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IN
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Editors

DeWitt C. Baldwin, Jr., M.D.
Beverley Davies Rowley, M.A.
Virginia H. Williams, B.A.

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A STUDY OF PATIENT RESPONSE
TO STUDENT INTERDISCIPLINARY TEAM CARE*

DeWitt C. Baldwin, Jr., M.D., Barbara C. Thornton, Ph.D.

and Sue Dodson, M.A.

University of Nevada, Reno

Evaluation and research on innovative projects such as student interdisciplinary health care teams are difficult to conduct for a variety of reasons. First, most demonstration projects have, as their primary aim, the creation and establishment of a particular innovation. Since funding is generally limited, evaluation and research often are given a low priority. Second, the kinds of persons who start or are attracted to such pioneering projects tend to be visionaries or "missionaries" (Baldwin and Baldwin, 1979). While energy and enthusiasm are essential elements in establishing and disseminating innovative concepts, such persons frequently do not have the careful and considered skills of researchers, who are committed to long-term goals. Third, the very enthusiasm of pioneers often sets up a "we-they" mentality which precludes objective internal evaluation of the impact of the program. Fourth, such projects are frequently carried out before appropriate hypotheses are posed. Indeed, they usually are at the stage of attempting to define the questions, rather than to answer them. This is certainly true about health team training, which still does not have an adequate theory base and has not to date been satisfactorily evaluated from either the educational or clinical standpoint. Finally, since such programs are often engaged in an evolving or rapid growth process, the system seldom "holds still" long enough to be satisfactorily studied and measured.

The Interdisciplinary Health Team Training Program, sponsored by the Office of Interdisciplinary Programs of the Bureau of Health Manpower in 1975, was no exception. Efforts to stimulate and establish the concept of interdisciplinary health

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team training in a variety of health centers with modest budgetary resources necessarily limited the amount of money available for evaluation and research in this area. In addition, the short funding period (three years) made it difficult, if not impossible, for fundees to design, conduct and complete meaningful evaluation and research on their individual efforts. Despite these limitations, the proposal of the Interdisciplinary Team Training and Curriculum (Team-TRAC) Program at the University of Nevada, Reno, specifically budgeted resources and personnel for this purpose and a research team was established shortly after funding in 1975 (Thornton, et al., 1979).

Goals and Approach of the Evaluation and Research Program

A primary mutual goal of both evaluation and research in the Team-TRAC Program was to determine how and where resources (both human and material) should be expended in order to achieve maximum learning opportunities for students and faculty as well as to provide optimum care to the clients and patients. Equally important were the needs to develop a better understanding of the team training process as well as to build support for the program locally.

Teams (essentially groups or subsystems) can be viewed as parts of larger systems (medical school, university, primary health care system, etc.). The Team-TRAC research design, then, was based on small group and general systems theory (Von Bertalanffy, 1962) and involved a processual, grounded theory approach (Glaser and Strauss, 1967). The research model was deliberately multimethodological and included: 1) Survey Questionnaires and Interviews, which explored a number of demographic, cognitive and attitudinal variables, 2) Participant Observation, and 3) Interaction Analysis, an innovative approach to studying faculty and student teams (Fisher and Hawes, 1971; Thornton, 1976). Further discussion of this approach and of the constraints on small group and/or team evaluation and research are detailed elsewhere (Thornton, et al., 1979).

DESCRIPTION OF THE STUDY

From the beginning of the Team-TRAC Program, there was intense interest in how patients would react to care from student health care teams. The purpose of the patient research project was to determine satisfaction with the student team experience and to have patients describe and evaluate their perceptions of the team care. Two methods were used: Patient Interviews and Questionnaires, and Interaction Analysis of patient-team interaction.

Patient Interview and Questionnaire Data

Background. In the first year of the team training project, families were recruited to provide an opportunity for students in the project to actually practice their teamwork and clinical skills. Students saw one or more families for health screening and assessment during the semester-long team training course. Each team was composed of four students, one each from medicine, nursing, social work and medical technology. Each faculty team was composed of the same four disciplines, and each faculty team was responsible for two student teams during a given clinical session. Students had the entire semester available to complete the health screening and assessment on all members of a family. Students made home visits, as well as seeing patients in a clinical setting on the campus.

Methods. At the conclusion of the first semester, open ended interviews were conducted with participating families by a skilled interviewer. After two semesters of the team training project were completed, a more detailed interview schedule comprising some 35 questions was developed, as was an evaluation questionnaire. Psych-social students enrolled in the team training course were assigned responsibility for conducting the interviews and administering the questionnaires. All families who had been patients in either semester were contacted. Three had left the area, but the others agreed to be interviewed. All individuals 11 years old or older who had participated were asked to complete the questionnaire as well. Husband, wife and older children were all asked to participate in the interview together.

The earlier data were summarized by the interviewer and given to the faculty and director for immediate feedback. The later interviews (N=18) were coded for content, as were the questionnaires (N=41). All data from both instruments were hand tallied.

Results. Early interviews indicated a positive experience on the part of patients, with appreciation expressed for the thoroughness of the workup, the sharing between family and team, and the positive attitudes of teams toward the family unit. Many suggestions were made by the patients which were incorporated into the planning for the following and later semesters.

Sixteen of the eighteen families interviewed in the second phase of the study indicated that their experience with the student teams had been satisfactory (89%). Ninety-four percent of the families seemed to be aware of the goals and interdisciplinary intent of the project. Over 70% felt they gotten a more thorough assessment than they would have gotten elsewhere. Fourteen (78%) believed they had learned things about their family that they would not have learned elsewhere. Nearly 90% knew or spontaneously mentioned all the student and faculty team members by name. All but three families were given specific referrals or recommendations to follow. Of these 15, all but 1 followed up on the recommendation(s) (94%).

The most frequently mentioned "likes" about being seen by a team were the variety of opinions due to the several disciplines represented, as well as the personal care, interest and concern shown by the student teams. Many patients spontaneously mentioned the "friendly" people, or that it was a "delightful experience."

In over half (56%) of the families, all members agreed that if a real choice were available in the area, they would choose a team practice for their health care. In four other families, where husband and wife did not agree on an answer, one of them preferred a team practice. All but three indicated a willingness to continue in our program and fifteen said they would consider using our teams as primary providers of health care if we became an on-going, full-service family clinic (which we later did). Perhaps more important--89% indicated a willingness to pay for such services.

Questionnaires were completed by 41 respondents, of whom 20 were female,

and 21 male. Ten were children under the age of eighteen. Most respondents stated that they were quite comfortable with the teams and felt free to contact them if help was needed. However, only 18 said they had actually contacted the team because of a personal problem.

In scales which rated the student teams on a five-point scale from poor to excellent, all mean scores were above 3.6, with the highest mean scores being for confidentiality, concern for the person, and enthusiasm for the task. The lowest mean scores were for organization and planning, and for providing health education.

Interaction Analysis Data

Background and Methods. Interaction Analysis is a method by which relationships and roles within a team can be systematically examined to determine trends and patterns of team functioning (Thornton, et al., 1979). Interaction analysis examines the report or content and the command or relationship dimensions of communication behavior (Watzlawick, et al., 1967). The former provides information, while the latter defines the context or conditions in which the information is given. The content dimension can be described on the basis of four variables: source of information, time orientation, assembly rules, and equivocality reduction (Fisher, et al., 1979).

The relationship aspect of communication indicates how communication is to be interpreted. The RELCOM system developed by Ellis, et al. (1977), contains five mutually exclusive and exhaustive categories: 1) Dominance--an attempt to severely restrict the behavioral options of others; 2) Structuring--an attempt to restrict some options while leaving some options open; 3) Equivalence--an attempt at mutual identification; 4) Deference--a willingness to relinquish some behavioral options to others while retaining some choice of options; and 5) Submissiveness--a willingness to relinquish behavioral options while retaining little choice of control.

Data are obtained from sample audio tape recordings of all faculty and student team meetings. The recordings are coded by trained specialists according to interaction analysis schemes which analyze roles, relationships, and content based on general systems principles. The results describe the interaction of health teams

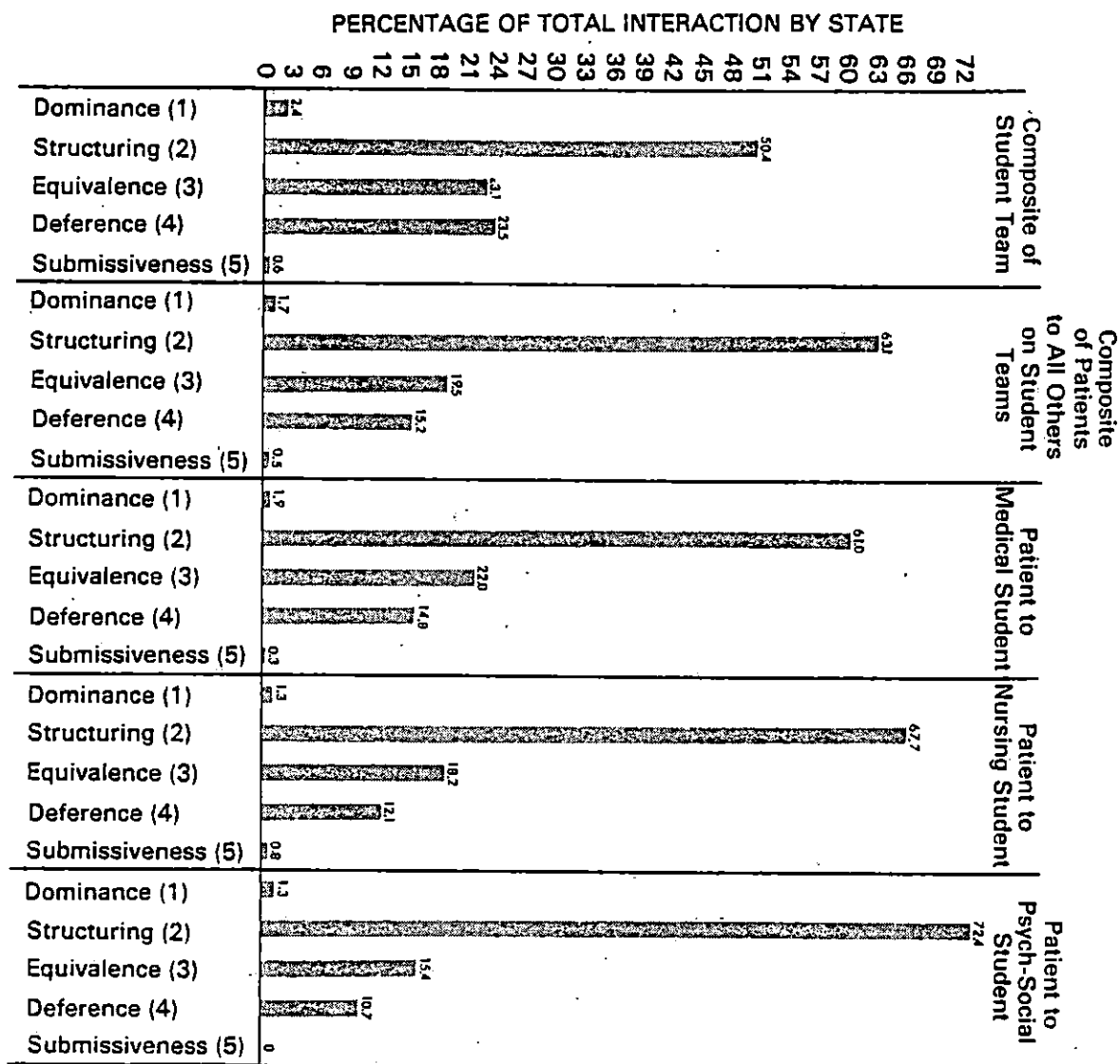
in an empirical and quantitative manner; using information theory statistics.

Since the methodology of Interaction Analysis involved audiotaping all team interactions, patient responses were part of the research design from the beginning. When the plan was first presented to the student teams, however, there were mixed reactions. The students tended to see the taping as a violation of patient/physician confidentiality and discussion of the issue within the team framework was an important learning experience for faculty and students alike. Eventually, everyone agreed that if taping were explained thoroughly to patients and if each family member agreed to it, the plan would be acceptable. Without exception, the patients agreed and there was no reference thereafter to the tape recording. However, recordings of patient/team interactions were discontinued after the first year, when it became apparent that the amount of data being collected was too great to be analyzed within the time and budget of the program.

Results. Patient interaction with members of the student health care teams (Figure 1) differed from the composite pattern of student team interaction, in that patients used 12.7% more structuring, 4.0% less equivalence, and 8.3% less deference than members of the student teams in general. In return, patients received 12.7% less structuring, 1.2% less equivalence, and 9.0% more deference than did other members of student teams. Figures 1 and 2 summarize the initiating and responding behavior of patients in their dyadic relationships with team members, which are seen to differ significantly from the composite of student team interaction.

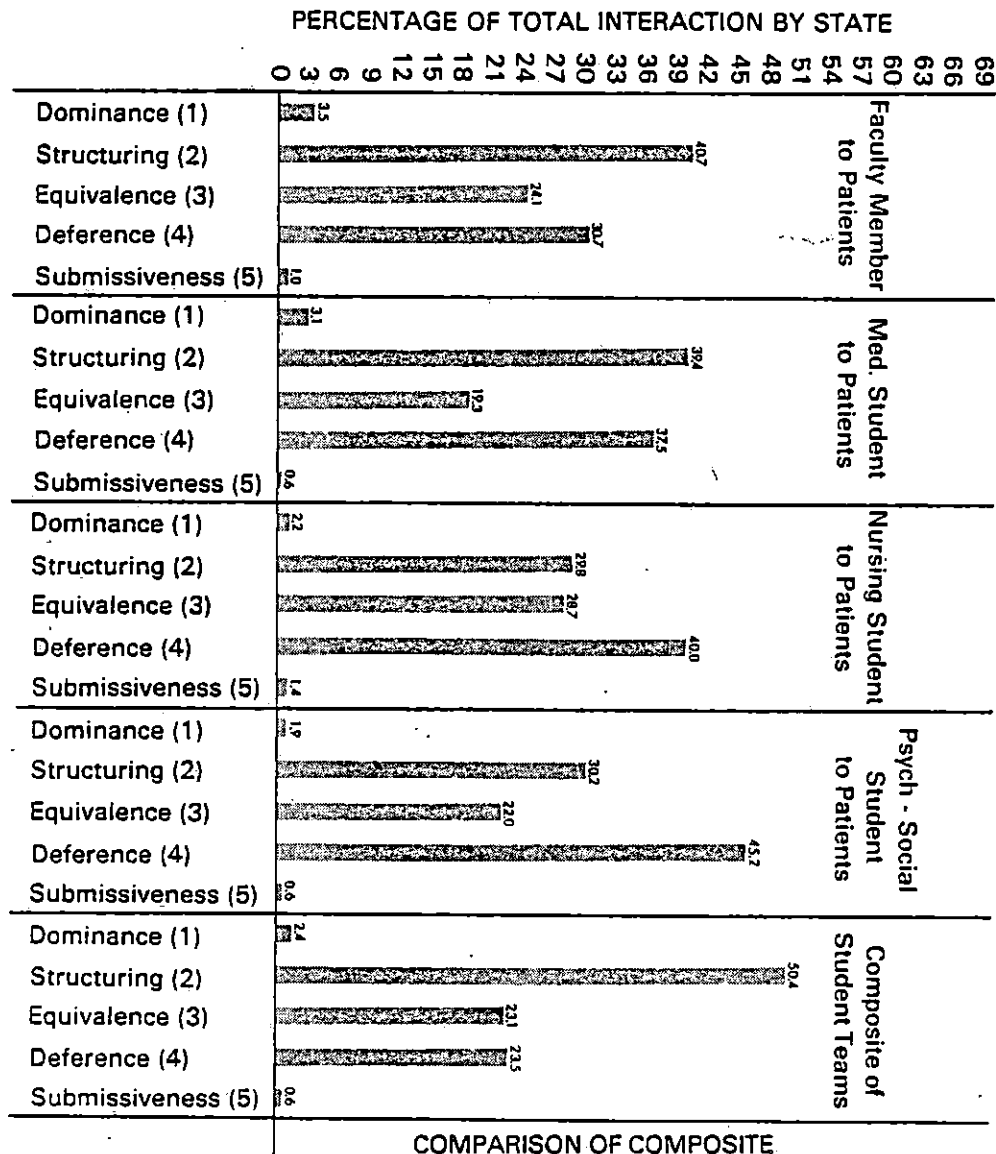
The percentages of comments directed by patients to various disciplines on the student teams gives some indication of the nature of patient/team interaction. Of the 1774 patient-initiated interactions, 44.3% were to medical students, 22.0% to nursing students, 11.2% to faculty members, 8.4% to psych-social work students, 7.2% to medical technology students, 4.3% to nutrition students, and 2.6% to students from other health care teams.

The patient to medical student dyad ($\chi^2=86.4072$, $df=20$, $p<.001$), patient to nursing student dyad ($\chi^2=66.6309$, $df=20$, $p<.001$), and patient to psych-social work student dyad ($\chi^2=44.2695$, $df=20$, $p<.005$) all differed significantly from the composite of student team interaction. (See Figure 1.) In each case, these differences were



**COMPARISON OF COMPOSITE STUDENT TEAM INTERACTION
WITH PATIENT - INITIATED INTERACTION
TO MEMBERS OF STUDENT TEAMS**

Figure 1



COMPARISON OF COMPOSITE
STUDENT TEAM INTERACTION OF

- 1) Faculty to Patients
- 2) Medical Students to Patients
- 3) Nursing Students to Patients
- 4) Psych - Social Students to Patients

Figure 2

due to the large amounts of structuring and the low use of equivalence and deference in patient-initiated interactions.

Compared to their interaction with nursing and psych-social work students, patients interacted much more frequently with medical students, using 2.1% less structuring, 1.5% more equivalence and 0.4% less deference with the medical students than they did to members of student teams in general. Patients interacted about half as frequently with nursing students as with medical students, and patient/nursing student interaction involved 4.6% more structuring, 1.3% less equivalence, and 3.1% less deference than the composite of patient interaction. Patients interacted with psych-social work students only about one-fifth as frequently as with medical students. Patients used 9.3% more structuring in their interaction with psych-social students than with other members of the student team.

In initiating comments to patients, dyads involving faculty, medical students, nursing students, and psych-social work students all differed significantly from the overall composite of student team interaction. (See Figure 2.) In each case, the differences were due to less frequent use of structuring, greater use of deference, and, for nursing students and faculty, greater use of equivalence than on the composite for all student teams. The faculty/patient ($\chi^2=29.118$, $df=20$, $p<.010$) and the medical student/patient ($\chi^2=98.4419$, $df=20$, $p<.001$) dyadic interaction involved about 10% less structuring than the student team composite. When interacting with patients, faculty members used deference 7.2% more often than the student team composite, but less frequently than when medical, nursing, or psych-social work students interacted with patients. The nursing student/patient ($\chi^2=39.7363$, $df=20$, $p<.010$) dyadic interaction involved about 20% less structuring than the student team composite and 16.5% more deference. The nursing student/patient dyad also involved a 5.6% increased use of equivalence over the student composite.

Summary

These studies have provided us with some useful base-line data on patient satisfaction and patient interaction with student health care teams. In general, it can be stated that patients find the use of student teams acceptable for health

screening and assessment and regard the concept of team care positively. Interactions and responses to individual members of the student teams tend to follow traditional disciplinary role and status dispositions. The usefulness of the research design and of the methodological approaches used appears validated. At the same time, the current findings are preliminary and tentative at best and will require much more research on patient behavior and satisfaction before the effects of team care can be evaluated.

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