was able to dramatically differentiate the two groups. The DVSS was also based on a previously validated instrument, the MISS, and was subjected to closer examination of reliability and validity than previous satisfaction measures. The validation study also gives added strength to the notion that level of patient satisfaction is related to differences in dentist behavior.

In a similar vein, Gale, Carlsson, Eriksson, and Jontell (1984) attempted to answer the question of how the dentist's behavior affects subsequent attitudes of patients. Sixteen patients, 8 males and 8 females, were seen for two restorative treatment sessions. Two dentists, one male and one female, participated in the experiment. Each dentist was trained and rehearsed to be able to demonstrate a set of interactive and a set of noninteractive behaviors with patients.

In the interactive condition: the dentist welcomed the patient; introduced him/herself; conversed with the patient on a general topic not related to dentistry; informed the patient of which tooth was to be worked on; the necessity of an injection; initiated more general conversation; continued asking the patient for feelings; initiated a short conversation post treatment; and told the patient goodbye.

In the noninteractive condition: the patient was seated by the nurse; the dentist entered and washed his hands; looked at the x-rays; told the patient an injection was necessary; injected the patient; left the room; and then returned to complete the treatment with no further conversation with the patient. When treatment was completed, the dentist left without saying anything to the patient.

The procedure was carried out in a counterbalanced fashion so that each patient was seen by both dentists and received both dentist behavior conditions. Patients were then asked, at the end of each treatment session, to rate each dentist on a patient attitude scale which contained nine items. The attitude scale contained three items related to technical competence and six items related to interpersonal qualities of the dentist.

A four-way mixed ANOVA produced one significant main effect for dentist behavior. Both dentists were seen as equally competent, while the dentists in the interactive condition were rated higher on interpersonal qualities.

Patient satisfaction with a specific dentist at a specific visit was not assessed by Gale et al. (1984). However, the importance of the impact of dentist behavior on patient's ratings on interpersonal variables is suggested. The results of this study also provide additional evidence for the notion that judgements of technical competence are not affected by differences in interaction style. This

study had a small number of subjects. Also, there was no monitoring of how strictly each dentist adhered to the interaction script.

Studies focusing on the relationship between dentist behavior and patient satisfaction seem to suggest that dentist behavior is related to patient satisfaction. That is, in studies where patients received more positive interaction from the dentist, patients were signficantly more satisfied with treatment.

However, while several studies designed to examine physician-patient interaction have used independent observation to assess physician behavior (cf. Smith, Polis, & Hadac, 1981; Comstock, Hooper, Goodwin, & Goodwin, 1982; Weinberger, Greene, & Mamlin, 1981; Freemon, Negrete, Davis, & Korsch, 1971), the dental literature has not pursued investigation along these lines. The role of specific dentist behaviors with regard to patient satisfaction remains unclear.

Patient Satisfaction and Patient Anxiety

Thus far this review has focused on dentist variables and their potential contribution to patient satisfaction. Additionally, patient dental anxiety has been shown to be an important variable in studies of patient satisfaction. Anxious patients have been found to be less satisfied with their dental treatment (Moretti, 1983; Weinstein, Smith, & Bartlett, 1973). Corah et al. (1985b) also found that

anxious patients tended to be more critical of their dentist. Corah has suggested that anxious patients may be less satisfied with their dentist regardless of the dentist's behavior.

Corah, O'Shea, and Ayer (1985) also found in a survey of 746 dentists that the majority of dentists are reluctant to inquire directly about their patient's anxiety, and that nearly two-thirds of the dentists would avoid doing anything to mitigate their patient's anxiety as long as the patient was cooperative. Additionally, it was found that nearly 80% of the dentists were themselves anxious with anxious patients and that most endorsed talking as a way to intervene with anxious patients. What is suggested is that dentists see patient anxiety as an important problem, but tend to avoid addressing the problem if possible.

Screening procedures for patient anxiety are important and have been recommended. However,to date, there is no empirical evidence documenting the possible impact of giving a dentist information about a patient's dental anxiety on the way in which the dentist and patient interact or on subsequent indices of patient satisfaction (Bryant, 1983).

In an effort to examine the possible interrelationships of the three variables discussed in this review, Corah et al. (1985b) conducted a study examining the relationship between patient perceptions of dentist behavior, patient anxiety, and patient satisfaction. Unlike previous studies, the author did not attempt to

experimentally manipulate the dentist's behavior. Again the DVSS was used as the dependent measure of patient satisfaction as well as patient self reported anxiety during treatment.

A series of 21 positive dentist behaviors thought to be related to patient satisfaction and anxiety reduction was developed for this study. Two major sources were used in the development of the behavior checklist. The first source was Janis' (1982) theoretical analysis of helping relationships. The second was an informal survey of adult patients assessing, through self-report, what their dentists did to lessen anxiety during treatment. The 21 item checklist was termed the Dentist Behavior Checklist (Corah et al. 1985b).

Subjects for this study were 231 patients being treated at a public hospital dental clinic. Prior to treatment each subject filled out the Dental Anxiety Scale (Corah, 1969). The Dental Anxiety Scale (DAS) is a four item scale which asks the patient to rate his/her subjective reactions to the prospect of various components of a dental visit (eg.waiting for the dentist to come into the room, waiting while the dentist gets out the drill).

After treatment each subject completed the following instruments: (1) the DVSS; (2) a one-item rating scale of discomfort experienced during treatment (Corah, 1969); and (3) the Dentist Behavior Checklist as to whether the behavior occurred (yes) or not (no). If the subject was

uncertain of whether the behavior occurred or not, he/she endorsed a "no" response.

Correlational analysis between patient perception of dentist behavior and patient satisfaction demonstrated that most of the dentist behaviors were statistically significantly associated (<.05) with patient satisfaction. However, these correlations were uniformly low and ranged from .14 to .33.

Four stepwise multiple regression analyses were conducted to assess the contribution of the various dentist behaviors to the four scales of patient satisfaction on the DPSS. Results of the analyses are as follows.

A multiple R of .33 was achieved for the Information-Communication subscale using the following behavior items: (1) dentist explained procedure; (2) had a calm manner; and (3) encouraged patient to ask questions about treatment.

The Understanding-Acceptance subscale had a multiple R of .48 using the following behavior items: (1) dentist took the patient seriously; (2) had a calm manner; (3) said reassuring things; and (4) did not criticize the patient's teeth or care of his/her teeth.

A multiple R of .50 was achieved for the Technical Competence subscale using the following behavior items: (1) dentist had a calm manner; (2) said reassuring things; (3) used words that were understandable; and (4) took seriously what the patient had to say.

Lastly, the Total Satisfaction subscale had a multiple R of .53 using the following behaviors: (1) dentist said reassuring things; (2) had a calm manner; (3) took the patient seriously; (4) used words that were understandable; and (5) did not criticize the patient's teeth or care of his/her teeth.

It is suggested by these findings that there are seven behaviors which are significantly correlated with patient satisfaction scores on the DVSS. These patient perceived behaviors are: 1) had a calm manner; 2) took the patient seriously; 3) was reassuring; 4) was understandable; 5) did not criticize patient's teeth; 6) explained the procedure; and 7) encouraged questions.

While this study provides further evidence that there is a relationship between dentist behavior and patient satisfaction, a number of limitations are apparent. The most glaring problem is the sole reliance on patient perceptions of dentist behavior. More anxious patients appear to have endorsed behaviors which less anxious patients did not (eg. dentist did not wash his hands, dentist did not take me seriously). No independent observation of dentist behavior was made to validate patients' perceptions. One possibility is that patients' perceptions of dentist behavior do not coincide with dentist behaviors as they may actually have occurred. Sole reliance on patient perception leaves this unascertainable.

Another possibility, left unexplored, is that dentist behavior is different with anxious patients.

While those behaviors identified by Corah et al. (1985b) as important in predicting patient satisfaction may not be exhaustive, they do represent a starting point for further investigation.

In none of the studies reviewed were dentists given any information regarding the dental anxiety level of the patients that they were examining or treating. This is seen as another significant weakness in the literature given that patient anxiety or fear has been judged to be the most frequently encountered problem for dentists (Corah et al., 1985a; Ingersoll, 1982), and the most important impediment to patient satisfaction.

CHAPTER III

METHODOLOGY

Design

The design of the present study is a two-factor experiment with repeated measures. Each dental student in the study saw two patients. The student received information about the dental anxiety of one of the patients and no information about the dental anxiety of the other patient. Whether the information about patient dental anxiety was provided for the first or second patient of each pair was randomized throughout the dental student sample.

Subjects

Thirty male, senior dental students between the ages of 21 and 35 years served as subjects in this study. Dental students were recruited from those students on one-week rotation at the University of Oklahoma College of Dentistry's Oral Diagnosis and Screening Clinic. All students who participated in this study had had an equivalent amount of clinical experience and training.

Sixty dental patients from the clinic were also used in this study. These subjects were 60 females with a mean age of 35 years (s.d. 9.2; range 20-59) and who had not had a previous screening examination at the Oral Diagnosis and Screening Clinic. Only patients with self-reported anxiety scores falling above the mean on the Dental Anxiety Scale

were selected. The mean Dental Anxiety Scale score for the patient sample was 13 (s.d. 2.5; range 10-20).

Procedure for Patients

All female patients reporting to the screening clinic were greeted by the experimenter and given the following information:

> "I am conducting a research study here at the College of Dentistry. As part of that study, I am asking all women who come to this clinic for a screening exam to fill out a very brief questionnaire. The questions have to do with how you feel about various aspects of a dental visit. Your participation is voluntary and your answers are confidential. Whether or not you participate will not affect whether or not you are accepted for treatment. Neither will it affect the grade of the dental student who sees you today. If you agree to participate, I may be contacting you further before you are seen for your examination."

Those patients who agreed to participate were given a Request for Participation (see Appendix A) and a copy of the Dental Anxiety Scale to complete (see Appendix B). When returned, the DAS was immediately scored by the experimenter. Patients with scores falling above the mean on the Dental Anxiety Scale were eligible to serve as subjects. The two highest scoring patients on a given day were approached individually and asked to participate further in the study by agreeing to have their screening examination videotaped and answer some questions about their dental visit when it was completed. These two patients, once they agreed to participate, constituted the pair of subjects, matched on dental anxiety, who would be seen by

the same dental student. The study was described to the prospective patient subject and informed consent was obtained (see Appendix C). Each subject was then asked to complete the History Questionnaire (see Appendix D) and wait to be seen by a dental student for their screening examination.

The screening examination received by each patient consisted of six basic phases: (1) review of dental school treatment policies with the patient; (2) review of patient's medical and dental history; (3) brief oral examination, with instruments, to make a preliminary determination of the extent of the patient's dental needs and whether or not she would be a suitable patient for treatment at the dental school; (4) x-rays, both panorex and bite-wings, taken by an x-ray technician; (5) a more extensive examination of the patient's teeth is made including peridontal probing and charting of existing restorations and dental problems, ie. tooth decay; and (6) a preliminary treatment plan is reviewed with the patient.

After completion of the screening exam, each patient completed the following: (1) Patient Discomfort Item (Appendix E); the Dental Visit Satisfaction Scale (see Appendix F); and the Dentist Behavior Checklist (see Appendix G). The patient was then asked if she wished to have a written copy of the results of the study when it was completed. The name and address of each subject who wished to receive a written copy of the results were recorded by

the subject on a piece of paper. When the packet was returned to the experimenter, the name and address of the subject were removed and placed in a separate folder.

Patient pairs were unable to be matched on severity of dental problems prior to the dental screening. After the screening examination, only those pairs of patients where both were either accepted or rejected for treatment were retained as subjects.

Procedure for Dental Students

The experimenter met with all dental students assigned to the Oral Diagnosis and Screening Clinic on the first morning of their week's rotation. Students were told the following by the experimenter:

> "I am conducting a research study and would like for each of you to participate. Your participation is voluntary, confidential, and in no way will you be subject to evaluation nor will your participation or refusal to participate affect any of your grades. Should you agree to participate you should expect that several of your screening examinations will be videotaped at some time during this week. You will receive information from me about some of the patients you will see, for others you will receive no information."

Informed consent was obtained for all students agreeing to participate (see Appendix H). The students were then shown how to attach a wireless microphone. At the beginning of each week a schedule was made indicating which student would be filmed during each screening session of the week. This schedule was known only to the experimenter. Some, but not all of the students had had experience being videotaped in the past. During the week students had the opportunity

of seeing the camera location and how the taping was conducted. This served to help desensitize students to the presence of the videotape equipment.

On a given day of data collection, the dental student received the chart of the first member of the selected pair of patients. He was given this chart by the clinic co-ordinator according to the clinic's standard operating procedure. The student received no information from the experimenter about the patient's dental anxiety. Prior to seeing the second member of the patient pair, the dental student received written information from the experimenter about the patient which was placed on the front of the patient's chart. This information indicated that the patient was anxious and could probably benefit from attempts on the student's part to decrease the patient's anxiety (see Appendix I). A line was provided on the form for the student to initial, indicating that he had read the same.

The information and no information conditions were presented in a counterbalanced manner. That is, half of the dental students received the information condition first followed by the no information condition. The other half received the no information condition first followed by the information condition. Counterbalancing was used to control for possible order effects. Students were randomly assigned to the two experimental conditions.

Each session was videotaped and students were asked not to discuss the experiment with any other students.

Procedure for Videotaping

The video camera was placed on a tripod approximately 20 feet in front of the dental operatory. Recording was remotely controlled from a room located in the clinic, but not in the direct view of the student or patient. Recording was begun when the patient was seated in the chair. Recording continued while the student was in the immediate presence of the patient. Recording was terminated when the patient was dismissed.

The original tapes were assigned to the VHS tapes in such a manner as to maximize the time between observing the same student, although with different patients. This was done in an effort to keep the independent observers blind to the experimental conditions.

Procedure for Independent Observers

One clinical psychology graduate student and one upper level undergraduate psychology student were trained to observe and record the dentist behaviors from the videotapes made during the screening exams. Training took place over a 10 hour period. Four video tapes, made during the preliminary phase of this study, were used for training. The students and patients viewed on these tapes did not serve as subjects in this study.

During training session 1, the list of dental student behaviors were reviewed. The Observer's Checklist of Dental Student Behaviors (OCDSB) (see Appendix J) was used in the

training of the observers. The method of recording responses was also reviewed and the observers were acquainted with the use of the videotape playback unit. They were then asked to observe and record one of the tapes to help determine if they could identify these behaviors relatively untrained. The tape was replayed and stopped at points of disagreement and the definition reviewed.

During session 2, the independent observers viewed and recorded behaviors from one of the training tapes, and inter-rater reliability was calculated. They continued to observe and make recordings from the same tape until reliability of greater than 85% was acheived. Finally they reviewed an additional tape. Retraining was not necessary due to the high rates of inter-rater reliability.

Observation of the study tapes was then begun. Both observers remained blind to the experimental condition. The primary observer viewed all of the tapes. The secondary observer viewed and recorded the behaviors from every third tape.

Inter-rater reliability was calculated on every third tape. The mean scored-interval/unscored-interval method was used. This method has been recommended by Lech and Ascione (1981). The formula is the mean of the scored-interval (number of agreement on occurrences / number of agreements on occurrences + number of disagreements x 100) and the unscored-interval (number of agreement on nonoccurrences /

number of agreements on nonoccurrences + number of disagreements x 100).

Data were collected by the independent observers using interval recording. All observation data were recorded on data recording sheets provided for this purpose (see Appendix K). While observing the videotape of a specific visit, the observer heard instructions to "observe" followed by the epoch number, eg. "Observe One". Fifteen seconds elapsed and the observer heard instructions to "record" followed by the epoch number, eg. "Record One". The record period lasted 5 seconds. The tape continued to instruct the independent observers to observe and record throughout the duration of the specific dental visit. During the reliability checks, both observers recorded the same specific dental visit.

Approximately half-way through the tape observation process, the secondary rater was lost due to his relocation. A new rater was trained by the experimenter using the original training procedure. This rater then served as the second rater for the remainder of the tapes. Interrater reliability remained above 85% through the remainder of the observations.

Measures

Dental Anxiety Scale. The DAS (Corah, 1969) is a four item instrument designed to assess dental anxiety. The scale instructs the individual to rate his/her subjective reactions about going to the dentist, waiting in the

dentist's office before the procedure, and anticipation of drilling and scaling. Responses choices are "a" through "e" ("relaxed" to "so anxious that I sometimes break out in a sweat or almost feel physically sick"). On this scale each (a) response endorsed is given a score of 1, each (b) a score of 2, each (c) a scores of 3, each (d) a score of 4, and each (e) a score of 5. A total score is then calculated.

The DAS has been significantly correlated with dentist's ratings of patient anxiety (Corah, 1969), and dissatisfaction with treatment (Weinstein, et al., 1973). A number of studies have been conducted that support the reliability and validity of the DAS. Corah, Gale, and Illig (1978) administered the DAS to 1,232 college students. Using the Kuder-Richardson Formula, he obtained a coefficient of .86 for internal consistency on a sample of 313. A coefficient of .82 was obtained for test-retest on a sample of 171 with a 3 month interval between administrations.

Gale and Ayer (1969) conducted a treatment program using systematic densensitization with a group of 20 dental phobics. Post treatment measures on the DAS were significantly lower than pre-treatment scores. Reduction of DAS scores was maintained one year post-treatment. In addition, Weisenberg, Kreindler, and Schachat (1974) found a significant relationship between dental emergency patients' scores on the DAS and their State scores on the State-Trait

Arxiety Inventory. DAS scores have also been found to be correlated with patients' Palmar Sweat Index (PSI), a physiological measure of stress.

Predictive validity of the DAS has been demonstrated in at least two studies. Corah (1969) found that DAS scores were associated with greater stress in response to a simulated dental procedure. Auerbach, Martelli, and Mercuri (1983) found the DAS able to predict differential elevations in patient's anxiety levels during dental procedures.

The above findings would seem to support the DAS as a valid and reliable instrument for the assessment of dental anxiety. It is considered an appropriate measure for distinguishing dentally anxious vs. dentally non-anxious patients. Norms have been obtained on a number of sample populations including a sample of 750 dental school clinic patients. Local norms have been established for the dental patients coming to the University of Oklahoma College of Dentistry's Oral Diagnosis and Screening Clinic (Morris & Mason, 1986) These norms were used as the basis for subject selection.

Dental Visit Satisfaction Scale. The DVSS is a ten item Likert-type scale designed to assess patient satisfaction with a specific dental visit. The patient is asked to respond to ten statements on a scale of 1 to 5 (strongly disagree to strongly agree). Scores are obtained on four subscales: (1) Information-Communication; (2) Understanding-Acceptance; (3) Technical Competence; and

(4) Total Satisfaction. This measure has been demonstrated to be internally consistent, but reliability has not been examined. The DVSS has been shown to discriminate two groups of patients who received different levels of interaction from their dentist (Corah et al., 1984).

Treatment Discomfort Item. This item asks the patient to rate her degree of discomfort during a specific dental visit. The item is rated on a seven point scale from calm/relaxed to tense/upset. This item has been used in a number of studies relating to dental anxiety reduction. Discomfort ratings have been shown to be related to dental anxiety and ratings of pain in patients receiving treatment for dental anxiety.

History Questionnaire. A history questionnaire has been developed for this study which includes demographic information, information regarding patient's dental history, current assessment of oral status, and satisfaction with previous dentist.

Dentist Behavior Checklist. The DBC is a seven item checklist of dentist behaviors taken from Corah et al. (1985b). These seven dentist behaviors were found to be significantly correlated with patient's ratings of satisfaction with a specific provider on a specific visit, as measured by the DVSS (Corah et al., 1984). The patient is asked to respond to seven dentist behaviors on a scale of 1 to 4 (not at all to very often) indicating how often the specific dentist behavior occurred.

Observer's Checklist of Dental Student Behaviors. The OCDSB was developed for this study. Operational definitions for each of the seven target behaviors were developed. Three psychologists reviewed these definitions to assist in the development of reliable criteria. The OCDSB was used as the guideline for observing and recording dental students behaviors from the videotapes. The OCDSB contains the same seven dental student behaviors as the patient's behavior checklist. High levels of inter-rater reliability suggest that these behaviors are discrete and able to be reliably identified.

CHAPTER IV

RESULTS

Patient Perceptions and Independent Observation

To examine the relationship between patients' perceptions of seven specific dental student behaviors and independent observation of the corresponding behaviors, a Pearson product-moment correlation matrix was obtained for the Dentist Behavior Checklist (DBC) and independent observation (IO) of dental student behaviors. Table 1 contains the correlations between the seven specific dental student behaviors on the DBC and the seven corresponding behaviors as measured by IO.

Patients' perceptions of specific dental student behaviors and independent observation are significantly correlated in three of the seven behaviors under investigation. They were: (1) Explained Procedure (DBC) and Explained Procedure (IO) $r(60) = .46$, $p < .001$; (2) Critical Remarks (DBC) and Critical Remarks (IO) $r(60) = .60$, $p < .001$; and (3) Was Calm (DBC) and Was Calm (IO) $r(60) = .31$, $p < .01$. The amount of variance shared between the three statistically significant correlations was 21% (Explained Procedure), 36% (Critical Remarks), and 9% (Was Calm). No other correlations between behaviors on the DBC and the corresponding behaviors on the IO were found to be statistically significant.

Table 1

Correlations Between the Dentist Behavior Checklist (DBC) and Independent Observation for Corresponding Behaviors

	Independent Observation						
DBC	Exp	Enq	Und	Crt	Rsr	Ser	Clm
Exp	.46**	-.05	.04	-.14	.28	.20	.22
Enq	.17	.16	.05	-.06	.03	.18	.32*
Und	.13	.09	.00	-.06	.10	.09	.19
Crt	.08	-.10	-.00	.60**	-.00	-.15	-.16
Rsr	.20	.09	.02	-.20	.08	.12	.08
Ser	-.05	.03	-.05	-.03	-.08	.16	.06
Clm	.28	.07	-.15	.03	.10	.22	.31*

* $p < .01$
** $p < .001$

Exp = Explained Procedure
Enc = Encouraged Questions
Und = Was Understandable
Crt = Critical Remarks
Rsr = Was Reassuring
Ser = Took Patient Seriously
Clm = Was Calm

Information and Dental Student Behaviors

A two-factor MANOVA with repeated measures on one factor was computed using the items from the Dentist Behavior Checklist as the dependent variables. The behaviors were: (1) Explained Procedure; (2) Encouraged Questions; (3) Was Understandable; (4) Critical Remarks; (5) Was Reassuring; (6) Took Patient Seriously; and (7) Was Calm. The independent variables Condition (information vs. no information) and Order (of presentation of Condition).

None of the multivariate analyses were found to be statistically significant. Wilks' Criterion for Order, Condition, and the interaction were: $F(7,22) = .34$, $p = .92$; $F(7,22) = .40$, $p = .88$; and $F(7,22) = 1.67$, $p = .16$, respectively.

These results indicate that the seven specific dental student behaviors, as measured by patients' perceptions, did not differ significantly between the information and no information conditions.

Another two-factor MANOVA with repeated measures on one factor was performed using independent observation (IO) of the seven dental student behaviors as the dependent variables. The independent variables were Order (information followed by no-information vs. no-information followed by information) and the repeated measure, Condition (information vs. no-information).

For the combined dependent variables, Wilk's criterion indicated that there was no significant Order effect,

$F(7,22) = .81$, $p = .58$, and no significant effect for Condition, $F(7,22) = 1.45$, $p = .23$. A significant Order x Condition interaction was indicated, $F(7,22) = 2.4$, $p < .05$.

The simple effects of Condition within Order for the seven specific dental student behavior (IO) were then examined to understand the nature of the significant Order X Condition interaction. This was accomplished with computation of a one-way MANOVA for each level of Order. The results of these analyses indicated that there was no significant overall effect for Condition within either Order. The examination of Condition within Order, resulted in a loss of degrees of freedom. Because these analyses were less powerful, each of the individual one-way ANOVAs was examined in an effort to further understand signficance of the Order X Condition Interaction.

Examination of the individual ANOVAS revealed that in the Order Information/No Information, the Condition means for two of the dependent variables were significantly different. One dependent variable, Took Patient Seriously (IO), yielded an $F(1,14) = 16.00$, $p = .001$. The interaction effect for this variable is depicted in Figure 1. Dental students were rated significantly higher on the variable Took Patient Seriously when students received information ($M = 3.3$) than when they received no information ($M = 2.8$) for the Information/NoInformation Order. In the NoInformation/Information Order there was no significant

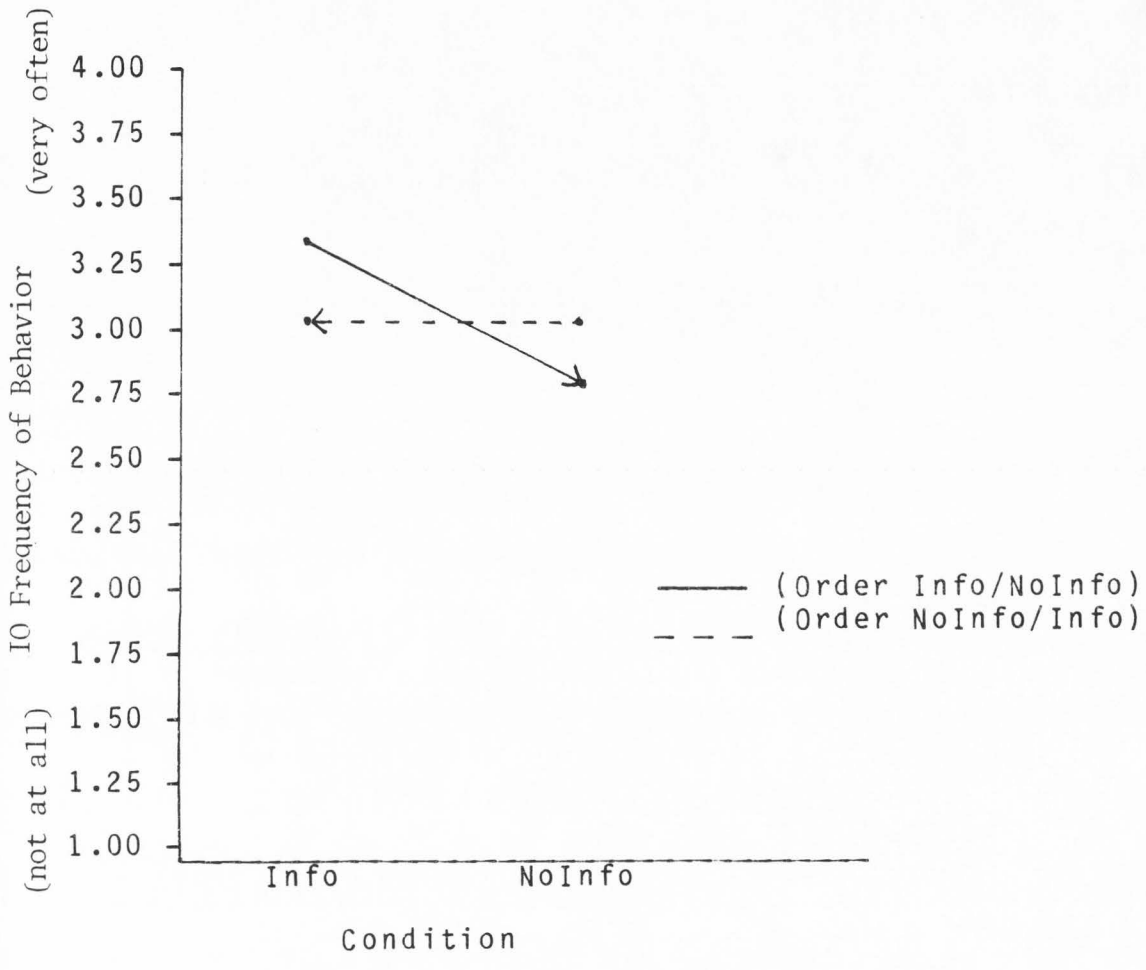

Figure 1. Interaction effect of Order x Condition for behavior: Took Patient Seriously

difference in Took Patient Seriously from the no information (M = 3.06) to the information condition (M = 3.06).

Another item assessed by independent observation, Was Calm, was found to be significiantly higher when dental students received information (M = 3.33) than when they received no information (M = 2.93) in the Information/No Information Order. A univariate $F(1,14) = 9.33$, $p = .008$ was acheived. In the NoInformation/Information Order there were no significant differences in the ratings of Was Calm in the no information (M = 3.06) and the information condition (M = 3.0). The significant Order X Condition interaction for Was Calm is depicted in Figure 2.

These results indicate that in the Information/ No Information Order, Took Patient Seriously and Was Calm scores were significantly higher when information was provided than when no information was provided. There was no significant difference, however, providing information and providing no information for the No Information/ Information Order.

Information, Patient Perceptions, and Independent Observation

The following analysis was conducted to examine whether there were significant differences in the correlations of patients' perceptions of specific dental student behaviors and independent observation of the same behaviors between the information and no information conditions. Pearson product-moment correlation coefficients were obtained for

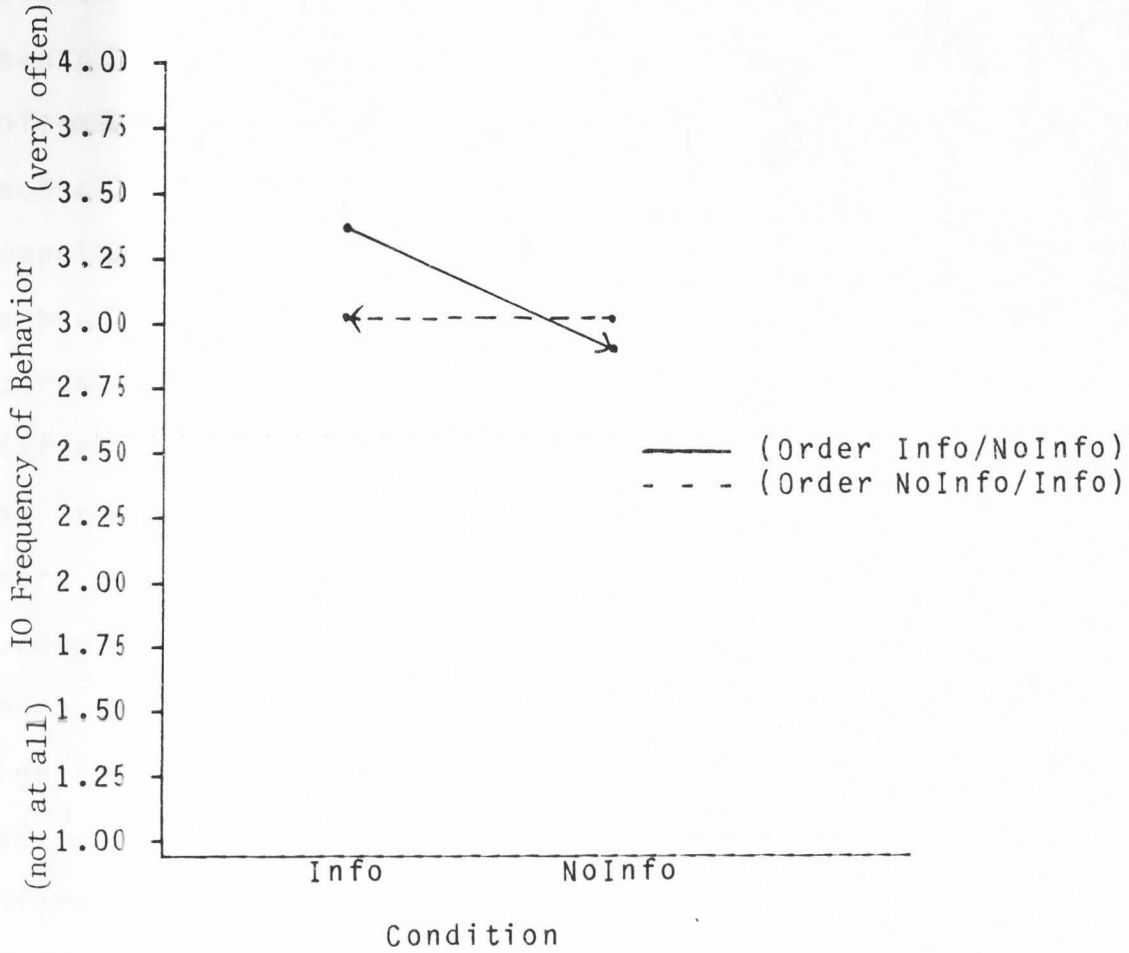

Figure 2. Interaction effect of Order x Condition for behavior: Was Calm

the seven items on the DBC and the corresponding behaviors observed by independent observers. The correlations were then partitioned by experimental groups (information and no information). Fisher's zr transformations were obtained for each correlation (Ferguson, 1976). A z score was then computed for each behavior, using the z transformation from each experimental group. Examination of the resulting z scores revealed one behavior which had significantly different correlations between conditions. This behavior was Critical Remarks ($z = -4.9$, $p < .01$). This significant z score indicates that the correlation between patients' perceptions of the behavior, Critical Remarks and independent observation of the corresponding behavior were significantly different in each condition. The correlation between the DBC and independent observation in the information condition was -.06 compared to a correlation of .79 in the no information condition. A summary of these results is contained in Table 2.

Information and Patient Satisfaction

A two-factor analysis of variance with repeated measures on one factor was performed to examine the effect of the experimental manipulation (dental students receiving information or no information about patient's dental anxiety) on patient satisfaction. The dependent variable was the Total score on the Dental Visit Satisfaction Scale. The two independent variables were Order and Condition.

Table 2

Differences in Correlations Between DBC and Independent Observation by Group

	Info	z(r)	NoInfo	z(r)	z
Exp	.50	.549	.46	.497	.19
Enq	.27	.277	.05	.05	.81
Und	-.16	-.16	.11	.11	1.0
Crt	-.06	-.06	.79	1.07	-4.9**
Rsr	.06	.06	.10	.10	-.15
Ser	.03	.03	.21	.213	-.68
Clm	.31	.321	.34	.354	-.12

** $p < .01$

Exp = Explained Procedure
Enq = Encouraged Questions
Und = Was Understandable
Crt = Critical Remarks
Rsr = Was Reassuring
Ser = Took Patient Seriously
Clm = Was Calm

$$z = \frac{zr_1 - zr_2}{\sqrt{1/(N_1 - 3) + 1/(N_2 - 3)}}$$

No significant difference was found for Order, F (1,28) = .94, p = .34, or for Condition, F (1,28) = 1.09, p = .31. Additionally, there was no significant difference in the Order x Condition interaction, F (1,28) = 3.44, p = .07. The mean score for the information condition was 46.8 (s.d. = 3.3, range = 38-50) and 45.6 (s.d = 5.6, range = 27-50) for the no information condition. The ANOVA summary table is found in Table 3.

Information and Patient Discomfort

A two-factor analysis of variance with repeated measures on one factor was performed to examine the effect of the experimental manipulation (dental students receiving information or no information about patient's dental anxiety) on patient discomfort during a dental visit. The dependent variable was the Patient Discomfort Item. Order and Condition were the independent variables in this analysis.

Results reveal that there was no significant Order effect, F (1,28) = .68, p = .41, and no significant Condition effect, F (1,28) = .50, p = .48. The Order x Condition interaction effect was also not significant, F (1,28) = .30, p = .58. The mean discomfort score for patients in the information condition was 2.9 (s.d. = 1.5, range = 1-5) and 3.2 (s.d. = 1.9, range 1-7) for patients in the no information condition. The ANOVA summary table is in Table 4.

Table 3

Repeated Measures Analysis of Variance for Patient Satisfaction (DVSS) Scores

Source	df	Sums of Squares	F
Order	1	19.266	.94
Error	28	575.066	
Condition	1	21.600	1.09
Condition x Order	1	68.266	3.44
Error	28	556.133	

Table 4

Repeated Measures Analysis of Variance for Patient Discomfort During a Dental Visit

Source	df	Sums of Squares	F
Order	1	2.016	.68
Error	28	83.066	
Condition	1	1.350	.50
Order x Condition	1	.816	.30
Error	28	75.330	

These results suggest that patients' ratings of discomfort during a dental visit did not differ significantly between the two experimental groups, information and no information.

Dental Student Behavior and Patient Satisfaction

The relationship between the seven specific dental student behaviors and patient satisfaction was investigated using correlation and stepwise multiple regression analyses. The stepwise multiple regression procedures used specific dental student behaviors as the predictors and subscales 1, 2, 3, and Total from the Dental Visit Satisfaction Scale (DVSS) as the critera.

First, the seven specific dental student behaviors as measured by Independent Observation were considered as predictors. A Pearson product-moment correlation matrix was obtained between the seven behaviors (IO) and the three subscales and Total score of the DVSS. Those correlations are contained in Table 5. Examination of the correlation matrix revealed that correlations between these variables ranged from .00 to -.13. The stepwise procedure considered for use in these analyses did not allow variables to enter the regression equation if they had a correlation with the criterion of <.15. Therefore, no regression analyses were attempted.

These nonsignificant correlations between specific dental student behaviors (IO) and patient satisfaction as

Table 5

Correlations Between Independent Observation of Dental Dental Student Behavior (IO) and the Dental Visit Satisfaction Scale (DVSS)

	DVSS			
IO	IC	UA	TC	TOTAL
Exp	.02	.00	-.03	.00
Enq	.08	-.06	-.13	.03
Und	-.09	-.08	-.07	-.11
Crt	.04	.05	.04	.02
Rsr	.02	.01	.00	.01
Ser	.06	.03	.08	.08
Clm	.13	.10	.05	.12

Exp = Explained Procedure
Enq = Encouraged Questions
Und = Was Understandable
Crt = Critical Remarks
Rsr = Was Reassuring
Ser = Took Patient Seriously
Clm = Was Calm

IC = Information-Communication
UA = Understanding-Acceptance
TC = Technical Competence

measured by the DVSS suggest that overt dental student behaviors in an oral diagnostic setting and patient satisfaction with dental students in this setting shared virtually no common variance. These results suggest that none of the IO behaviors were able to explain any significant portion of the variance of the DVSS subscales.

A Pearson product-moment correlation matrix was obtained between the seven specific dental student behaviors as measured on the DBC and the three subscales and Total score of the DVSS. The correlations in the resulting matrix ranged from .00 to .46. These correlations are contained in Table 6.

Stepwise multiple regression equations were then formulated using dental student behaviors from the DBC as the predictors, and each of the DVSS subscales, in turn, as the criterion. The first multiple regression used the Information-Communication subscale of the DVSS as the criterion. Encouraged Questions and Was Reassuring yielded an R2 of .24. However, only Encouraged Questions was significant. This result would indicate that, together, the two variables account for 4% of the variance in scores on subscale Information-Communication.

The second multiple regression used the Understanding-Acceptance subscale of the DVSS as the criterion. Encouraged Questions, Took Patient Seriously, Was Calm, and Explained Procedures yielded an R2 of .37. For this equation, Encouraged Questions and Took Patient Seriously

Table 6

Correlations Between the Dentist Behavior Checklist and Dental Visit Satisfaction Scale (DVSS)

	DVSS			
DBC	IC	UA	TC	TOTAL
Exp	.05	.29	.25	.23
Enq	.45**	.46**	.11	.43**
Und	.31*	.32*	.04	.29
Crt	-.26	-.01	-.02	-.14
Rsr	.38*	.42**	.23	.43**
Ser	-.00	.37*	.46**	.32*
Clm	-.06	-.10	.05	-.04

* $p < .01$
** $p < .001$

Exp = Explained Procedure
Enq = Encouraged Questions
Und = Was Understandable
Crt = Critical Remarks
Rsr = Was Reassuring
Ser = Took Patient Seriously
Clm = Was Calm

IC = Information-Communication
UA = Understanding-Acceptance
TC = Technical Competence

were significant. All four variables account for 9% of the variance in scores on subscale Understanding-Acceptance.

The third multiple regression used the Technical Competence subscale of the DVSS as the criterion. Took Patient Seriously was the only variable which entered the equation, was significant, and acheived an R2 of .21. Took Patient Seriously accounted for 4% of the variance in scores on subscale Technical Competence.

Finally, a multiple regression equation was formulated using the Total subscale of the DVSS as the criterion. Three variables entered the equation. They were Encouraged Questions, Was Reassuring, and Took Patient Seriously. Together they yielded an R2 of .29. However, only Encouraged Questions was significant. Table 7 contains the results of the four stepwise multiple regression analyses.

Table 7

Results of Stepwise Multiple Regression Analyses for the Prediction of DVSS Subscales Using DBC Items

Predictors	B value	F	R2
Information-Communication			
Encouraged Questions	.88	14.58***	
Was Reassuring	.60	3.04	.24
Understanding-Acceptance			
Encouraged Questions	.74	15.55***	
Took Patient Seriously	.94	6.65**	
Was Calm	-1.29	3.23	
Explained Procedures	.52	3.46	.37
Technical Competence			
Took Patient Seriously	1.59	15.76***	.21
Total			
Encouraged Questions	1.50	5.27*	
Was Reassuring	1.37	3.61	
Took Patient Seriously	1.63	2.51	.29

* $p < .05$
** $p < .01$
*** $p < .001$

CHAPTER V

DISCUSSION

One of the purposes of this study was to examine the validity of patients' perceptions of specific dental student behaviors by systematic, independent observation of the corresponding behaviors. Present results indicate that seven specific dental student behaviors can be reliably observed by independent observers, and that patients' perceptions of three of the seven corresponding behaviors are, at best, only moderately correlated with independent observation. These results suggest that using patients' perceptions of behaviors sheds little light on ascertaining what actually occurred during a dental visit according to independent observation.

One way to understand these findings is to examine the characteristics of the Dentist Behavior Checklist. The independent observers, in this study, had the benefit of specific behavioral definitions to guide them in the assessment of dental students' behavior. How the patients make use of the Dentist Behavior Checklist is not entirely clear. When presented with a specific question, ie. "The dental student told me what he was going to do before doing it", patients had the more difficult task of rating the frequency of that behavior.

An example of how patients responded to the Dentist Behavior Checklist was detected through observation.

Frequently patients endorsed "very often" as their response to the item "The dental student encouraged me to ask questions about my treatment", when in fact, observation of the dental visits revealed that the dental students rarely, if at all, encouraged patients to ask questions.

Given this type of response set, patients' perceptions appear to lack accuracy. They appear to be, as stated, patients' perceptions. As such they are likely to be influenced by memory, selective attention, and/or a socially desirable response set.

Another aim of this study was to examine the effect of providing information to the dental students about the patients' self-reported anxiety level on a number of dependent variables. These variables were seven specific dental student behaviors, patient satisfaction, and patient discomfort.

Examination of the findings obtained from independent observation suggests that five of the seven behaviors under investigation did not differ significantly between the information and no information conditions. One might speculate that knowledge of a patients' high level of anxiety would lead to changes in behaviors such as explaining the procedures more often or more thoroughly and being more reassuring. The present findings do not support this notion for the behaviors: (1) Explained Procedures; (2) Encouraged Questions; (3) Was Understandable; (4) Critical Remarks; and (5) Was Reassuring.

A significant interaction effect was found for two of the behaviors, Took Patient Seriously and Was Calm. These two behaviors were rated with a global rating scale identical to the scale used by patients on the Dentist Behavior Checklist. Receiving information did lead to more positive ratings of dental student behaviors, Taking Patient Seriously and Being Calm, but only when the students received information and received this information first. No change occurred between information and no information when no information was received first followed by information.

One interpretation of these results would suggest that the significant interaction occurred as a result of experimenter error. This error could have occurred either in execution of the procedure or as a result of the experimenter bias.

One possibility to consider is that the experimenter, in some way, communicated the information to the dental students differently for each Order. Several measures were taken to minimize this possibility. First, at the time informed consent was obtained, students were advised that while on rotation any of their screening examinations were eligible for recording. Also, they were advised that they would receive information about some of the patients and no information about others. The information was provided to students on a form that covered the patients' charts. Each patient's chart was given to the students by the clinic coordinator with no discussion of the "information". At

several times during the course of the study the dental students approached the experimenter regarding the appearance of the information. The experimenter responded "this is the information which I had indicated earlier that you would receive on some of your patients". An additional reason for limiting contact with the dental students regarding the information, was that the experimenter did know which condition a particular student was in at a particular time. By the design and execution of the procedure, experimenter error was minimized. However, this possibility cannot be completly eliminated.

Another possibility to consider is that dental students spent more time with the patients about whom they received information first, leaving less time for the examination of the second patient about whom they received no information. Alternatively, when they received no information about the first patient and information about the second, perhaps they were more likely to have spent equal amounts of time without feeling rushed and were therefore more consistent in their behavior.

To examine this possibility, a two factor ANOVA with repeated measures on one factor was computed using amount of time spent with the patients as the dependent variable. Results of this analysis indicated that there was no significant Order, Condition, or interaction effect for amount of time spent with patients.

Students were judged as more responsive to the patient when they received information and without information this effect dropped off. This would seem to indicate the students in the Order Information/NoInformation were responding to the information by attempts to take the patient more seriously and by remaining calm. Subsequently, when no information was provided, they took the patient less seriously and were less calm. For the students in the Order NoInformation/Information there was no differential reaction to the information condition. That is, there was no change in the behaviors being examined. It may be that these students assumed from the start that all patients were anxious and so responded accordingly. Perhaps dental students in the no information condition first felt that they were providing sufficient anxiety mitigating behavior and that there was no need to change when information was received.

A thorough interview with each of the dental students immediately following their participation would likely have helped to resolve some of the questions being posed by the findings of a significant interaction. This was not possible due to the imperative nature of not disclosing the experimental manipulation until the completion of the experiment.

Turning to the effect of information on patients' perceptions of specific dental student behaviors, information did not appear to significantly affect patients'

perceptions. This is not surprising given the finding that five of the seven dental student behaviors (IO) did not differ significantly between the information and no information condition.

Additionally, the effects of information on the relationship between patients' perceptions and independent observations of specific dental student behaviors was examined. A significant difference in correlations between conditions (information/no information) was found for one dental student behavior, Critical Remarks. The correlation of patients' perceptions and independent observation of critical remarks was considerably higher in the no information condition. Examination of the group mean for the two groups revealed no significant difference in behaviors, DBC or IO. It would appear that the patients' perception of Critical Remarks and independent observation of this behavior were in better agreement in the no information condition.

Findings of the current study suggest that dental students did respond differently when given information about the patients' anxiety level first. These differences in behavior do not, however, translate into differences in either of the two outcome measures used in this study, patient satisfaction or patient discomfort.

Corah et al. (1984) and Gale et al. (1984) found significant differences in patient satisfaction as a result of manipulating dentist behavior. The differences in

behavior were extreme (ie. minimal vs. maximum interaction) with the same patient being exposed to both experimental conditions. Dentist behaviors were not manipulated in the present study. The differences which do occur between the information and no information conditions are not reflected in patients' perceptions, patient satisfaction, or patient discomfort.

The final aim of the present study was to investigate the ability of specific dental student behaviors to explain, in a predictive fashion, patient satisfaction. Correlational analysis revealed that the relationships between specific dental student behaviors, as measured by independent observers, and patient satisfaction, as measured by the DVSS, were not significant. There is essentially no relationship between these variables as they were assessed in the present study.

The next step was the examination of patients' perceptions of dental student behaviors as predictors of patient satisfaction. The R2's in the present analysis are somewhat lower than those obtained by Corah et al. (1985b). There are clearly differences in the composition and size of the populations sampled, ie. gender, anxiety level, type of treatment. In addition the current study asked the patients to indicate the relative frequency of the behavior during the visit rather then simply indicating whether a behavior did or did not occur.

The patients' perceptions that the dental student encouraged questions and took the patient seriously emerged as small, but significant, predictors of patient satisfaction. These behaviors may not, in fact, have actually occurred with the frequency reported by the patients. However, the significant correlation between the patients' perceptions and patient satisfaction indicate its importance to patient satisfaction.

Limitations

Subjects. The subjects used in this study limit its generalizability. Only females were eligible to serve as patient subjects and only male dental students were asked to participate.

All female subjects were used for two reasons, both practical ones. Sixty percent of the patients coming to the dental school are female and females were found to have significantly higher scores on the Dental Anxiety Scale. Only male students were used for two reasons as well. One, 80% of the student body of the dental school is male. Secondly, gender differences were not under investigation. Studies have not generally explored the possible interactive effects of gender of the dentist and gender of the patient. Pairing male students with females patients, while limiting generalizability, allowed control for possible gender effects.

Another potentially limiting characteristic is the use of dental students and dental school patients. These results

are not necessarily generalizable to private dentists and private patients. However, dental school patients are a large population and the population upon whom dental students learn to perform dental procedures and with whom they learn to interact in their first dentist-patient relationships. Studies have not been conducted examining potential changes in interpersonal style which occur as the student moves from dental school into the private sector. It could be argued that the recently graduated dental student, now a practicing dentist, would not suddenly adopt a significantly different interpersonal dentist-patient relationship style when performing examinations on prospective patients.

Instrumentation

Corah (personal communication,1985) indicated that patients of private dentists, when responding to the DVSS, presented negatively skewed results (ie. patients were satisfied). One reported rationale for his choosing a public dental clinic was to assess a population who might have a less favorable response to their dentist. A negatively skewed distribution on the DVSS was found in the current study. This would suggest that patients were either very highly satisfied with their treatment or were reluctant to be critical of the students who saw them. An interesting and unexpected interpretation for the negatively skewed distribution of DVSS scores is that 50% of the patients

being examined had been on the dental school waiting list for from 6 months to 1 year. Twenty-five percent had been waiting for over one year. Having waited for so long, it might have created cognitive dissonance to be dissatisfied with the examination and/or dental student. Perhaps anxious patients were so relieved for their dental examination to be over and not have had the dental student criticize their teeth, that a halo effect on their responses was operative.

The Dental Anxiety Scale may also represent a weakness in this study. It has often been used as a variable, though not typically as a subject selection criterion. Results of the DAS have been used as independent variables in previous studies, but the dentist and/or dental students have been kept blind to the results of the DAS while interacting with patients. Patients indicated through their responses to DAS items that they experienced above average amount of anxiety at various points throughout treatment. However, the patients knew that no treatment was going to be performed and this may have lead to decreases in anxiety rather than anything that was said or done by the dental student.

Selection of the seven dental student behaviors for investigation was based on their reported relationship to patient satisfaction. Given the findings of little or no relationship between independent observations of the seven dental student behaviors and patient satisfaction, the method of independent observation may be sound, but possibly

other behaviors or variables would prove to be better predictors.

Summary

Results of the present study suggest that patients' perceptions of specific dental students behaviors are not accurate when compared with independent observation of the corresponding behaviors. This finding calls into question previous studies which have made inferences regarding dentist behavior on the basis of patients' perceptions. Corah et al. (1985b) found that anxious patients tended to under report certain behaviors. If anything, patients in the present study tended to over report positive behaviors and under report negative behaviors. Given the relatively painless and noninvasive nature of the dental examination, perhaps the patients in the present study were not feeling as anxious as they might under more painful or more invasive circumstances.

Patients perceptions revealed no differences in dental student behaviors between the experimental conditions, information vs. information. Independent observation revealed when students received information first that they were rated higher in taking the patient seriously and being calm than when they received no information second. For those students who received no information first, there was no significant change in the behavior variables taking the patient seriously and being calm.

Additionally there were no signficant differences in patients' satisfaction or patients' discomfort between the information and no information conditions. There was also no relationship found between dental student behaviors, as measured by independent observation, and patient satisfaction. Patients' perceptions of dental student behaviors, "encouraged questions" and "took patient seriously" were significant, though small, predictors of patient satisfaction.

These results seem to indicate that dental students' verbal behaviors, as presently assessed, did not change when the students received information and when they received no information. Results of the measure of patient satisfaction would indicate that the majority of patients were very satisfied with their dental visit. The present findings also indicate very little relationship between dental student behaviors as measured by independent observation and patient satisfaction.

Results of this study certainly question the validity of anxious patients in their reports of what occurred during a dental visit. It is also indicated that dental student behavior can be reliably observed by independent observers. Failure of the provision of information vs. no information experimental manipulation to lead to significant differences in the behaviors under investigation is puzzling. Given Corah's findings that dentists tend to avoid the issue of patient anxiety if at all possible, it would appear that

there was little in the way of extra explanation, reassurance, or encouraging questions for patients whom the dental student knew to be anxious. It should be noted, that while the data indicates that the dental students behaved relatively consistently across conditions, there was a broad range in the behavior of individual students toward patients. These differences were noted in the ratings of the independent observers, particularly in the global ratings for the behaviors Took Patient Seriously and Was Calm.

Some of the dental student subjects indicated to the experiementer that the patient did not seem anxious. According to the independent observers, however, the dental students did react to the information condition. This was primarily in the form of nonverbal behaviors which indicated to the patient that he took them seriously, ie. reponding to questions, maintaining eye contact with patient, and was calm, ie. proceeded smoothly from one part of procedure to another.

One of the goals of dental education is to teach dental students skills which are designed to increase the patient's understanding of their treatment, comfort, satisfaction with treatment, and increase the patient's commitment to the dentist-patient relationship. It is not sufficient to have these skills relegated to the category of students who either have "it" or don't have "it". The major contributions of the current study is found in its attempt

to further understand the impact of information about anxiety on dental student behavior and to further delineate those behaviors associated with patient satisfaction.

Future Research

Results of the current study are somewhat suggestive of a weak relationship between dental student behaviors, patient satisfaction, and patient discomfort. Given previous research and the current findings, a primary methodological problem in this area of investigation is ascertainment of what to measure and how to measure it.

Further research should be aimed toward continued delineation of dentist behaviors, verbal and nonverbal, which are correlated with patient satisfaction and decreases in anxiety level. One variable which has not been examined is the effect of patients' expectations on satisfaction with treatment.

The predictors of patient satisfaction may be different at different stages in the process of the dentist-patient relationship. That is, first visit vs. subsequent treatment visits. Also, the same variables examined in the present study could be examined in a similar method under a more stressful treatment visit, ie. have a tooth extracted or filled.

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APPENDICES

Appendix A

Request for Participation

I am conducting a research study looking at dental anxiety and patient satisfaction, and am asking your cooperation in completing the attached brief questionnaire.

Your participation is voluntary and your answers are confidential. Do not put your name on this form. Whether or not you choose to participate will not affect the decision as to your being accepted or rejected for dental treatment at the dental school. Neither will it affect the grade of the student who sees you today. You can withdraw from participation at any time.

Some of you who fill out this questionnaire will be asked to participate further. You will be asked to: (1) fill out a History Questionnaire (taking about 5 minutes); (2) agree to be videotaped during your screening examination (will take no additional time); and (3) answer a series of questions regarding your visit before you leave (taking about 10 minutes). With the exception of the questions and videotaping, your dental examination will be identical to the examination of those patient who are not research participants. You will not be contacted any further by me after your participation ends today.

Thank you for your cooperation.

Appendix B

Dental Anxiety Scale

Please answer each of the following questions related to your feelings about visiting the dentist. Circle the letter in front of the answer which is closest to how you feel.

(1) If you had to go to the dentist tomorrow, how would you feel about it?

(a) I would look forward to it as a reasonably enjoyable experience.
(b) I wouldn't care one way or the other.
(c) I would be a little afraid that it would be unpleasant and painful.
(d) I would be very frightened of what the dentist might do.

(2) When you are waiting in the dentist's office for your turn in the chair, how do you feel?

(a) Relaxed
(b) A little uneasy
(c) Tense
(d) Anxious
(e) So anxious that I sometimes break out in a sweat or almost feel physically sick.

(3) When you are in the dentist's chair waiting while he gets his drill ready to begin working on your teeth, how do you feel?

(a) Relaxed
(b) A little uneasy
(c) Tense
(d) Anxious
(e) So anxious that I sometimes break out in a sweat or almost feel physically sick.

(4) When you are in the dentist's chair to have your teeth cleaned. While you are waiting and the dentist is getting out the instruments which he will use to scrape your teeth around the gums, how do you feel?

(a) Relaxed
(b) A little uneasy
(c) Tense
(d) Anxious
(e) So anxious that I sometimes break out in a sweat or almost feel physically sick.

Appendix C

Patient Consent Form

University of Oklahoma Health Sciences Center
University of Oklahoma College of Dentistry

Consent for Participation in Research

I,_____, voluntarily agree to participate in the study entitled: "Investigation of Patient Dental Anxiety, Patient Satisfaction, and Dental Student Behavior" being conducted by Patrick J. Mason, Ph.D. and Kathryn Morris, M.S. This study is sponsored by the OU College of Dentistry in collaboration with the Department of Psychiatry and Behavioral Sciences.

I understand that:

1. Purpose This study examines the relationship between dental student behavior, patient satisfaction, and dental anxiety.

2. Description of Study I will be asked to a series of written questions prior to and following my screening examination. Also, there will be a videotape made of my dental examination.

3. Benefits The results of this study will be used to assist in the education and training of dental students to improve the quality of care which they provide to their patients. There are no direct benefits to me personally.

4. Risks There are no risks to me by participation in this study. If I choose not to participate in this study, I will still be able to be seen for evaluation for treatment according to the routine clinic procedure.

Whereas no assurance can be made concerning results that may be obtained, I understand that every precaution will be taken consistent with the best dental practices.

By signing this consent form, I acknowledge that my participation in this study is voluntary. I understand that I make revoke my consent and withdraw from this study at any time without penalty or loss of benefits. My treatment by and relations with the dentists and staff at the OU College of Dentistry, now and in the future, will not be affected any way if I refuse to participate, or if I enter the study and withdraw later.

Records of this study will be kept confidental with respect to any written or video recorded material making it impossible to identify me individually. Results will also be reported as group data and I will not be identified individually.

If I have any questions or need to report an adverse effect about the research procedures, I will contact Dr. Patrick J. Mason, or colleagues by calling (405) 271-5311 during workdays, or by calling Ms. Morris on weekends and evenings at 751-9067.

If I have any questions about my rights as a research subject, I may take them to the Director of Research Administration, University of Oklahoma Health Sciences Center, Room 115, Library Building, (405) 271-2090.

I have read this informed consent document. I understand its contents and I freely consent to participate in this study under the conditions described in this document.

Date	Research Subject
Date	Witness
Date	Principal Investigator

Appendix D

History Questionnaire

AGE: _____ SEX:(circle one) Male Female

RACE:_____ EMPLOYED:(circle one) Yes No

OCCUPATION:_____

MARITAL STATUS: (circle one)

Single Married Divorced Separated Widowed

EDUCATION: (check highest level completed)

____ 7th grade ____ some college

____ 9th grade ____ Associate Degree

____ 10th or 11th grade ____ college graduate(4 yrs)

____ High school grad/GED ____ professional degree

INCOME: (check one)

____ less than 10,000 ____ 25,000-29,999

____ 10,000-14,999 ____ 30,000-39,999

____ 15,000-24,999 ____ 40,000 or more

When did you first contact the dental school to make an appointment to have your teeth examined? _____

Why are you seeking dental treatment at the dental school?

_____

_____

Do you brush your teeth: (check one)

_____once a day _____twice a day

_____every other day _____more than twice a day

Do you floss your teeth:(check one)

_____every day _____2-3 times per week

_____once a week _____seldom _____never

How often do you see a dentist? (check one)

_____twice a year _____once a year

_____every two years _____every three years

_____every 3-5 years _____every 5-10 years

_____have never visited a dentist

How would you rate the current condition of your teeth?

_____ excellent, only need to be cleaned

_____ good, will require only minor work, ie. fillings

_____ fair, will probably require several fillings, roots canals, or the removal of one or several teeth

_____ poor, will probably need most of my teeth pulled or need to have a lot of work done on my teeth

When was your last visit to a dentist?

_____(approximate date)

How satisfied were you with your last dentist? (check one)

_____very _____somewhat _____okay

_____somewhat unsatisfied _____very unsatisfied

Appendix E

Discomfort Item

How did you feel during your examination today? (circle one)

1-------2--------3--------4--------5--------6--------7

(calm-relaxed) (tense-upset)

Appendix F

Dental Visit Satisfaction Scale

For each of the following statements please circle the number in front of each statement which best indicates your response.

1 = Strongly Disagree (SD)
2 = Mildly Disagree (MD)
3 = Neither Agree or Disagree (N)
4 = Mildly Agree (MA)
5 = Strongly Agree (SA)

SD	MD	N	MA	SA	
1	2	3	4	5	After talking with the dental student, I know what the condition of my mouth is.
1	2	3	4	5	After talking with the dental student, I have a good idea of what changes to expect in my dental health in the next few months.
1	2	3	4	5	The dental student told me all I wanted to know about my dental problem(s).
1	2	3	4	5	I really felt understood by the dental student.
1	2	3	4	5	I felt that this dental student really knew how upset I was about the possibility of pain.
1	2	3	4	5	I felt this dental student accepted me as a person.
1	2	3	4	5	The dental student was thorough in doing the procedure.
1	2	3	4	5	The dental student was too rough when he worked on me.
1	2	3	4	5	I was satisfied with what the dental student did.
1	2	3	4	5	The dental student seemed to know what he was doing during my visit.

Appendix G

Dentist Behavior Checklist

After each of the following items, please circle your response.

During my dental visit today, the dental student who examined me teeth:

(1) Told me what he was going to do before he did it.

not at all-----not very often-----often-----very often

(2) Encouraged me to ask questions about my treatment.

not at all-----not very often-----often-----very often

(3) Used words that were understandable in talking about my dental care.

not at all-----not very often-----often-----very often

(4) Criticized my teeth or how I've been taking care of them.

not at all-----not very often-----often-----very often

(5) Said reassuring things during the procedure.

not at all-----not very often-----often-----very often

(6) Showed that he took seriously what I had to say.

not at all-----not very often-----often-----very often

(7) Had a calm manner.

not at all-----not very often-----often-----very often

Appendix H

Student Consent Form

University of Oklahoma Health Sciences Center
University of Oklahoma College of Dentistry

Consent for Participation in Research

I, _____, voluntarily agree to participate in the study entitled, "Investigation of Patient Dental Anxiety, Patient Satisfaction, and Dental Student Behavior" being conducted by Patrick J. Mason, Ph.D. and Kathryn Morris, M.S. The study is sponsored by the OU College of Dentistry in collaboration with the Department of Psychiatry and Behavioral Sciences.

I understand that:

1. Purpose This is a research study examining dental students behavior with patients.

2. Description of Study If selected, I will be videotaped while seeing patients during my rotation at the Oral Diagnosis Clinic.

3. Benefits My participation in this study will benefit dental education and training, but there will be limited direct benefits to me personally. If I so desire I will be able to review the videotapes made of me during the study.

4. Risks There are no risks to me by participation in this study.

I understand that if I choose not to participate in this study, no faculty from the College of Dentistry will be advised of my desire not to participate. Should I choose to participate, no faculty from the College of Dentistry will see the videotapes made of me nor will any information regarding my performance be given to anyone affiliated with the College of Dentistry. Whether I choose to participate or not, nothing that I do related to this study will affect any of my grades or evaluation by faculty.

Whereas no assurance can be made concerning the results that may be obtained, I understand that every precaution will be taken consistent with best dental practices and ethical research standards.

By signing this consent form, I acknowledge that my participation in this study is voluntary. I understand that I may revoke my consent and withdraw from this study at any time without penalty or loss of benefits.

Records of this study will be kept confidental with respect to any written or videorecorded material making it impossible to identify me individually. Results of this study will also be reported as group data making identification of me, individually, impossible. I also understand that no one affiliated with the dental school will observe the videotapes made of me. This will be done by two independent raters who are unknown to me.

If I have any questions or need to report an adverse effect about the research procedures, I will contact Dr. Patrick J. Mason, or colleagues by calling (405) 271-5311 during workdays, or by calling Ms. Morris on weekends and evenings at 751-9067.

If I have any questions about my rights as a research subject, I may take them to the Director of Research Administration, University of Oklahoma Health Sciences Center, Room 115, Library Building, (405) 271-2090.

I have read this informed consent document. I understand its contents and I freely consent to participate in this study under the conditions described in this document.

Date	Research Subject
Date	Witness
Date	Principal Investigator

Appendix I

Instructions to Dental Students

As you know, dental anxiety is a problem affecting a number of patients with whom you come into contact. Patients most often give no outward evidence of anxiety, but experience anxiety during dental visits, nevertheless. The patient you are about to see has been given a screening instrument which assesses dental anxiety. The results indicate that she has scored above average on this scale. I would like you to keep this in mind today as you interact with this patient during the screening examination. This patient could probably benefit from any efforts on your part to help lessen her anxiety.

I have read the above information about this patient.

_____

Signature of Dental Student

Appendix J. Observer's Checklist of Dental Student Behaviors

EXPLAINED PROCEDURE (ExP)

Definition: Dental student describes to patient what he is going to do before starting a dental procedure or as the procedure is begun.

Examples:
"Today I am going to examine your teeth."
"I am going to look under your tongue to check for oral cancer."
"I am going to place this instrument in your mouth and check for cavities."
"When your x-rays have been taken, you will return to the waiting room and I will call you to finish your exam."

Non-examples:
"You will be placed in the patient pool and a dental student will be calling you."
"You will be required to commit yourself to two, 3-hour appointments each week."

ENCOURAGED QUESTIONS (EnQ)

Definition: Verbalizations to the patient by the dental student which serve as stimuli for patient to ask questions.

Examples:
Directives, ie. "Tell me your questions."
Closed ended questions, ie. "Do you have any questions?"
Open ended questions, ie. "What questions do you have?", "What are your concerns?"

Non-examples: Giving information, asking questions

NOT UNDERSTANDABLE (U)

Definition: Dental student uses unexplained technical terms(non-understandable language) when talking with the patient about her teeth or oral hygiene.

Examples: endodontics, prosthdontics, fixed, amalgams, composites, periodontal disease, margins, fractures, devitalize, caries lesions

Non-examples: Words easily understood by someone with a high school education, and/or when terms are explained.

CRITICIZED PATIENT'S TEETH OR CARE OF TEETH (CrR)

Definition: Critical remarks made about the patient's teeth or care of teeth when talking to the patient, faculty member, or other students within hearing range of the patient. Critical remarks are defined as accusations of wrong-doing, statements of blame, or scolding verbalizations directed toward the patient or others regarding patient's teeth or care of teeth.

Examples: "You have not been flossing your teeth!"
"Your mouth is pretty bombed out."
"Your mouth is a mess!"
"You should have seen a dentist a long time ago."
"If you have time to eat, you have time to floss."

Non-examples: Giving information, ie. "You have 5 decayed teeth."

WAS REASSURING (R)

Definition: Verbal behavior by the dental student designed to allay patient anxiety or otherwise put the patient at ease.

Examples: Positive statements regarding the patient's behavior, ie. "It's good that you are coming in now.", "You're doing just fine.".

Positive statements regarding the patient's prospects for treatment, ie. "You would be a good patient for our program."

Empathic remarks, ie. "I know it's hard to brush, but...", "Seems that you are really nervous today.".

Statements of normalcy, ie. "Lots of people are nervous when coming to a new dentist or to this clinic for the first time."

Non-examples: "Okay"(dental student talking to himself)

TOOK PATIENT SERIOUSLY

Responses to patient verbalizations indicating interest in what the patient has to say. Examples include acknowledgement of patient's verbalizations through making eye contact with the patient and answering questions, reflecting patient's feelings, or asking follow-up questions to patient statements.

Not taking the patient seriously would be evidenced by the dental student not responding to patient verbalizations, discounting patient's statements or feelings, or ridiculing or making fun of the patient for statements made.

1----------2----------3----------4

(not at all) (not very often) (often) (very often)

HAD A CALM MANNER

Calm being the absence of overt signs of anxiety, ie. stuttering, trembling, lack of eye contact, pressured speech.

Absence of inappropriate affect and behavior for a professional, ie. angry outbursts, signs of frustration with patient or procedure, signs of frustration with way clinic is run (administrative problems).

Calmness would in part be exhibited by the dental student proceeding smoothly from one part of the exam to the next, not distracted by the activity of others and remaining generally unruffled by external events.

1----------2----------3----------4

(not at all) (not very often) (often) (very often)

Appendix K
Observer's Coding Form

SUBJECT NO._____
RATER_____

ExP = Explained Procedure
EnQ = Encouraged Questions
U = Not Understandable
CrR = Made Critical Remarks
R = Was Reassuring

1 ExP( )	EnQ( )	U( )	CrR( )	R( )	1
2 ExP( )	EnQ( )	U( )	CrR( )	R( )	2
3 ExP( )	EnQ( )	U( )	CrR( )	R( )	3
4 ExP( )	EnQ( )	U( )	CrR( )	R( )	4
5 ExP( )	EnQ( )	U( )	CrR( )	R( )	5
6 ExP( )	EnQ( )	U( )	CrR( )	R( )	6
7 ExP( )	EnQ( )	U( )	CrR( )	R( )	7
8 ExP( )	EnQ( )	U( )	CrR( )	R( )	8
9 ExP( )	EnQ( )	U( )	CrR( )	R( )	9
10 ExP( )	EnQ( )	U( )	CrR( )	R( )	10
11 ExP( )	EnQ( )	U( )	CrR( )	R( )	11
12 ExP( )	EnQ( )	U( )	CrR( )	R( )	12
13 ExP( )	EnQ( )	U( )	CrR( )	R( )	13
14 ExP( )	EnQ( )	U( )	CrR( )	R( )	14
15 ExP( )	EnQ( )	U( )	CrR( )	R( )	15
16 ExP( )	EnQ( )	U( )	CrR( )	R( )	16
17 ExP( )	EnQ( )	U( )	CrR( )	R( )	17
18 ExP( )	EnQ( )	U( )	CrR( )	R( )	18
19 ExP( )	EnQ( )	U( )	CrR( )	R( )	19
20 ExP( )	EnQ( )	U( )	CrR( )	R( )	20
21 ExP( )	EnQ( )	U( )	CrR( )	R( )	21
22 ExP( )	EnQ( )	U( )	CrR( )	R( )	22
23 ExP( )	EnQ( )	U( )	CrR( )	R( )	23
24 ExP( )	EnQ( )	U( )	CrR( )	R( )	24
25 ExP( )	EnQ( )	U( )	CrR( )	R( )	25
26 ExP( )	EnQ( )	U( )	CrR( )	R( )	26
27 ExP( )	EnQ( )	U( )	CrR( )	R( )	27
28 ExP( )	EnQ( )	U( )	CrR( )	R( )	28
29 ExP( )	EnQ( )	U( )	CrR( )	R( )	29
30 ExP( )	EnQ( )	U( )	CrR( )	R( )	30
31 ExP( )	EnQ( )	U( )	CrR( )	R( )	31
32 ExP( )	EnQ( )	U( )	CrR( )	R( )	32
33 ExP( )	EnQ( )	U( )	CrR( )	R( )	33
34 ExP( )	EnQ( )	U( )	CrR( )	R( )	34
35 ExP( )	EnQ( )	U( )	CrR( )	R( )	35
36 ExP( )	EnQ( )	U( )	CrR( )	R( )	36
37 ExP( )	EnQ( )	U( )	CrR( )	R( )	37
38 ExP( )	EnQ( )	U( )	CrR( )	R( )	38
39 ExP( )	EnQ( )	U( )	CrR( )	R( )	39
40 ExP( )	EnQ( )	U( )	CrR( )	R( )	40
41 ExP( )	EnQ( )	U( )	CrR( )	R( )	41
42 ExP( )	EnQ( )	U( )	CrR( )	R( )	42
43 ExP( )	EnQ( )	U( )	CrR( )	R( )	43
44 ExP( )	EnQ( )	U( )	CrR( )	R( )	44
45 ExP( )	EnQ( )	U( )	CrR( )	R( )	45
46 ExP( )	EnQ( )	U( )	CrR( )	R( )	46
47 ExP( )	EnQ( )	U( )	CrR( )	R( )	47

48	ExP( )	EnQ( )	U( )	CrR( )	R( )	48
49	ExP( )	EnQ( )	U( )	CrR( )	R( )	49
50	ExP( )	EnQ( )	U( )	CrR( )	R( )	50
51	ExP( )	EnQ( )	U( )	CrR( )	R( )	51
52	ExP( )	EnQ( )	U( )	CrR( )	R( )	52
53	ExP( )	EnQ( )	U( )	CrR( )	R( )	53
54	ExP( )	EnQ( )	U( )	CrR( )	R( )	54
55	ExP( )	EnQ( )	U( )	CrR( )	R( )	55
56	ExP( )	EnQ( )	U( )	CrR( )	R( )	56
57	ExP( )	EnQ( )	U( )	CrR( )	R( )	57
58	ExP( )	EnQ( )	U( )	CrR( )	R( )	58
59	ExP( )	EnQ( )	U( )	CrR( )	R( )	59
60	ExP( )	EnQ( )	U( )	CrR( )	R( )	60
61	ExP( )	EnQ( )	U( )	CrR( )	R( )	61
62	ExP( )	EnQ( )	U( )	CrR( )	R( )	62
63	ExP( )	EnQ( )	U( )	CrR( )	R( )	63
64	ExP( )	EnQ( )	U( )	CrR( )	R( )	64
65	ExP( )	EnQ( )	U( )	CrR( )	R( )	65
66	ExP( )	EnQ( )	U( )	CrR( )	R( )	66
67	ExP( )	EnQ( )	U( )	CrR( )	R( )	67
68	ExP( )	EnQ( )	U( )	CrR( )	R( )	68
69	ExP( )	EnQ( )	U( )	CrR( )	R( )	69
70	ExP( )	EnQ( )	U( )	CrR( )	R( )	70
71	ExP( )	EnQ( )	U( )	CrR( )	R( )	71
72	ExP( )	EnQ( )	U( )	CrR( )	R( )	72
73	ExP( )	EnQ( )	U( )	CrR( )	R( )	73
74	ExP( )	EnQ( )	U( )	CrR( )	R( )	74
75	ExP( )	EnQ( )	U( )	CrR( )	R( )	75
76	ExP( )	EnQ( )	U( )	CrR( )	R( )	76
77	ExP( )	EnQ( )	U( )	CrR( )	R( )	77
78	ExP( )	EnQ( )	U( )	CrR( )	R( )	78
79	ExP( )	EnQ( )	U( )	CrR( )	R( )	79
80	ExP( )	EnQ( )	U( )	CrR( )	R( )	80
81	ExP( )	EnQ( )	U( )	CrR( )	R( )	81
82	ExP( )	EnQ( )	U( )	CrR( )	R( )	82
83	ExP( )	EnQ( )	U( )	CrR( )	R( )	83
84	ExP( )	EnQ( )	U( )	CrR( )	R( )	84
85	ExP( )	EnQ( )	U( )	CrR( )	R( )	85
86	ExP( )	EnQ( )	U( )	CrR( )	R( )	86
87	ExP( )	EnQ( )	U( )	CrR( )	R( )	87
88	ExP( )	EnQ( )	U( )	CrR( )	R( )	88
89	ExP( )	EnQ( )	U( )	CrR( )	R( )	89
90	ExP( )	EnQ( )	U( )	CrR( )	R( )	90
91	ExP( )	EnQ( )	U( )	CrR( )	R( )	91
92	ExP( )	EnQ( )	U( )	CrR( )	R( )	92
93	ExP( )	EnQ( )	U( )	CrR( )	R( )	93
94	ExP( )	EnQ( )	U( )	CrR( )	R( )	94
95	ExP( )	EnQ( )	U( )	CrR( )	R( )	95
96	ExP( )	EnQ( )	U( )	CrR( )	R( )	96
97	ExP( )	EnQ( )	U( )	CrR( )	R( )	97
98	ExP( )	EnQ( )	U( )	CrR( )	R( )	98
99	ExP( )	EnQ( )	U( )	CrR( )	R( )	99
100	ExP( )	EnQ( )	U( )	CrR( )	R( )	100
101	ExP( )	EnQ( )	U( )	CrR( )	R( )	101
102	ExP( )	EnQ( )	U( )	CrR( )	R( )	102
103	ExP( )	EnQ( )	U( )	CrR( )	R( )	103
104	ExP( )	EnQ( )	U( )	CrR( )	R( )	104
105	ExP( )	EnQ( )	U( )	CrR( )	R( )	105

106	ExP( )	EnQ( )	U( )	CrR( )	R( )	106
107	ExP( )	EnQ( )	U( )	CrR( )	R( )	107
108	ExP( )	EnQ( )	U( )	CrR( )	R( )	108
109	ExP( )	EnQ( )	U( )	CrR( )	R( )	109
110	ExP( )	EnQ( )	U( )	CrR( )	R( )	110
111	ExP( )	EnQ( )	U( )	CrR( )	R( )	111
112	ExP( )	EnQ( )	U( )	CrR( )	R( )	112
113	ExP( )	EnQ( )	U( )	CrR( )	R( )	113
114	ExP( )	EnQ( )	U( )	CrR( )	R( )	114
115	ExP( )	EnQ( )	U( )	CrR( )	R( )	115
116	ExP( )	EnQ( )	U( )	CrR( )	R( )	116
117	ExP( )	EnQ( )	U( )	CrR( )	R( )	117
118	ExP( )	EnQ( )	U( )	CrR( )	R( )	118
119	ExP( )	EnQ( )	U( )	CrR( )	R( )	119
120	ExP( )	EnQ( )	U( )	CrR( )	R( )	120
121	ExP( )	EnQ( )	U( )	CrR( )	R( )	121
122	ExP( )	EnQ( )	U( )	CrR( )	R( )	122
123	ExP( )	EnQ( )	U( )	CrR( )	R( )	123
124	ExP( )	EnQ( )	U( )	CrR( )	R( )	124
125	ExP( )	EnQ( )	U( )	CrR( )	R( )	125
126	ExP( )	EnQ( )	U( )	CrR( )	R( )	126
127	ExP( )	EnQ( )	U( )	CrR( )	R( )	127
128	ExP( )	EnQ( )	U( )	CrR( )	R( )	128
129	ExP( )	EnQ( )	U( )	CrR( )	R( )	129
130	ExP( )	EnQ( )	U( )	CrR( )	R( )	130
131	ExP( )	EnQ( )	U( )	CrR( )	R( )	131
132	ExP( )	EnQ( )	U( )	CrR( )	R( )	132
133	ExP( )	EnQ( )	U( )	CrR( )	R( )	133
134	ExP( )	EnQ( )	U( )	CrR( )	R( )	134
135	ExP( )	EnQ( )	U( )	CrR( )	R( )	135
136	ExP( )	EnQ( )	U( )	CrR( )	R( )	136
137	ExP( )	EnQ( )	U( )	CrR( )	R( )	137
138	ExP( )	EnQ( )	U( )	CrR( )	R( )	138
139	ExP( )	EnQ( )	U( )	CrR( )	R( )	139
140	ExP( )	EnQ( )	U( )	CrR( )	R( )	140
141	ExP( )	EnQ( )	U( )	CrR( )	R( )	141
142	ExP( )	EnQ( )	U( )	CrR( )	R( )	142
143	ExP( )	EnQ( )	U( )	CrR( )	R( )	143
144	ExP( )	EnQ( )	U( )	CrR( )	R( )	144
145	ExP( )	EnQ( )	U( )	CrR( )	R( )	145
146	ExP( )	EnQ( )	U( )	CrR( )	R( )	146
147	ExP( )	EnQ( )	U( )	CrR( )	R( )	147
148	ExP( )	EnQ( )	U( )	CrR( )	R( )	148
149	ExP( )	EnQ( )	U( )	CrR( )	R( )	149
150	ExP( )	EnQ( )	U( )	CrR( )	R( )	150
151	ExP( )	EnQ( )	U( )	CrR( )	R( )	151
152	ExP( )	EnQ( )	U( )	CrR( )	R( )	152
153	ExP( )	EnQ( )	U( )	CrR( )	R( )	153
154	ExP( )	EnQ( )	U( )	CrR( )	R( )	154
155	ExP( )	EnQ( )	U( )	CrR( )	R( )	155
156	ExP( )	EnQ( )	U( )	CrR( )	R( )	156
157	ExP( )	EnQ( )	U( )	CrR( )	R( )	157
158	ExP( )	EnQ( )	U( )	CrR( )	R( )	158
159	ExP( )	EnQ( )	U( )	CrR( )	R( )	159
160	ExP( )	EnQ( )	U( )	CrR( )	R( )	160

TOOK PATIENT SERIOUSLY

1----------2----------3----------4

(not at all) (not very often) (often) (very often)

HAD A CALM MANNER

1----------2----------3----------4

(not at all) (not very often) (often) (very often)

VITA

Mary Kathryn Morris

Candidate for the Degree of

Doctor of Philosophy

Dissertation: Investigation of Patient Anxiety, Patient Satisfaction, and Dental Student Behavior

Major Field: Combined Professional-Scientific Psychology
Specialty: Clinical Psychology

Biographical Information:

Personal Data: Born in Fort Campbell, Kentucky, December 17, 1952, the daughter of Robert H. and Mary Morris; single.

Education: Graduated from S.H.A.P.E. American High School, S.H.A.P.E., Belgium, in June, 1970; received Bachelor of Science degree (cum laude) from the University of Idaho in May, 1976; received Master of Science degree from Utah State University in June, 1982; completed requirements for the Doctor of Philosophy degree at Utah State University in June, 1987.

Professional Experience: Graduate Assistant, Multi-Agency Preschool Program for the Handicapped, Exceptional Child Center, Utah State University, 1979-1981; Practicum Student, Bear River Community Mental Health Center, Brigham City, Utah 1980-1981; Graduate Assistant, University Counseling Center, Utah State University, 1981-1982; APA-Approved Internship, University of Oklahoma Health Sciences Center, 1982-1983; Research Assistant, Child Study Center, OU Health Sciences Center, 1984-present; Summer Psychology Trainee, Veteran's Administration Medical Center, summers 1984-1986.

Professional Affiliations:
Student Affiliate of the American Psychological Association