

WHICH FIRST-YEAR MEDICAL STUDENTS EXPECT TO PRACTICE IN AN INNER-CITY OR GHETTO SETTING

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The authors examined the expected practice location of first-year medical students at UCLA School of Medicine using self-administered questionnaires. The response rate was 94 percent. About 24 percent of students are from underserved minority groups. Compared with nonminority students, minority students are significantly older, of lower socioeconomic status, and more likely to have been raised in an inner-city or ghetto environment (each $P < .05$). While the average nonminority student expected to practice in a noninner-city, urban, or suburban environment, the average minority student expected to practice in an inner-city or ghetto environment ($P < .0001$). Differences in expected practice location due to ethnicity remained after controlling for sociodemographic factors. Students with previous medical experience and those from poorer sociodemographic backgrounds are also more likely to expect to practice in ghetto environments, regardless of ethnic background (each $P < .05$).

Beginning in 1968, most medical schools in the United States developed affirmative action programs to increase the proportion of students from ethnic minority backgrounds.^{1,2} As a result of these programs, minority enrollment increased

from 2 to 4 percent in 1968-1969 to 8.1 percent in 1977-1978.³ Since the mid-1970s, however, this percentage has remained stable; recently, in predominantly white schools (ie, schools other than Howard, Meharry, and Moorhouse), the percentage has fallen.⁴ Nevertheless, some important goals of affirmative action have been partially achieved: (1) the number of minority physicians has been significantly increased; (2) minority physicians tend to treat a relatively higher proportion of patients from ethnic minority backgrounds than do nonminority physicians; and (3) minority physicians are more likely than nonminority physicians to practice in underserved geographic areas.^{5,6}

It has not been clear, however, whether minorities enter medical school with the expectation to practice in underserved areas (eg, a societal obligation) or whether that decision occurs later (eg, difficulty establishing practices in other communities). In this paper, the expected practice locations for first-year medical students as a function of ethnic backgrounds are examined as well as whether differences in the expectations of minority and nonminority students are attributable to other factors, such as socioeconomic status.

METHODS

The population consisted of all 145 first-year medical students at the UCLA School of Medicine during the 1982-1983 academic year. Twenty-one of the students were enrolled in the Charles R. Drew/UCLA Medical Education Program, a recently developed program that emphasizes the importance of providing comprehensive medical services to inner-city, underserved populations.

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TABLE 1. CHARACTERISTICS OF MEDICAL STUDENT RESPONDENTS

Student Characteristic	Student Ethnicity				Significance Level*
	White	Black	Asian	Hispanic	
Number of students	79	18	23	16	
Percent female	32.1	33.3	34.8	62.5	NS
Mean age	23.6	23.9	22.3	25.1	P < .01
Mean years of education					
Mother	16	16	15	11	P < .001
Father	17	16	18	12	P < .0001
Years of medical experience	2.0	2.3	1.7	2.4	NS
Income (%) ≤ 30,000	30.3	47.1	25.0	68.8	P < .05

*Chi square or F test for differences among all four groups in proportions or means

On two consecutive days at the beginning of the winter quarter, students were asked to remain after a course lecture to complete the study questionnaire.

Expected Practice Location

The self-administered questionnaire measured whether the student anticipated practicing in an inner-city, ghetto, other urban, suburban, or rural environment. Inner-city and ghetto locations were contrasted with all other locations.

Explanatory Variables

Explanatory variables for the analysis include the student's ethnicity (categorized as Hispanic, black, Asian, or white), age, sex, socioeconomic status (parents' education, income, and occupation) and years of previous medical experience. This information was also elicited by the study questionnaire.

Statistical Analysis

Bivariate and multiple logistic regression analyses were performed to examine expected practice location as a function of student ethnicity and of the other explanatory variables noted above.

RESULTS

Student Characteristics

Of the 145 first-year students, 136 completed the study questionnaire, for a response rate of 94 percent. Student characteristics are listed in Table 1. Of all students, 58 percent are white, 13 percent are black, 16.9 percent are Asian, and 11.8 percent are Hispanic. Roughly one third of whites, blacks, and Asians are female. Almost two thirds of Hispanics are female. As expected, most students are from a middle- or upper-class background; for 62 percent of students, the annual family income exceeds \$31,000 (1982 dollars). The majority of students (84 percent) had some previous medical experience, eg, as a hospital volunteer, nurse's aide or medical technician.

Students in different ethnic groups have different sociodemographic characteristics (Table 1). Black and Latino students are significantly older (on the average, one year older) and of lower socioeconomic status than white or Asian students. In particular, 58 percent of black and Latino students as opposed to 29 percent of white and Asian students have an annual family income under \$30,000 (P < .005); 35 percent of black and Latino students compared with 4 percent of other students were raised in an inner-city or ghetto environment (P < .005) (Table 2). The differences are

TABLE 2. DIFFERENCES BY STUDENT ETHNICITY IN GEOGRAPHICAL BACKGROUND*

Background	Student Ethnicity			
	White	Black	Asian	Hispanic
Rural or town	17.7	16.7	17.4	25.0
Inner-city or ghetto	3.8	33.3	4.4	37.5
Urban or suburban	78.5	50.0	78.3	37.5

*Geographical background is the area in which the student was raised. Differences by ethnicity in geographical background are significant, $P < .0002$.

greatest between Asians (highest socioeconomic status, youngest) and Latinos (lowest socioeconomic status, oldest). The ethnic groups do not differ significantly in total years of medical experience (Table 1).

Expected Practice Location

Expected practice locations chosen by students and their ethnicity are listed in Table 3. The average white or Asian student expects to practice in a noninner-city, urban, or suburban location. The average black or Hispanic student, however, expects to practice in an inner-city or ghetto location. These differences in expected location are highly significant, $P < .0001$.

Regression Analysis

When the effect of sociodemographic factors and years of previous medical experience were controlled by logistic regression, three variables were significantly related to the expectations of practicing in an inner-city or ghetto environment (Table 4). Students with higher socioeconomic status (as indicated by the level of fathers' education) are significantly less likely to expect to practice in an inner-city or ghetto location ($t = -1.99$, $P < .05$). Students with more previous medical experience are significantly more likely to anticipate such a practice location ($t = 2.38$, $P > .05$; students who are black or Hispanic are significantly more likely to anticipate such a location ($t = 1.70$, $P < .10$), even after controlling for socioeconomic background.

TABLE 3. EXPECTED PRACTICE LOCATION BY ETHNICITY*

Expected Practice Location	Student Ethnicity			
	White	Black	Asian	Hispanic
Rural or town	26.4	11.1	8.7	31.3
Inner-city or ghetto	9.7	50.0	8.7	43.8
Other, urban or suburban	63.9	38.9	82.6	25.0

*Differences by ethnicity in expected practice location are significant at $P < .0001$.

Other sociodemographic factors (ie, income, age, and sex) are not significantly related to expected practice location once ethnicity, father's education, and medical experience are controlled.

DISCUSSION

Recently, several authors have expressed concern about waning interest in affirmative action programs in predominantly nonminority medical schools.⁴ By contrast, the UCLA medical school, largely through its association with the Charles R. Drew Medical Education Program, has demonstrated increased commitment to such programs. Thus, factors associated with expected practice locations of UCLA students cannot be necessarily generalized to include students at other medical schools. Nevertheless, the UCLA-Drew Program is important to evaluate because it represents an important model for other schools that desire to enhance commitment to the service of underserved populations and the training of minority physicians.

Consistent with the findings of previous studies, the average minority student was from a significantly more disadvantaged background than the average nonminority student. This was especially the case for Hispanic students; 69 percent of whom came from families with annual incomes under \$30,000. While about 4 percent of whites and Asians were raised in an inner-city or ghetto environment, at least one third of blacks and His-

TABLE 4. LOGISTIC REGRESSION FOR EXPECTED PRACTICE LOCATION*

Explanation Variable	Logistic Coefficient	Standard Error	T Statistic	Sign Level
Father's education	-0.275	0.138	-1.99	P < .05
Years of medical experience	0.376	0.158	2.38	P < .05
Black or Hispanic	0.511	0.300	1.70	P < .10
Constant	- .759	0.716	-1.06	P > .10

*The equation includes only those variables that were statistically significant in preliminary analyses.

panics were raised in such an environment.

The average black or Hispanic student expected to practice in an inner-city or ghetto setting; the average white or Asian student expected a noninner-city, urban, or suburban practice. Thus, even at this early stage of training, the orientation of minority and nonminority students appears to be dramatically different.

Were these differences due to a confounding between ethnicity and socioeconomic status? Regression analysis indicated that underserved minority status is still significantly related to expected practice location even after controlling for socioeconomic status. However, the magnitude of the effect of ethnicity in the regression is reduced; that is, one of the reasons why minority students plan to practice in inner-city areas is that they also have lower socioeconomic status. Further, students of low socioeconomic status are relatively more likely to expect to practice in an inner-city or ghetto area, regardless of ethnic background.

The study also found that students with more prior medical experience, regardless of ethnic backgrounds, are more likely to plan to practice in inner-city or ghetto areas. There are several alternative explanations for this finding. Medical experience may sensitize students to the needs of underserved populations. Alternatively, students already committed to serving the underserved may have chosen to demonstrate this commitment prior to medical school by volunteer work or working as a nurse's aide. Of note, the effect of medical experience on expected practice location was observed even when socioeconomic status (parents' education, income, occupation) was controlled, that is, the amount of previous medical

experience is not serving as a proxy for financial need in the regression equation.

Despite the study's limitation to one class of one medical school, the findings shed light on the process of selection of practice location. In a medical school where some emphasis is given in student selection and training to meeting the needs of underserved communities, certain characteristics of students (ethnic and socioeconomic background and medical experience) are meaningfully associated with an early expression of the intention to practice in underserved urban areas. The findings may be of interest to medical educators, those evaluating the impact of affirmative action programs, and those interested in improved access to underserved communities.

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