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Minority Student Recruitment and Retention Efforts By Physical Therapy Schools in the United States

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MINORITY STUDENT RECRUITMENT AND RETENTION EFFORTS BY
PHYSICAL THERAPY SCHOOLS IN THE UNITED STATES

by

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THESIS

Submitted to the Department of Physical Therapy
of Grand Valley State University
Allendale, Michigan
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for the degree of

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1994

MINORITY STUDENTS RECRUITMENT AND RETENTION EFFORTS BY
PHYSICAL THERAPY SCHOOLS IN THE UNITED STATES

ABSTRACT

This study was designed to determine whether schools that attempt to recruit and retain minority students have greater numbers of minority applicants, enrollees, or graduates when compared to schools that make no efforts. We surveyed 125 physical therapy programs accredited by the American Physical Therapy Association's Commission on Accreditation in Physical Therapy Education in the United States. We determined what efforts were used most often. Athletic screening and using alumni were associated with a higher number of minority applicants. No efforts were associated with greater minority enrollment. Tutoring was associated with higher numbers of minority graduates. However, we found no significant difference in the number of minority applicants, enrollees, or graduates from schools that do make an effort and schools that do not make an effort. These findings indicate that current recruitment and retention efforts may not be effective.

Acknowledgements

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CHAPTER ONE
INTRODUCTION

The minority population has long been underrepresented in the work force, and the field of physical therapy is no exception. According to the 1990 Active Membership Profile Report published by the American Physical Therapy Association (APTA), the race/ethnic origin of the members of the APTA is as follows: American Indian 0.5%, Asian/Pacific Islander 2.9%, Black 1.2%, Hispanic 1.3%, Caucasian 93.8%, and other 0.3%. In contrast, the 1990 U.S. Census reports that there are 54 million Blacks, Hispanics, American Indians, and Alaskan Natives in the United States. This is 22% of the total population. Blacks alone accounted for 12.2% of the 1990 population. It is obvious from this data that the percentage of minorities in physical therapy does not accurately reflect the percentage of minorities in the United States.

Many theories attempt to explain why this underrepresentation occurs, but all describe the effect of socioeconomic influences on education. Poverty, inadequate education, and racism have contributed to the disproportionately low number of minorities in the work force.

The United States has seen increasing numbers of minority, one parent households living below the poverty

level (CEEB, 1985). Because of competing demands and priorities, these families often hesitate to go into debt for the sake of education. In addition, federal funding of grants for education have decreased, so these families find less financial aid available for their use. This lack of financial aid often discourages minorities from obtaining higher education or causes them to drop out of school (Upton & Pruitt, 1986).

College bound students of minority status also tend to have less training in the physical sciences, social sciences, and math than students of non-minority status (CEEB, 1985). Minority students also tend to be in more crowded classrooms with less access to computers and teachers trained on computers.

Racism has perpetuated this lack of proper education for minorities. Negative stereotyping of minority students leads to the perception that minority students have limited potential (Howard & Hammond, 1985). Because of this false perception, minorities do not receive adequate counseling. Therefore, minorities are not directed toward college preparatory programs.

These socially, educationally, and economically created deficits make minority students less likely to excel in fields such as physical therapy that require such background classes.

The lack of minority participation in the field of physical therapy has a detrimental effect on the health care of the minority population. Evidence exists that minority health care providers tend to practice in areas populated by minorities more than non-minorities do (Garcia & Fowkes, 1987). If insufficient numbers of minority practitioners exist then areas populated by minorities may lack physical therapy services.

In addition, a lack of minority physical therapists may mean that minorities are being treated by people that do not understand their beliefs related to health care or treatment of the ill. The United States is a culturally diverse nation. All cultures have their own beliefs and traditions regarding definitions of health, health care, and what constitutes the appropriate treatment of their ill or elderly population. We, as physical therapists, cannot possibly understand all of the cultural beliefs of the individuals that we come in contact with during everyday practice. A minority physical therapist, if one is available, may be better suited to treat a minority patient. This would allow for care that is cognizant of and centered around the patient's belief system. This cannot happen if there is a lack of minority physical therapists in the work force.

One solution for the lack of minority physical therapists in the work force may lie in recruitment and

retention of minority students into physical therapy education. Colleges and universities have attempted to ameliorate the problem of underrepresentation of minorities by implementing activities aimed at increasing the number of minority students in their programs. These activities include traditional methods of recruitment, mediation approaches, and comprehensive interventions. Traditional approaches rely on aggressive recruitment strategies to compete for a limited number of qualified students. The mediation approach also competes for the qualified students, but in addition provides opportunities for marginally qualified students and includes summer programs and academic support services. The comprehensive intervention approach works with students in their junior and senior years of high school and with community college students in hopes of expanding the pool of qualified students. Intervention programs often offer role models, college awareness, and instructional enhancement to these students to better prepare them for college.

Little systematic research has been conducted to study the effects of various recruitment and retention strategies. This is despite the fact that subjective evidence supports the usefulness of these programs. This study was a replication and expansion of a study done by Haskins, as referenced by Sandiford (1991) to determine the methods of recruitment and retention most often used by physical

therapy schools to increase the number of minority students applying to, enrolled in, and graduating from their program. We believe that current information is always vital to determine the most effective recruitment and retention efforts. Haskins surveyed 52 schools. This study was enlarged to include all 125 physical therapy programs accredited by the APTA's Commission on Accreditation in Physical Therapy Education as of November 1992.

While schools may not directly address the socioeconomic factors that affect entry of minorities into physical therapy, recruitment and retention may compensate for those effects. Studying recruitment and retention efforts already in place allows us to evaluate the success of those programs and to better direct our own efforts in ways shown to be successful.

Aims and Purpose

The purpose of this study was to determine whether schools that participate in efforts to recruit and retain minority students have greater numbers of minority students applying to, enrolled in, or graduating from their programs when compared to schools that do not participate in those efforts. We measured the effectiveness of the efforts by calculating the numbers of minority students applying to, enrolled in, and graduating from physical therapy programs that participate in recruitment and retention efforts. We then compared those numbers to numbers from programs that

do not participate in recruitment and retention programs. We also determined what efforts were used most frequently by the programs.

CHAPTER TWO
LITERATURE REVIEW

Introduction

Minorities are underrepresented in health care professions. Physical therapy is no exception. In 1983, the Board of Directors of the APTA adopted the Plan to Foster Minority Representation and Participation in Physical Therapy with goals to increase the proportion of minority students enrolled in physical therapy programs, increase funding for recruitment and support of minority students, and increase the proportion of minority physical therapists engaged in practice, administration, teaching, and research. The APTA defines minorities as those persons who are members of racial and ethnic minority groups, including but not limited to groups identified as African-American, Asian, American Indian, and Hispanic. Before the plan was implemented, minority membership in the APTA was 3.7% in 1978 and 4.3% in 1983. In 1990 minority membership increased to only 6.2% (0.5% American Indian, 2.9% Asian/Pacific Islander, 1.2% Black, and 1.3% Hispanic) (APTA 1990).

Other health professions have also struggled with a disproportionately low number of minorities. The American Occupational Therapy Association reported a 7.9% minority representation in 1990 (Walker & Brand, 1993).

Perhaps the health profession that has been aware of this problem for the longest time is medicine. In the mid-1960's, medical schools began to actively recruit minority students. In fact, after aggressive recruiting for nearly 30 years, minority enrollment in the first year class of 1991 remained at 10%, despite a commitment by the Association of American Medical Colleges (AAMC) to increase enrollment to 12% by 1976 (Petersdorf, 1992).

The 1990 U.S. census reported 54 million Blacks, Hispanics, American Indians, and Alaskan Natives in the United States- 22% of the total population. Caucasians continue to decline as a proportion of the population, and Hispanics have grown faster than predicted. Blacks accounted for 12.1% of the 1990 population (Walker, 1991). It is obvious that the percentage of minorities in health care does not reflect the percentage in the U.S. population.

This limited number of minority practitioners negatively impacts health care to minorities. Evidence shows that minority practitioners provide health care services to underserved minority areas more than do non-minority practitioners (Bruhn & Hrachovy, 1977; Davis & Davidson, 1982; Garcia & Fowkes, 1987). Thus, with a shortage of minority health care providers, these underserved areas may remain so unless the number of minorities in health care increases.

Factors in Recruitment and Retention

Multiple factors influence minority individuals in choosing a health career. Bruhn and Hrachovy (1977) conducted a study using a questionnaire given to a sample of college students at two predominantly black colleges to ascertain their feelings about opportunities in the health professions. Those individuals interested in pursuing a health career were more concerned with meeting unmet needs, such as those in the ghetto, than with income and prestige; they saw health careers as an avenue of service to society and as job security in health professions.

Moore-West, West, and Obenshain (1984) designed a questionnaire to assess undergraduate minority students' attitudes toward careers in medicine and what factors influenced the decision to pursue medicine. The questionnaire was mailed in 1981 to 5,000 minority students attending the University of New Mexico. Family, friends, and self-confidence rated as the top encouraging factors when deciding on a health career. Factors they found that discouraged pursuit of a health career were too much schooling, difficult course work, and poor study habits and grades.

Another study at a community college found that influential factors in recruitment and retention of minority students included printed literature, flexible course scheduling, and the availability of developmental courses

(Quintilian, 1985). Other factors included personal experience with treatment at a health care facility, contact with allied health counselors, and friend and peer support.

A previously cited study that described how minority students learned about health professions identified the most frequent information sources as family members, personal experience, career day and field trips, association with the health professions, teachers, and school counselors (Bruhn & Hrachovy, 1977). Books, magazines and newspapers, television, and friends less frequently provided minority students with sources of information.

Although many factors influence minorities to choose a career in a health profession, minorities continue to experience significant obstacles to obtaining necessary science education in United States colleges and universities. A major barrier to pursuing education in a health profession is the lack of financial aid (Bruhn & Hrachovy, 1977; Petersdorf, 1992; Quintilian, 1985). Families from lower income levels are hesitant or unable to go into debt to pay for education. This prevents many minorities from entering college or causes them to drop out.

Sleeth and Mishell (1977) found that economic hardship as well as family expectations and attitudes discourage minority students from entering long professional programs in the health field. Other barriers cited in the literature are lack of information about health careers, inadequate

career counseling, parents' lack of education, fear of discrimination, (Bruhn & Hrachovy, 1977; Taylor, Hunt, & Temple, 1990) and lack of role models (Quintilian, 1985).

Inadequate educational preparation is cited frequently as a significant obstacle to careers in science-related professions (Bruhn & Hrachovy, 1977; Davis & Davidson, 1982; Lourenco, 1983; Petersdorf, 1992; Taylor, et al 1990). Minority students are often poorly prepared for difficult scientific work and less well prepared in mathematics than non-minority students (Sleeth & Mishell, 1977). Petersdorf (1992) pointed to the fact that 5.5% of black college freshman select medicine as their first career choice, compared with 3.2% of white freshman. Very low college completion rates for blacks and Hispanics, however, and difficulty with introductory science courses cause many of these students to drop out of medicine.

Poor academic preparation produces a diminished pool of academically qualified minority applicants to medical or allied health schools. Medical schools find themselves competing for the same small pool of applicants. Minority representation in health professions cannot increase if there are insufficient numbers of minority students applying to schools, graduating from college, or even finishing high school with satisfactory skills to complete an introductory college science course (Petersdorf, 1992).

Recruitment and Retention Programs

Medical and allied health schools have begun to address issues regarding minority student recruitment and retention. Early outreach programs have the purpose of introducing students at an early age to the opportunities in and the need for serving in a health profession. These programs seek to prepare, motivate, and educate talented, economically disadvantaged junior high and high school students to pursue careers in health fields and to help students realistically commit themselves to the extensive programs demanded by the health professions (Lourenco, 1983). Lourenco claims that if there is to be a sufficient qualified pool of minority youths to draw upon in the future, major intervention needs to take place in the elementary school, although it will take several years to see the benefits.

Some colleges have taken the initiative to go into junior and senior high schools and develop a link between them. The City University of New York Medical School and the New York City Board of Education developed a collaborative program in 1986 called the Gateway to Higher Education (Slater & Iler, 1991). This program encompasses all four years of high school and primarily enrolls Blacks and Hispanics from five participating schools in New York City. The students are prepared for college and professional careers with an emphasis in medicine, science,

and teaching. The results have been significant up to this point. One-hundred and fourteen of the first 119 graduating students attended college and many scored significantly higher on state and national tests.

Baylor College of Medicine faculty have participated in specialized high school programs designed to foster interest in medicine, the health professions, and biomedical sciences. The most significant of these is the High School for the Health Professions (HSHP), started in 1972. Students apply for admission and are selected according to academic performance, test scores, conduct, and personal interviews. The curriculum combines a rigorous pre-college academic program with learning experiences in health-related activities. Baylor has also established professional development programs for high school science and mathematics teachers (Butler, 1991; Thompson, Roush, Smith, & Holcomb, 1984). Analysis of the HSHP program through 1987 proved its success. Ninety-two percent of questionnaire respondents had attended college and 75% of this group had chosen science or health-related majors (Butler, Thompson, Morrissey, Miller, & Smith, 1991).

The Health Science Center at the University of Illinois began an early outreach program in 1980 for seventh and eighth graders (Lourenco, 1983). The Illinois program provides academic enrichment experiences and reinforcement in mathematics, science, and English; academic career

counseling; role models; exposure to health professionals through forums or guest speakers; exposure to a university and health sciences center environment; and development of a parent network. The goals of this outreach program are to create a longitudinal cooperative effort between school and college years; to identify, motivate, tutor, and counsel potential students; and to increase awareness of career opportunities in potential health professionals and their parents.

Many similar programs have been established. Along with intervention at the junior high and high school levels, most of these programs utilize summer enrichment workshops. Usually these workshops include courses in the sciences, problem solving, communications, health career counseling, and allied health career exploration activities (Taylor, et al, 1990; Thompson, Denk, Miller, Ochoa-Shargey, and Jibaja-Rusth, 1992; Thurmond & Mott, 1990). Students are also assigned college students as mentors (Thurmond & Mott, 1990).

Medical and allied health schools must not only utilize extensive recruitment strategies; they must also develop retention activities to ensure that the minorities recruited to the school also graduate from the school. Factors that have been found most influential in retention of students of minority background are flexible scheduling, supportiveness of peers at the college, supportiveness of clinical

personnel at hospitals, individualized education options, and faculty acceptance and helpfulness (Quintilian, 1985). Other retention factors that are moderately influential include the use of minority faculty, counseling services, and tutorial services.

The School of Allied Health Sciences at the University of Texas Medical Branch has developed an early enrollment program to acclimate the new student before the beginning of the school year (Baker & Lyons, 1989). Many disadvantaged students must deal with new issues such as a highly competitive environment. Those students find themselves a long way from home, from traditional support systems, and from cultural familiarity. This program helps students to identify support systems, study groups, and faculty support at the university.

Haskins designed a study in 1990 to determine what methods physical therapy programs utilize to improve the number of minority students applying to, enrolling in, and graduating from PT schools (Sandiford, 1991). Of the 52 PT programs surveyed, the 10 most frequent recruitment strategies were identified:

1. use of brochures, fliers, pamphlets, etc. to advertise the program
2. use of faculty in recruitment efforts
3. use of students in recruitment efforts
4. use of non-traditional admissions criteria

5. use of alumni in recruitment efforts
6. use of special flexible admissions policies
7. use of local practitioners in recruitment efforts
8. participate in career fairs
9. sponsor open houses and field trips to the institution
10. participate in health fairs

The 10 most frequent retention strategies implemented by the programs surveyed were:

1. provide academic counseling
2. discuss cultural differences in the curriculum
3. monitor student grade point averages
4. encourage minority student participation in cultural events
5. provide orientation activities
6. provide tutoring
7. provide personal counseling
8. provide career counseling
9. sponsor minority guest speakers
10. teach to different cognitive styles

Haskins found a significant relationship between the mean equity scores for applications (MESA) to physical therapy schools and the recruitment activities of talking to parent groups and keeping in touch with potential minority students (Sandiford, 1991). Those programs with higher MESAs also reported using such strategies as special or flexible

admissions policies, providing preprofessional enrichment courses, setting quantitative goals for minority student enrollment, and disseminating financial aid information to minority students. Programs with a higher mean equity score for enrollment (MESE) reported assisting applicants in completing admissions applications. No retention strategies were positively associated with the mean equity score for graduation (MESG).

The physical therapy program at Florida International University, where Haskins serves as director, received funding to initiate a program in 1984 for recruitment and retention of minority students. Prior to 1988, the physical therapy program had admitted and graduated only 0.8% blacks (Haskins, 1988). With implementation of the program, the percentage of black graduates increased to 6.5%. Prior to 1985, only 5.4% of the program's graduates were Hispanics. From 1985-1988, the percentage of Hispanic graduates increased to 15%.

The physical therapy department at Florida International University identified factors they believe to be critical to minority student recruitment. These include (1) recruitment by minority role models, (2) flexible admissions and retention policies, (3) diagnostic testing to determine student's academic skills, study habits, and attitudes, (4) tutoring, (5) tracking of community college pre-physical therapy majors, and (6) summer college-level

courses for high school and lower-division students (Haskins, 1989).

A review of the literature indicates the need for an increased effort in studying minority recruitment and retention. The literature describes many barriers that discourage or prevent minorities from pursuing a career in health. To summarize, these include lack of financial aid, inadequate educational preparation, lack of information about health careers, fear of discrimination, and lack of role models.

The literature, however, indicates several factors that influence minorities in pursuing a health profession. These consist of family and friend support; exposure to health careers through personal experience with a health professional; career days; field trips; and receiving information about careers in health from family, teachers, and school counselors.

Although many physical therapy schools have established programs for recruitment and retention, minority underrepresentation persists in plaguing the profession. The profession must continue to investigate reasons for this problem and study what has been found in the literature to be effective.

With this study, we determined how many physical therapy programs use the methods described to recruit and retain minority students. We also determined which methods

programs use most frequently and how effective they are as measured by the number of minorities applying to, enrolling in, and graduating from the program. This information will be useful in developing minority recruitment and retention programs in schools that currently have no program. It will also be useful to the schools that currently have programs to better direct their efforts.

CHAPTER THREE

METHODOLOGY

Design

This study employed the use of a survey to collect data regarding the recruitment and retention efforts of physical therapy programs in the United States accredited by the APTA's Commission of Accreditation in Physical Therapy Education (CAPTE).

Sample

The sample included in this study consisted of directors and interim directors of the physical therapy programs that are accredited by the APTA's CAPTE in the United States as of November 1992. The list of this population was obtained from the APTA brochure entitled *Education Programs* dated November 1992. The total number of subjects surveyed in this study was 125.

Instrument

The survey (see Appendix A) used in this study was developed by Haskins for use in the original study. Validity and reliability of the survey were established by Ms. Haskins through means of a pilot study. Minor changes were made to the survey to assist us in further data collection not included in the original study.

Procedures

Our survey was sent to the directors or interim directors of the physical therapy programs accredited by the APTA's CAPTE in the United States as of November 1992. The survey was approved for use by the human subjects review board at Grand Valley State University before being used in this study. Included with the survey was a cover letter (see Appendix B) explaining the purpose of the study and a return envelope. The cover letter also served as informed consent to participate.

Surveys were sent to the program directors October 2, 1993. The participants were asked to return the surveys by October 22, 1993. Because of an error in the directions of the survey, it was necessary to mail page 7 of the survey back to the "no effort" schools to be completed.

Part I of the survey, which was completed by all programs, was used to determine the characteristics of the program. The answer to question 8 in part I of the survey was used to stratify the programs into two groups. Those that answered yes were labeled as "effort" schools, meaning that they participate in efforts to recruit or retain minority students. Those that answered no were labeled as "no effort" schools, meaning that they do not participate in any effort to recruit or retain minority students.

Part II of the survey was completed only by the "effort" schools. This portion of the survey addresses

recruitment and retention activities that the programs participate in. This portion of the survey was used to determine what methods of recruitment and retention the programs used most frequently.

Part III of the survey, which was completed by all programs, gave us information regarding the number of students that are in three different categories: applying to, enrolled in, and graduating from the programs. This section required the director to list the number of minority students in each category. This allowed us to determine what percentage of their students are minorities.

We then compared the percentages of minorities applying to, being enrolled in, and graduating from the physical therapy programs between the two groups. This comparison was used to determine the effectiveness of recruitment and retention programs at the schools.

All information we received from the schools remained confidential. All schools were assigned a number and that number was placed on the top of the survey and the outside of the return envelope. That number was only used to determine which schools requested a copy of the results. The school name or number is never referred to in the study.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

Techniques

T-tests were used to compare the average number of students applying to, enrolled in, and graduating from the effort schools and the no effort schools. Both the total number of minority students and the total for each individual race were calculated. The results were used to determine whether effort schools have higher numbers of minority students applying to their program, enrolled in their program, or graduating from their program. The p value was set at .05.

Frequency distributions were created for the questions in part II of the survey, which was completed by only the effort schools, to determine what percent of the schools participate in particular recruitment and retention activities. There were 37 recruitment efforts and 31 retention efforts included in the survey.

Chi square tests were used to determine which recruitment efforts were associated with schools that had minorities comprising at least 5% of the total applicants. Chi square tests were also used to determine which recruitment efforts were associated with schools where minorities comprise at least 5% of the total enrolled. Finally, these tests were used to determine which retention

efforts were associated with schools where minorities comprise at least 5% of the total graduates.

Percentages were calculated to determine minority applicants, enrollees, and graduates. In addition, minorities were broken down into 5 categories: Black, Hispanic, American Indian, Asian, and other. Percentages were calculated for applicants (see Figure 1), enrollees (see Figure 2), and graduates (see Figure 3) in each category.

Hypothesis and Research Question

We expected a survey return of at least 50%. It was expected that the schools that participate in efforts to recruit and retain minority students would have significantly higher percentages of minority students applying to, enrolled in, and graduating from their program when compared with no effort schools. Furthermore, it was expected that certain recruitment efforts would be associated with higher numbers of minority students applying to and enrolling in programs that participate in those efforts. It was also expected that certain retention efforts would be associated with higher numbers of minority students graduating from programs that participate in those particular efforts.

Therefore, the null hypothesis that there is no difference in the number of minority students applying to, enrolled in, and graduating from effort schools compared to

no effort schools would be discredited. Also, the null hypothesis that there is no association between certain recruitment efforts and the number of minority applicants or minority enrollees or certain retention efforts and the number of minority graduates would be discredited.

Results of Data

Seventy-seven of the 125 surveys sent out were returned for a return rate of 61.6%. Of the 77 returned only 73 of the surveys were usable giving a percentage of 58.4%. Fifty-five of the 73 surveys were effort schools for a percentage of 75.3% and 18 of the 73 were no effort for a percentage of 24.7%.

Using the results from the t test the null hypothesis could not be rejected. No significant difference was found in the number of minority students applying to programs ($p=.92$), enrolled in programs ($p=.33$), or graduating from programs ($p=.22$) when comparing effort schools to no effort schools (see Table 1).

Using the results from the frequency tests 14 of the 37 recruitment activities were participated in by at least 50% of the effort schools. The top 10 of these efforts in order of frequency are as follows:

1. utilize brochures, fliers, pamphlets (n=51)
2. use current faculty in recruitment efforts (n=51)
3. participate in career fairs (n=51)
4. sponsor open houses or field trips to their facility

(n=43)

5. use current students in recruitment efforts (n=43)
6. participate in health fairs (n=40)
7. reflect cultural diversity as a program goal (n=40)
8. participate in visits to high schools (n=38)
9. disseminate financial aid information to potential minority students (n=38)
10. use audiovisual media (n=37)

In our study 13 of the 31 retention activities were utilized by at least 50% of the effort schools. The top 10 are as follows:

1. provide academic counseling (n=51)
2. monitor student grade point averages (n=50)
3. provide personal counseling (n=45)
4. discuss cultural differences in the curriculum (n=42)
5. provide career counseling (n=42)
6. provide orientation activities (n=41)
7. re-exam policies (n=41)
8. provide tutoring (n=37)
9. teach to different cognitive styles (n=34)
10. encourage minority student participation in cultural events (n=35)

Results of the chi square test indicated that there was an association between schools with minorities constituting 5% of the total applicants to their program and the

recruitment activities of participation in athletic screenings ($p = .02$) and the use of alumni ($p = .01$) when $p = .05$ for significance. However, an association was also found between schools with less than 5% minority applicants and the recruitment activity of sponsoring family days (see Table 2).

There was no statistical significance found between any of the recruitment efforts and schools that had minorities comprising at least 5% of the total enrollment in their program. Three recruitment activities were associated with schools with less than 5% minority enrollment: participation in teaching in high schools, participation in teaching in community colleges, and set quantitative goals for minority student enrollment (see Table 3).

An association was found between schools with minority graduates comprising at least 5% of the total graduates of their program and the retention effort of providing tutoring ($p = .02$). One retention activity, involving students' families, was associated with schools with less than 5% minority graduates (see Table 4).

Other Findings of Interest

Other findings of this study include the fact that only 7 of the effort schools receive funding for their recruitment and retention efforts. Five of the schools reported the amount of funding received and the range was from \$10,000 to \$270,000 with the average being \$32,600.

Also noted on several of the surveys was that some programs had offered positions to minorities but that they declined the position. The reason for declining the position was not given.

Another finding was the percentages of minority faculty members at the schools. Of the 55 effort schools there were 27.3 minority faculty members out of 469.6 total faculty giving a percentage of 5.8%. Out of the 18 no effort schools there were 2 minority faculty members out of 121.8 total faculty members giving a percentage of 1.6%.

CHAPTER FIVE

DISCUSSION AND IMPLICATIONS

Discussion of Findings

The results showed that 75.3% of the schools responding to this survey participate in recruitment and retention efforts, yet no statistical significance was found between effort schools and no effort schools in the total numbers of minorities applying to, enrolling in, and graduating from their schools. However, when the percentages were considered by individual minority group, the data seemed to indicate some trends when comparing effort and no effort schools.

Effort schools had a greater percentage of Black applicants, enrollees, and graduates; Hispanic applicants and graduates; and Asian enrollees and graduates. No effort schools had a greater percentage of Hispanic enrollees and American Indian enrollees and graduates (see Figure 1, Figure 2, and Figure 3). These percentages indicate that current recruitment and retention activities may be reaching Black, Hispanic, and Asian students, but may not be affecting the numbers of American Indian students in physical therapy.

The 10 most frequent recruitment activities identified in our study were similar to those identified by Haskins. However, these frequent activities were not the same activities found to be associated with schools who have

greater than 5% minority applicants. The efforts that were associated with higher minority applicants were participation in athletic screenings and use of alumni. Although not statistically significant, the data seemed to indicate that participation in scoliosis screenings and the use of local practitioners may be associated with higher number of minority applicants. Of the effort schools, 27.8% participated in athletic screenings, 43.6% use alumni, 27.3% participate in scoliosis screenings, and 31.5% use local practitioners. In the original study, Haskins found a statistically significant relationship between MESA and recruitment activities of talking to parent groups and keeping in touch with potential minority applicants.

Incorporating these efforts into more programs may make physical therapy more visible to students at various levels of education. The literature suggests that personal experience with a health professional influences students to consider careers in health (Bruhn & Hrachovy, 1977; Quintilian, 1985). Athletic and scoliosis screenings put physical therapists in direct contact with students, and gives students an opportunity to see first hand what therapists do. Local practitioners can serve as role models and give direction to interested students.

These activities are, however, much more time and energy intensive and require a strong commitment from physical therapy educators. Physical therapy schools seem

to select easier, less energy intensive methods with the end results that their outcomes are disappointing at best or totally ineffective at worst.

One recruitment activity, sponsoring family days, which involves direct contact with students and families, was associated with schools with less than 5% minority applicants but not with schools with greater than 5% minority applicants. This finding does not support the effectiveness of direct contact activities in increasing minority applicants, however the true effectiveness of family days cannot be determined by the results of our study. Perhaps schools who used this activity would have had even fewer minority applicants without the use of family days.

No activities were associated with a higher percentage of minority enrollment. We concluded that the recruitment activities were not effective in increasing the number of minorities enrolled in programs. These recruitment efforts may not ensure that all minorities who are accepted will in fact accept a position in their program. Reasons for this are unknown, although Haskins' study found that assisting applicants in completing admissions applications was associated with programs with a higher mean equity score for enrollment (Sandiford, 1991). Therefore, schools may have more success in enrolling minorities if they use this recruitment effort. However, three recruitment activities

were significantly associated with schools with less than 5% minority enrollees. One of these activities was setting quantitative goals for minority student enrollment. The results of our study do not support the use of reserved placement for minority students, although schools may have had even fewer minority enrollees without the use of this activity.

Effective efforts for increasing minority applications may not be effective in ensuring that these students are qualified for admission to the program. To produce qualified applicants, educators may need to target elementary and high school science education directly.

Petersdorf (1992) reports that

there has been no improvement in the percentage of minority high school seniors who have mastered advanced skills that are prerequisites to success in college.

...According to the National Assessment of Educational Progress' (NAEP) findings in 1986, only .05% of black 17-year-olds were able to integrate specialized scientific information for use in problem solving -a prerequisite skill for college science courses.

...We must conclude from these bodies of data that substantial increases in minority student enrollment cannot be attained solely through more

aggressive recruiting from the existing pool of premedical students.

The 10 most frequent retention activities identified in our study were similar to those identified by Haskins. In the original study, Haskins found no retention strategies positively associated with MESG. In this study, however, providing tutoring, utilized by 67.3% of the effort schools, was associated with a higher percentage of minority graduates. Although not statistically significant, the data seemed to indicate that evaluating student assessment of support programs may also be associated with higher percentage of minority graduates. Providing tutoring was number 8 in the list of the top 10 most frequent retention activities, while evaluating student assessment of support programs was utilized by less than 50% of the effort schools. Incorporating these efforts may influence the number of minorities graduating from physical therapy programs.

Several possibilities exist for the differences in results between the original study by Haskins and this study. We implemented Ms. Haskins recommendation to enlarge her study to include all 125 physical therapy programs accredited by the APTA's CAPTE. This resulted in a larger sample size in our study. Our study also differed because Haskins' statistical analyses took into account demographics by calculating equity scores using the proportion of

minority 20-24 year olds in the state's population. We, however, did not utilize demographics in our statistical analyses.

Application to Education

The findings of this study suggest that even though schools actively recruit minorities, it is still not enough. Perhaps more activities need to be done simultaneously for these efforts to be successful. Another option would be to use different activities altogether, such as the energy intensive activities as suggested in the discussion above.

Recruitment activities noted to be used by less than 25% of the effort schools include talks to church groups, talks to parent groups, participating in HOSA activities, sponsoring family days, use of the local media, sharing information about potential minority students with other physical therapy programs, assisting students in completing financial aid applications, and participating in teaching in the elementary schools, middle schools, high schools, and community colleges.

Haskins' study found a significant relationship between the mean equity scores for applications and the recruitment activities of talking to parent groups and keeping in touch with potential minority students (Sandiford, 1991). Physical therapy educators need to look more closely at these activities. Most of these activities would give educators a direct contact with minorities and expose them

to the physical therapy profession. Again, these activities demand more energy and a greater commitment.

Educators should also consider how members of minority groups are exposed to health careers and what factors influence them to enter health careers. Factors found influential include family and friend support, personal experience with treatment by a health care professional, and school counseling (Bruhn & Hrachovy, 1977; Quintilian, 1985). The literature suggests that educators need to develop recruitment efforts that target and involve families. Also educators must use efforts that allow minorities to personally experience what it is like to be a health professional.

In order to monitor the effectiveness of their recruiting efforts, schools must keep accurate records of all phases of the admissions process. It is interesting to note that 24 schools out of the 55 effort schools, or 43.6%, had no records of minority applicants. Although these 24 schools state that they are involved in recruitment and retention of minorities, they keep no records to monitor the success of their efforts.

Effort schools do, however, keep better records of minority enrollment and graduates. Only 2 effort schools had no records of minority enrollment and only 4 effort schools had no records of minority graduates. Although schools are keeping track of minority enrollment and

graduation, it is important to look at the number of minority applicants, since it is from this pool that qualified students are accepted and can enroll in their program.

As Haskins suggested in her study, it would be advantageous to have the APTA's Department of Accreditation require all schools to monitor the number of minorities applying to, enrolled in and graduated from the program (Sandiford, 1991). It is also essential that programs keep records of the activities they have utilized for recruitment and retention of minority students, and how many years they have utilized these activities. Without these records, it is impossible to fully analyze the success of their efforts.

Another issue physical therapy educators must consider is the number of minority faculty teaching in physical therapy programs. Minority faculty made up 5.8% of total faculty of the effort schools, 1.6% of the no effort schools, and 5.0% of total faculty for all schools. Perhaps the presence of minority faculty stimulates minority recruitment efforts. While this study did not examine the effect minority faculty had on recruitment and retention of minority students, the above percentages indicate the need to study if a correlation exists between the presence of minority faculty and the number of minority students applying to, enrolling in, and graduating from physical therapy schools.

A final area of interest for physical therapy educators is the issue of external funding. Seven schools out of 73 indicated they received external funding. One can only speculate what would happen if more schools received external funding to develop a program for recruitment and retention of minority students. The literature appears to indicate that schools who received external funding had greater percentages of minority students in their program (Sandiford, 1991). Physical therapy educators, therefore, may need to seek out a source of funding and develop programs for recruitment and retention of minorities.

Limitations

A limitation of this study is that many physical therapy programs do not keep records of the number of minorities applying to, enrolling in, and graduating from their program. As stated above, to overcome this problem, it would be beneficial for the APTA to require all accredited programs to monitor these numbers.

A second limitation to this study was that it did not take into account demographics of the location of the physical therapy schools, as well as those of the college or university. Demographics may play a role in the decision of minorities to come to a particular school and should be analyzed for its impact.

A third limitation of the study is that it looked at recruitment and retention at only the program level, not at

the university level. Although this was the purpose of the study, university recruitment and retention may have benefited physical therapy schools within the university, thus increasing the number of minorities in the "no" schools and skewing the results.

Suggestions for Further Research/Modifications

Modifications of this study should include analyzing several years of graduates. The year 1993 may not have been representative of programs' past success in recruiting and retaining minority students. Averaging minority involvement over several years may be more reliable.

Future studies should also consider the demographics of the location of the physical therapy schools, as well as the college or university. Also, a study including schools who recruit at the university level would help to compare the success of efforts at the program level versus the university level.

Finally, further research in the area of minority recruitment and retention should focus on surveying minority physical therapy students or physical therapists to determine what factors prompted them to pursue a career in physical therapy. That information can be used by physical therapy schools to better direct their efforts.

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APPENDIX A

MINORITY STUDENTS IN PHYSICAL THERAPY
QUESTIONNAIRE

Part I: Characteristics of the program

1. Degree Offered:
 1. bachelors
 2. masters
 3. other (specify) _____

2. Length of professional program: _____ years

3. Type of institution:
 1. public
 2. private
 3. other (specify) _____

4. Administrative structure:
 1. College/school of medicine
 2. College/school of health sciences or allied health
 3. College/school of physical therapy
 4. College/school of education
 5. College/school of arts and sciences
 6. College/school of technology
 7. Graduate school or college
 8. Other (please specify): _____

5. Average annual cost of tuition (rounded to nearest dollar amount): _ _ _ _ _

6. Total number of full-time faculty positions in the physical therapy department currently filled: _ _ _

7. Total number of full-time faculty positions in the physical therapy department currently filled by a person who is:
 1. Black _____
 2. Hispanic _____
 3. American Indian _____
 4. Asian or Pacific Islander _____
 5. Other (specify): _____

8. Does the program make or participate in any special effort to recruit or retain minorities?
 1. Yes (if yes, proceed to question 9a)
 2. No (if no, proceed to Part III on page 7)

- 9a. Does the program receive external funding for the purpose of recruiting or retaining minority students?
1. Yes (if yes, proceed to question 9b)
 2. No (if no, proceed to question 10a)
- 9b. Average annual amount of external funding received
(round to the nearest dollar amount) _ _ _ _ _
-

- 10a. Does the program participate in an effort involving other units (a larger effort) which receives external funding for the purpose of recruiting or retaining minority students?
1. Yes (if yes, proceed to question 10b and 10c)
 2. No (if no, proceed to part II)
- 10b. At what level is the larger effort funded?
1. division
 2. school or college
 3. several schools or colleges
 4. institution
 5. several institutions
 6. consortia of physical therapy programs
 7. other (specify) _____
- 10c. Average annual amount of external funding received
(round to the nearest dollar amount) _ _ _ _ _

Proceed to Part II on page 3

Part II: Recruitment and Retention Activities

Has your program participated in any of the following activities?
Circle YES or NO. If YES, please indicate:

- a. Average number of times/year
- b. Number of years you have been participating in this activity.

Recruitment Activities

- | | | | | |
|--|-----|----|-----|-----|
| 1. visits to elementary schools | YES | NO | a__ | b__ |
| 2. visits to middle schools | YES | NO | a__ | b__ |
| 3. visits to high schools | YES | NO | a__ | b__ |
| 4. visits to community colleges | YES | NO | a__ | b__ |
| 5. visits to minority institutions | YES | NO | a__ | b__ |
| 6. talks to church groups | YES | NO | a__ | b__ |
| 7. talks to parent groups | YES | NO | a__ | b__ |
| 8. participation in Health Occupations
Students of America (HOSA)
activities | YES | NO | a__ | b__ |
| 9. participation in career fairs | YES | NO | a__ | b__ |
| 10. participation in health fair | YES | NO | a__ | b__ |
| 11. participation in athletic
screenings | YES | NO | a__ | b__ |
| 12. participation in scoliosis
screenings | YES | NO | a__ | b__ |
| 13. sponsor open houses or field
trips to your facility | YES | NO | a__ | b__ |
| 14. utilize brochures, fliers,
pamphlets | YES | NO | a__ | b__ |
| 15. sponsor family days | YES | NO | a__ | b__ |
| 16. use current faculty | YES | NO | a__ | b__ |

If yes: number of minority faculty participating ____
 number of non-minority faculty participating ____

- | | | | | |
|--------------------------|-----|----|-----|-----|
| 17. use current students | YES | NO | a__ | b__ |
|--------------------------|-----|----|-----|-----|

If yes: number of minority students participating ____
 number of non-minority students participating ____

18. use alumni YES NO a___ b___
If yes: number of minority alumni participating ___
number of non-minority alumni participating ___
19. use local practitioners YES NO a___ b___
If yes: number of minority practitioners
participating ___
number of non-minority practitioners
participating ___
20. use audiovisual media YES NO a___ b___
21. use the local media YES NO a___ b___
22. keep in touch with potential
minority students YES NO a___ b___
23. receive/share information about
potential minority students with
other PT programs YES NO a___ b___
24. disseminate financial aid
information to potential minority
students YES NO a___ b___
25. participate in teaching in the
elementary schools YES NO a___ b___
26. participate in teaching in the
middle schools YES NO a___ b___
27. participate in teaching in the
high schools YES NO a___ b___
28. participate in teaching in the
community colleges YES NO a___ b___
29. use special or flexible admissions
policies YES NO a___ b___
30. use non-traditional criteria for
admissions YES NO a___ b___
31. provide preprofessional enrichment
courses YES NO a___ b___
32. participate in courses which
introduce minorities to PT or to
the health professions YES NO a___ b___
33. assist students in completing
financial aid applications YES NO a___ b___
34. assist students in completing
admissions applications YES NO a___ b___

35. provide or serve as mentors for potential minority students YES NO a___ b___
36. set quantitative goals for minority student enrollment YES NO a___ b___
37. reflect cultural diversity as a program goal YES NO a___ b___

Retention Activities

Please circle YES or NO and indicate in the blank how long you have been participating in this activity.

1. testing of basic skills YES NO ___
2. remediation of basic skills using own or institutional resources YES NO ___
3. providing tutoring YES NO ___
4. orientation activities YES NO ___
If YES, average number of days/year ___
5. acculturation activities YES NO ___
If YES, average number of days/year ___
6. test taking skills intervention YES NO ___
7. study skills intervention YES NO ___
8. sponsor minority guest speakers YES NO ___
If YES, average number of minority speakers/year ___
9. sensitivity training for non-minority faculty YES NO ___
10. allow or encourage minority student participation in cultural events, activities, or clubs YES NO ___
11. provide student leadership development through participation in HOSA activities YES NO ___
12. provide scholarships specifically for minority students YES NO ___
If YES, average number of such scholarships/year ___
13. provide college work study opportunities for minority students YES NO ___
If YES, average number of minority CWS students/year ___

- | | | | |
|---|-----|----|-----|
| 14. provide teaching or research assistantships for minority students | YES | NO | ___ |
| If YES, average number of TAs or RAs for minorities/year ___ | | | |
| 15. provide personal counseling | YES | NO | ___ |
| 16. provide academic counseling | YES | NO | ___ |
| 17. provide career counseling | YES | NO | ___ |
| 18. provide computer assisted instruction | YES | NO | ___ |
| 19. use learning groups | YES | NO | ___ |
| 20. discuss racism in the curriculum | YES | NO | ___ |
| 21. discuss cultural differences in the curriculum | YES | NO | ___ |
| 22. teach to different cognitive styles | YES | NO | ___ |
| 23. examine racial bias in the curriculum | YES | NO | ___ |
| 24. establish mentors for minority students | YES | NO | ___ |
| 25. flexible retention policies (e.g. extended track programs) | YES | NO | ___ |
| 26. involve students' families | YES | NO | ___ |
| 27. provide child care | YES | NO | ___ |
| 28. monitor student GPAs | YES | NO | ___ |
| 29. follow-up on students who drop out | YES | NO | ___ |
| 30. evaluate student assessment of support programs | YES | NO | ___ |
| 31. have re-examination policies (e.g. make-up exams) | YES | NO | ___ |

Proceed to Part III on Page 7

Part III: Number of Students

1. Please complete the following table for the year in which the class which graduated in 1993 was admitted.

The class which graduated in 1993 was admitted in 19 __ __.

There were:

Total number
of applicants ____

Total number of
minority applicants ____

The minorities consisted of (e.g. numbers in each category):

Blacks	___
Hispanics	___
Amer. Ind.	___
Asians*	___
Other	___
No records	___

2. Please complete the following table for the class of 1993.

In the first year of professional study of the class of 1993, there were:

Total number
enrolled ____

Total number of
minority enrollment ____

The minorities consisted of (e.g. numbers in each category):

Blacks	___
Hispanics	___
Amer. Ind.	___
Asian*	___
Other	___

Part III is continued on page 8

3. Please complete the following table for the class which graduated in 1993:

Total number
graduated ____

Total number of
minority graduates ____

The minorities consisted of (e.g. numbers in each category):

Blacks	_____
Hispanics	_____
Amer. Ind.	_____
Asian*	_____
Other	_____

* Asian includes Pacific Islanders

I am interested in obtaining a copy of your results

APPENDIX B

October 2, 1993

School Name
Department of Physical Therapy
City, State

Dear Director,

We are currently in our last year of study for the Master of Science degree in Physical Therapy at Grand Valley State University in Allendale, MI. We are completing this research project as a requirement of that degree.

We are interested in the efforts YOUR DEPARTMENT makes in recruiting and retaining minority students into the physical therapy program at your institution. We feel this research is important as minorities are severely under-represented in the field of physical therapy. The information we compile in this research project will benefit you in implementing recruitment and retention programs for minority students.

Therefore, we are asking that you please find the time to complete the enclosed survey and return it to us, in the self addressed stamped envelope, by October 22, 1993. The answers to the survey questions should reflect what efforts YOUR DEPARTMENT makes in recruitment and retention, not the efforts any other department at the institution.

If you are interested in obtaining a copy of our results, please place a check mark at the statement indicating this on the last page of the survey.

RETURN RECEIPT OF THIS SURVEY WILL INDICATE YOUR WILLINGNESS TO PARTICIPATE AND SERVE AS INFORMED CONSENT. ALL INFORMATION WE RECEIVE WILL REMAIN CONFIDENTIAL.

Thank you in advance for your participation in this most important study. If you have any questions, we may be reached at the numbers below.

Sincerely,

Julie K. DeBoer
(616) 669-4657

Brooke E. Nyssen
(616) 453-1835

Table 1

Number of Minority Applicants, Enrollees, and Graduates in Effort vs. No Effort Schools

Minority:	Effort n=55	No Effort n=18	p value
Applicants	594	101	.92
Enrollees	186	40	.41
Graduates	150	34	.31

Table 2

Association Between Participation in Recruitment Activities and the
Percent of Minority Applicants in Physical Therapy Schools

Activity	Number of Schools That Participate in This Activity		
	n ^a	n ^b	p value
1. visits to elementary schools	8	9	.19
2. visits to middle schools	8	12	.52
3. visits to high schools	13	25	.94
4. visits to community colleges	12	18	.35
5. visits to minority institutions	12	14	.10
6. talks to church groups	2	5	.72
7. talks to parent groups	3	7	.74
8. participation in HOSA ^c activities	4	5	.44
9. participation in career fairs	18	33	.68
10. participation in health fairs	14	26	.91
11. participation in athletic screenings	9	6	.02*
12. participate in scoliosis screenings	8	7	.07
13. sponsor open houses or field trips to your facility	12	31	.09
14. utilize brochures, fliers, pamphlets	17	34	.24
15. sponsor family days	0	11	.01\$
16. use current faculty	17	34	.50
17. use current students	17	26	.19
18. use alumni	13	11	.01*
19. use local practitioners	9	8	.06
20. use audiovisual media	12	25	.64
21. use local media	3	8	.57
22. keep in touch with potential minority students	11	21	.98
23. receive/share information about potential minority students with other schools	1	2	.96
24. disseminate financial aid info to potential minority students	13	25	.94
25. participate in teaching in elementary schools	1	2	1.0
26. participation in teaching in middle schools	2	4	.95
27. participation in teaching in high schools	1	8	.12
28. participation in teaching in community college	2	4	1.0
29. use special or flexible admissions policies	11	23	.66
30. use non traditional criteria for admissions	3	13	.14
31. provide preprofessional enrichment courses	2	12	.06

32. participate in courses which introduce minorities to physical therapy or to health professions	10	15	.44
33. assist students in completing financial aid applications	3	5	.85
34. assist students in completing admissions applications	8	13	.66
35. provide or serve as mentors for potential minority students	12	20	.59
36. set quantitative goals for minority student enrollment	3	11	.23
37. reflect cultural diversity as a program goal	13	27	.60

^aSchools with >5% minority applicants

^bSchools with <5% minority applicants

^cHealth Occupations Students of America

*Significant at $p \leq .05$ for schools with >5% minority applicants

§Significant at $p \leq .05$ for schools with <5% minority applicants

Table 3

Association Between Participation in Recruitment Activities and the
Percent of Minority Enrollees in Physical Therapy Schools

Activity	Number of Schools That Participate in This Activity		
	n ^a	n ^b	p value
1. visits to elementary schools	11	6	.23
2. visits to middle schools	11	9	.80
3. visits to high schools	19	19	.55
4. visits to community colleges	17	13	.52
5. visits to minority institutions	15	11	.57
6. talks to church groups	4	3	.80
7. talks to parent groups	5	5	.85
8. participation in HOSA ^c activities	7	2	.11
9. participation in career fairs	28	23	.25
10. participation in health fairs	22	18	.58
11. participation in athletic screenings	7	8	.52
12. participate in scoliosis screenings	9	6	.51
13. sponsor open houses or field trips to your facility	21	22	.38
14. utilize brochures, fliers, pamphlets	26	25	.60
15. sponsor family days	5	6	.50
16. use current faculty	26	25	.35
17. use current students	23	20	.95
18. use alumni	14	10	.46
19. use local practitioners	9	8	.91
20. use audiovisual media	19	18	.77
21. use local media	5	6	.59
22. keep in touch with potential minority students	16	16	.63
23. receive/share information about potential minority students with other schools	2	1	.62
24. disseminate financial aid info to potential minority students	21	17	.57
25. participate in teaching in elementary schools	2	1	.64
26. participation in teaching in middle schools	1	5	.06
27. participation in teaching in high schools	2	7	.04\$
28. participation in teaching in community college	1	5	.05\$
29. use special or flexible admissions policies	17	17	.61
30. use non traditional criteria for admissions	8	8	.72
31. provide preprofessional enrichment courses	5	9	.16

32. participate in courses which introduce minorities to physical therapy or to health professions	12	13	.52
33. assist students in completing financial aid applications	3	5	.35
34. assist students in completing admissions applications	10	11	.55
35. provide or serve as mentors for potential minority students	17	15	.94
36. set quantitative goals for minority student enrollment	4	10	.04\$
37. reflect cultural diversity as a program goal	20	20	.51

^aSchools with >5% minority enrollees

^bSchools with <5% minority enrollees

^cHealth Occupations Students of America

*Significant at $p \leq .05$ for schools with >5% minority enrollees

\$Significant at $p \leq .05$ for schools with <5% minority enrollees

Table 4

Association Between Participation in Retention Activities and the Percent of Minority Graduates in Physical Therapy Schools

Activity	Number of Schools That Participate in This Activity		
	n ^a	n ^b	p value
1. testing of basic skills	10	8	.25
2. remediation of basic skills using own or institutional resources	16	15	.30
3. providing tutoring	21	16	.02*
4. orientation activities	19	22	.99
5. acculturation activities	4	3	.54
6. test taking skills intervention	12	12	.63
7. study skills intervention	14	14	.50
8. sponsor minority guest speakers	8	10	.92
9. sensitivity training for non-minority faculty	7	7	.69
10. allow or encourage minority student participation in cultural events, activities, or clubs	15	20	.49
11. provide student leadership development through participation in HOSA ^C activities	0	0	
12. provide scholarships specifically for minority students	11	8	.21
13. provide college work study opportunities for minority students	14	17	.85
14. provide teaching or research assistantships for minority students	2	6	.17
15. provide personal counseling	22	23	.28
16. provide academic counseling	23	28	.85
17. provide career counseling	19	23	.95
18. provide computer assisted instruction	10	8	.34
19. use learning groups	9	18	.06
20. discuss racism in the curriculum	10	14	.47
21. discuss cultural differences in the curriculum	20	22	.90
22. teach to different cognitive styles	14	20	.54
23. examine racial bias in the curriculum	6	8	.65
24. establish mentors for minority students	15	13	.32
25. flexible retention policies	11	18	.14
26. involve students' family	0	4	.05\$
27. provide child care	2	3	.77

28. monitor student GPAs	22	28	.50
29. follow up on students who drop out	3	9	.09
30. evaluate student assessment of support programs	12	7	.10
31. have re-examination policies	17	24	.21

^aSchools with >5% minority graduates

^bSchools with <5% minority graduates

^cHealth Occupations Students of America

*Significant at $p \leq .05$ for schools with >5% minority graduates

§Significant at $p \leq .05$ for schools with >5% minority graduates

FIGURE 1

Breakdown of Minority Applicants in Effort vs. No Effort Programs

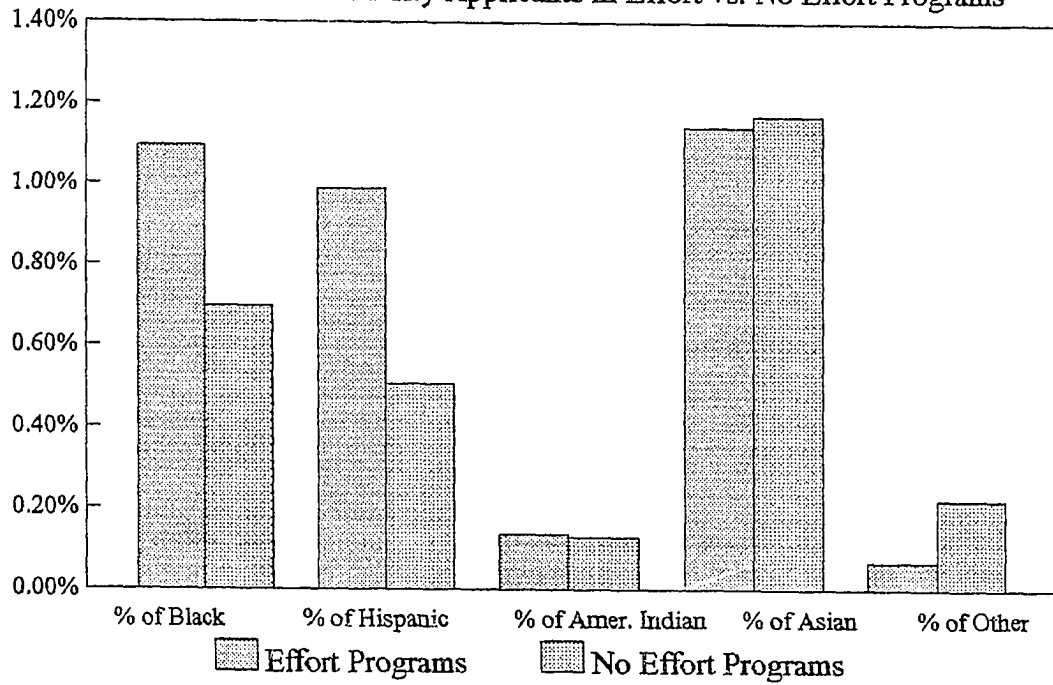


FIGURE 2

Breakdown of Minority Enrollees in Effort vs. No Effort Programs

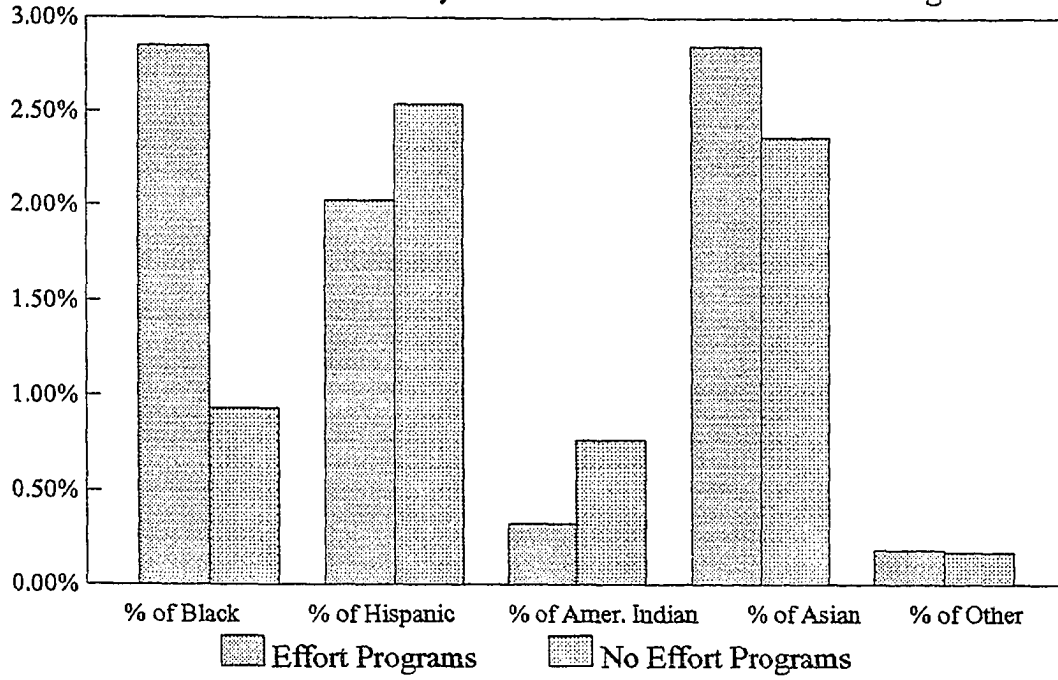


FIGURE 3

Breakdown of Minority Graduates in Effort vs. No Effort Programs

