DOES EARLY CLINICAL EXPOSURE ENHANCE PERFORMANCE DURING THIRD-YEAR CLERKSHIP?

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This study was undertaken to assess the effects of early clinical exposure in an indigent care free clinic on third-year clerkship mini-board scores (clinical knowledge), faculty evaluation (especially rapport with colleagues and patients), and final rotation grades. After completion of third-year clerkships, a sample of participants was compared with nonparticipants. Comparative statistics, repeated measure analysis, and analyses of variance were performed on the entire group as well as by sex and by individual rotation. No statistically significant differences were found in the mainframe, but subgroup findings indicate further study is warranted. Negative findings might be explained in part by small sample size and the fact that the clinic is exclusively outpatient, while the third-year clerkship experience is inpatient. Data collection is being continued, and studies are ongoing to look at the long-term effect of the program on participants. (*J Natl Med Assoc.* 1994;86:594-596.)

Key words • medical students • third-year clerkship

Three issues that pervade any discussion of medicine today are clinical competence and the effect of technology, the disintegrating rapport between doctor and patient, and the problem of supplying health care to the growing number of uninsured Americans.[1-3] The University of South Florida (USF) College of Medicine's Department of Family Medicine coordinates a program that ostensibly deals with the third issue, yet also provides a forum for addressing the other two issues with young medical students.

Since 1983, USF has offered a unique opportunity for its medical students to gain clinical exposure during the freshman and sophomore years. Specifically, 25 students from a class of 96 are chosen from volunteers to participate one-half day per week in medical school-affiliated indigent care as part of a Public Sector Medicine Program (PSMP). The students, who are selected randomly from a group of 60 or more students who seek to participate in the program, attend a clinical site regularly in addition to meeting their other physical diagnosis course requirements.

The Public Sector facility is an off-site clinic for those who have no health insurance (public or private) but whose income is too high to qualify for government assistance. This clinic sees approximately 35 patients per day, 5 days a week. Groups of approximately eight students rotate through on three of these days. Advantages of having medical students volunteer at the clinic include: 1) a preservation of their early altruistic impulses, 2) sensitization to the health-care problems of the medically indigent, and 3) improved clinical competence through increased individualized patient contact that is monitored closely by a faculty member. The student experience includes didactic "noon conferences" before clinic hours, individual student-patient evaluation (subsequently repeated with the attending faculty member), and group discussion at the conclusion of the session. This latter postclinical conference affords the student the opportunity to practice patient

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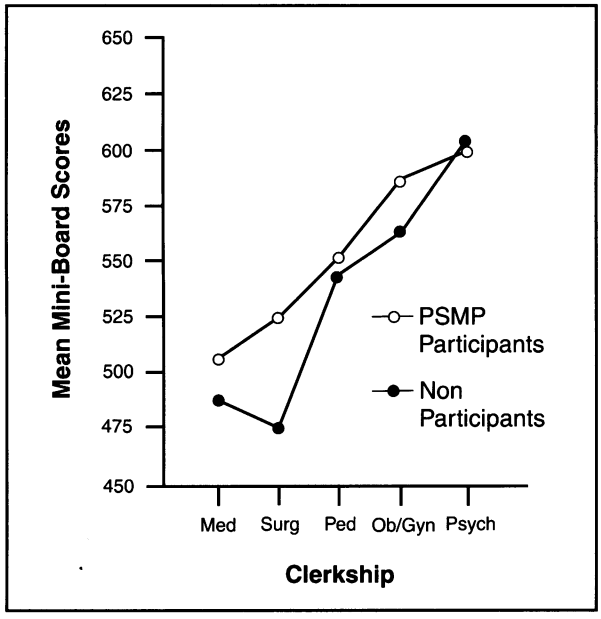

Figure 1. Mean mini-board scores for PSMP participants and nonparticipants (Abbreviations: PSMP = Public Sector Medicine Program, Med = medicine, Surg = surgery, Ped = pediatrics, Ob/Gyn = obstetrics/gynecology, and Psych = psychiatry.)

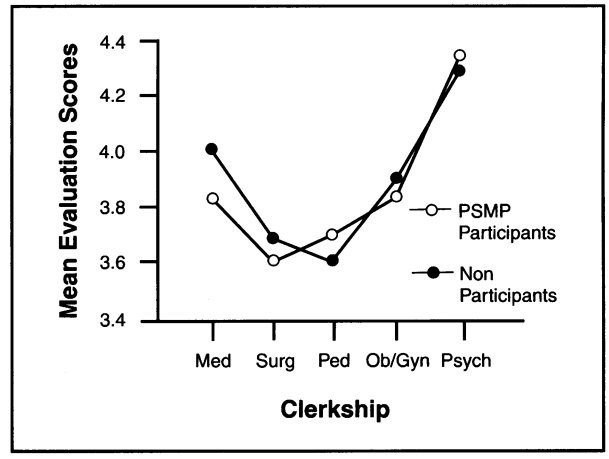

Figure 2. Mean evaluation scores for PSMP participants and nonparticipants. (Abbreviations: PSMP = Public Sector Medicine Program, Med = medicine, Surg = surgery, Ped = pediatrics, Ob/Gyn = obstetrics/gynecology, and Psych = psychiatry.)

presentation skills, discuss patient management, including diagnosis, treatment, and psychological issues.

This study was undertaken to test the hypothesis that participation in the PSMP would have a positive influence on clinical knowledge and foster an improved doctor-patient relationship in the students who participated in the program, as demonstrated by enhanced clinical performance during the third-year clerkships when compared with nonparticipants.

METHOD

After completion of the third-year clerkships, data were collected from a random sample of 56 program participants who completed their third year in 1989 and 1990. The specific variables compared between the program participants and the rest of the classes were clinical knowledge and rapport with patients and colleagues. The objective criteria chosen to represent these variables were mini-board scores, faculty evaluations, and the overall final grade for each rotation. In order to perform statistical analyses, the faculty evaluations and final grades had a point value assigned (1 = poor to 5 = outstanding for the evaluations and 1 = fail to 4 = honors for the final grades).

Univariate and multivariate tests were performed to look for evidence of some positive influence of program participation on third-year performance. Comparative statistics, repeated measure analysis, and analyses of variance (ANOVAs) were performed on whole group data for each year, on men's and women's data separately, and on data for each individual clinical rotation.

RESULTS

Analysis revealed no effect of participation in the PSMP on either clinical knowledge or rapport with colleagues and patients during the third-year rotations. There were no statistically significant differences between program participants and nonparticipants in mean mini-board scores, final grades, or faculty evaluations (Figures 1 and 2), including the specific portion of the evaluation dealing with interpersonal relationships, rapport with colleagues and patients, sensitivity to patients, and other humanistic qualities. These overall findings were consistent for both years together as well as each year separately, and for all subgroups submitted to analysis (separate analysis of data by gender, by individual clerkship type, and by clerkship sequence). Some of the tests did show interesting, if not always statistically significant, peripheral differences among or between these groups.

First, the mini-board scores of the women program participants rose over the course of the year to a significant degree compared with women nonparticipants. Clerkship sequence also affected the overall

grade of all students in the pediatric rotation. These grades were slightly lower in later time slots, despite no significant differences in the mini-board scores or faculty evaluation from students who took this rotation earlier in the year.

Among the findings that were noteworthy but not statistically significant were that for each clerkship time slot (one through five), the overall scores of the PSMP students were above those of the nonparticipants. The PSMP participants also tended to exhibit more consistent performance across clerkships. For example, the mean difference in mini-board scores for PSMP participants across 10 clerkship pairs was 52 points versus 68 points for nonparticipants.

Finally, while the faculty evaluations of the participants were slightly better over the first two rotations than those of nonparticipants, the opposite was true for mini-board scores.

DISCUSSION

The body of literature that examines the effects of outside influences on medical students' performance during the third-year clerkships is not extensive. An important study by Murden et al[4] examined the relationship between a student's achievement, motivation, and rapport and the strength of his or her internship recommendation letter. Carline et al[5] explored the correlation of Medical College Admission Test (MCAT) scores to scores on Part II of the National Board of Medical Examiners, and both Stilman[6] and Baciewicz et al[7] examined the influence of the structure and timing of certain clerkships on student performance during that rotation.

This is the first study where medical school-affiliated clinical experience before the third year was tested for its possible influence on later clerkship performance. Although it seems reasonable to expect that 50 or more clinic sessions would enhance later clinical performance, the results of data analysis did not support this expectation. The structure of the PSMP compared with the third-year clinical experience may account for these results, as the PSMP is strictly outpatient care while the third-year rotations afford inpatient experience. There also may have been a ceiling effect: all students selected for medical school are screened during the admissions interview for traits believed to be associated with success in medical school. Therefore, if all matriculants possess these traits, differences among subgroups should be minimal. Conversely, if it was expected that the type of student who would volunteer for a program such as the PSMP might have better rapport and sensitivity with patients and therefore receive better faculty evaluations in these areas, it must be remembered that the control group contained a majority of would-be volunteers. It would take them little time in the concentrated third-year rotations to catch up with the PSMP group in the targeted interpersonal skills. Indeed, the observation that the faculty evaluations were better for program participants only during the first two rotations seems to support this view.

The only academic advantage PSMP participants demonstrated over nonparticipants was their greater consistency in mini-board scores across all third-year time slots. However, the body of data collected has suggested other questions for investigation. Remembering the dissimilarity between the PSMP experience and the structure of the third-year rotations, it may be more plausible to look to the fourth-year clerkships for influence of this popular program. Also, in light of the present and predicted numbers of people without health insurance, it would be useful to know whether participation in the PSMP inspires continued sensitivity to and volunteerism in service of the medically indigent throughout a physician's career.

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