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Sex-Role Stereotyping as a Factor Influencing Counselors' Advising of Black Male Students to Investigate Selected Allied Health Professions

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SEX-ROLE STEREOTYPING
AS A FACTOR INFLUENCING COUNSELORS'
ADVISING OF BLACK MALE STUDENTS TO INVESTIGATE
SELECTED ALLIED HEALTH PROFESSIONS

by

Patricia Wade Walker

A Dissertation Submitted to the Faculty of the Graduate School
of Loyola University of Chicago in Partial Fulfillment
of the Requirements for the Degree of
Doctor of Education

May

1983

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ABSTRACT

The problem of the influence of counselor's sex-role stereotyping on the advising of high school students was the focus of this study. This investigation was narrowed to counselors' use of sex-role stereotyping in advising high school students to investigate allied health careers. The researcher was specifically interested in the advising of black males.

The researcher assumed that counselors' perception of the percentage of males working in selected allied health professions would influence both their perception of the level of ability required to enter the field and their advice to male (particularly minority) students with an interest in health careers. The researcher also assumed that the sex and ethnic background of the student also influences student advising directly and indirectly through their impact upon the counselors' perception of the students' academic ability. Five research hypotheses describing the relationships between the variables in this model were considered relevant for testing.

A correlational survey research design was used to test the hypotheses. The survey was mailed to 360 Illinois high school counselors. The counselors were selected from high school mailing lists of the American Personnel and Guidance Association and the Illinois Association of College Admissions Counselors.

The questionnaire developed for the survey consisted of three parts. The first part obtained counselor ratings of the percentage of males and females working in each of nine health professions and their perception of the level of ability needed to enter each profession. Part II of the questionnaire consisted of three student profiles, a rating scale for ability, and a list of the nine professions from Part I. The subjects were asked to review the profiles, rate their ability, and make career recommendations for each one. Part III of the questionnaire collected demographic information on the subjects, their schools, and their students.

Of the five research hypotheses tested, one was partially supported and four were unsupported. The hypotheses were tested using multiple regression analysis, Pearson's coefficient of correlation, t-tests, two-way analysis of variance, and chi-square.

ACKNOWLEDGMENTS

I would like to thank the members of my committee--Dr. Anne M. Juhasz, Chairperson, Dr. Thomas W. Beckham, Dr. Jack Kavanagh, and Dr. Terry Williams for their guidance, support, and criticism. I should also like to thank Mr. John D. Vidmar for his assistance in the statistical analysis of the data and Ms. Ninfa Sarabia for her excellent secretarial skills. I should like to thank my family without whose support and patience I would not have been able to complete my graduate studies. Finally, I should like to thank the American Society of Allied Health Professions and the Kellogg Foundation whose financial support during the later stages of this project facilitated its completion.

LIFE

The author, Patricia Wade Walker, was born May 28, 1952 in Chicago, Illinois.

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She has published, "The Need for Support Services for Minority Pre-Allied Health Majors," in the Journal of Allied Health, Winter, 1982.

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THE PROBLEM

Quality health-care is a serious issue among minorities in this country. This is due in part to the shortage of health professionals in minority communities. The most obvious solution would seem to be the recruitment of more minority health professionals into these areas however, this effort has been hampered due to the small numbers of minorities currently working in the health-care field. There have been many reasons for this limited level of minority participation in allied health and other health professions and there is a wide-spread concern to identify and eliminate as many of these factors as possible.

Allied Health Professions

The allied health field is a large and expanding field. In 1978, it was estimated that there were 5 million persons employed in the health field, with 66% of them or more than 3.5 million workers classified as "allied health workers" in the broadest sense of the term. Of these, approximately 1.25 million are considered "allied health personnel", as illustrated in Table 1. Since 1966, this group has grown from 442,000 to 1,026,000 (an increase of 132%), compared to a 76% increase in the total health work force (DHEW, 1979b). This number includes all workers exclusive of: medicine, osteopathic medicine, dentistry, veterinary medicine, optometry, podiatry, and pharmacy (referred to as MODVOPP professions) and nursing.

The need for large increases in allied health personnel has been due in part to technological advances in treating patients which resulted in a need for more specialized personnel. Federal funding under

TABLE 1

Estimated Numbers of Health Workers Employed in the United States
for Selected Years, 1966-1978

Health Workers	1966	1970	1974	1978
All Health Workers.....	3,072,000	3,820,000	4,700,000	5,412,000
Health Practitioners ¹	1,190,000	1,340,000	1,550,000	1,830,000
Allied Health Personnel.....	442,000	658,000	828,000	1,026,000
Dental Hygienists.....	12,000	15,000	23,000	35,000
Dental Assistants.....	92,000	112,000	130,000	149,000
Dental Laboratory Technicians.....	26,000	31,000	39,000	47,000
Dietitians.....	12,000	17,000	21,000	28,000
Dietetic Technicians.....	1,000	2,000	3,000	4,000
Medical Records Administrators.....	10,000	10,000	12,000	12,000
Medical Records..... Technicians.....	32,000	42,000	51,000	68,000
Laboratory Workers.....	100,000	135,000	180,000	240,000
Medical Technologists.....	(38,000)	(57,000)	(90,000)	(125,000)
Cytotechnologists.....	(2,000)	(3,000)	(5,000)	(7,000)
Medical Laboratory Technicians.....	(-)	(1,000)	(7,000)	(12,000)
Other Laboratory Workers.....	(60,000)	(74,000)	(78,000)	(96,000)
Occupational Therapists.....	5,000	6,000	10,000	15,000
Physical Therapists.....	11,000	15,000	18,000	30,000
Primary Care Physician's Assistants.....	-	2,000	4,000	6,000
Radiologic Service Workers.....	75,000	87,000	95,000	104,000
Respiratory Therapy Workers.....	15,000	30,000	40,000	52,000
Speech Pathologist/ Audiologists..... ²	11,000	19,000	27,000	36,000
Other Allied Health.....	40,000	135,000	175,000	200,000
Other Health Personnel.....	1,440,000	1,822,000	2,322,000	2,556,000
Emergency Medical Technicians.....	-	6,000	260,000	269,000
Licensed Practical Nurses.....	306,000	400,000	468,000	504,000
Nurses Aides/ Orderlies.....	600,000	870,000	970,000	1,070,000
Psychologists (Clinical).....	4,000	6,000	9,000	13,000
Other ³	530,000	540,000	615,000	700,000

¹ Includes dentists, registered nurses, optometrists, pharmacists, physicians, podiatrists and veterinarians.

² Includes such categories as dietetic assistant, genetic assistant, operating room technician, ophthalmic medical assistant, optometric assistant and technician, orthoptic and prosthetic technologist, pharmacy assistant, occupational and physical therapy assistants, physician assistant, podiatric assistant, vocational rehabilitation counselor, other rehabilitation services, and other social and mental health services.

³ Includes such categories as health services administrators, chiropractors, environmental workers, epidemiologists, health educators, medical secretaries, midwives, nutritionists, health statisticians, and others.

the 1966 Allied Health Professions Personnel Training Act, which came about due to federal concern over predictions of massive shortages of allied health professionals assisted colleges in developing programs to alleviate these shortages (Kinsinger, 1980). As a result of these advances and increased funding, large shortages of allied health personnel that were apparent in the last decade, have been alleviated and eliminated for some occupations. Local or transitory shortages of allied health personnel continue, even in occupations in which the overall national supply appears to be adequate. These are a reflection of local labor market conditions, sometimes aggravated by geographic maldistribution of personnel (DHEW, 1979c). The federal government has therefore shifted its priorities away from the production of more allied health manpower toward solving the problems of geographical and professional maldistribution of manpower, toward cost containment, and coordination of resources through regulation and incentive programs (Hogness, 1980).

Another government priority is the continued improvement of minority representation in all health professions including allied health (DHEW, 1979c). While data pertaining to the numbers of minority allied health practitioners relative to their numbers in the total population are not available at this time, urban manpower shortage areas have high minority populations and contain half of the shortage area population in this nation. These areas are frequently located in the midst of abundant resources but their populations rely heavily on clinics and emergency rooms for routine services. Designated manpower shortage areas include: Central Harlem, Watts, the Southside of

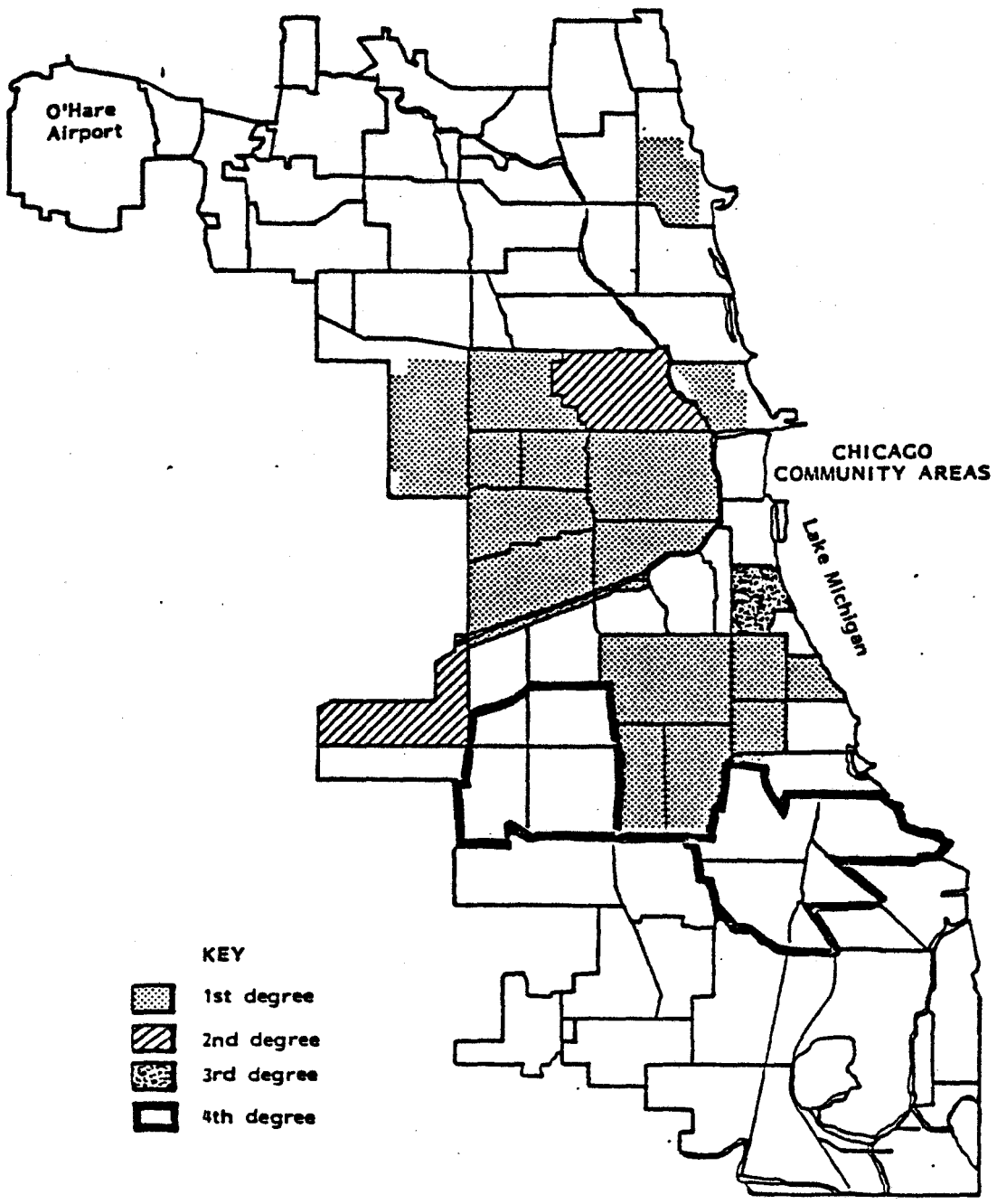
Atlanta, and the Westside and the Southside of Chicago (DHEW, 1980). Native Americans, Spanish speaking, and medically indigent population groups have also been identified under the special provisions for the designation of population groups that suffer from manpower shortages within areas where no overall shortage of manpower exists. A map of the City of Chicago showing the extensive health manpower shortage areas can be seen in Figure 1. The following discussion identifies some of the factors that are of major concern to the urban communities and that have been instrumental in the establishment of programs to increase minority student enrollment into health professions programs.

The Quality of Health Among Minorities in the U.S.

The differences in the quality of health that exist between Whites and ethnic/racial minorities in this country can be illustrated by the consideration of a few of the statistics that are available from the department of Health and Human Services. While the number of live births is greater for the ethnic minorities than it is for Whites in this country, the mortality rate for minorities also exceeds that of Whites. Nonwhites have experienced the greatest improvement in mortality since 1970 but, their mortality rate still exceeds that of Whites in 8 out of 10 leading causes of death (Table 2).

Life expectancy at birth was an average of 73.2 years for Americans in 1977. While the expectancy of both white and nonwhite females exceeds that of white and nonwhite males, there is still a difference seen between the races. The difference between white and nonwhite males decreased substantially since 1950 (eight years) but, there was still a

FIGURE 1. HMSA-DESIGNATED COMMUNITY AREAS with DEGREE of SHORTAGE INDICATED



Source: City of Chicago, Health Systems Agency

TABLE 2

Age-Adjusted Death Rates for 10 Leading Causes of Death by Color, U.S. 1973-1975

1975 Rank	Year	Total Rate	Percent Change	White Rate	Percent Change	All Others Rate	Percent Change	Differential* 1975
1. Disease of heart (340-348, 402, 404, 410-429)	73	244.4		239.9		279.8		
	74	232.7		228.8		262.8		
	75	220.5	-9.8	217.2	-9.5	245.2	-12.4	1.13
2. Malignant Neoplasm (140-209)	73	130.7		127.7		156.4		
	74	131.8		129.0		156.6		
	75	130.9	+2	128.1	+3	155.0	-9	1.21
3. Cerebrovascular diseases (140-438)	73	63.7		59.6		99.7		
	74	59.9		56.4		90.9		
	75	54.5	-14.4	51.3	-13.9	82.0	-17.8	1.60
4. Accidents (E800-E949)	73	51.7		49.5		67.5		
	74	46.0		44.3		58.5		
	75	44.8	-13.3	43.1	-12.9	56.9	-15.7	1.32
5. Influenza and Pneumonia (470-474, 480, 486)	73	20.1		18.5		31.4		
	74	16.9		15.7		25.4		
	75	16.6	-17.4	15.6	-15.7	23.9	-23.9	1.53
6. Diabetes Mellitus (250)	73	13.2		11.8		25.3		
	74	12.5		11.4		23.4		
	75	11.6	-12.1	10.4	-11.9	21.7	-14.2	2.09
7. Cirrhosis of Liver	73	15.0		13.7		25.3		
	74	14.8		13.4		25.0		
	75	13.8	-8.0	12.6	-8.0	23.1	-8.7	1.83
8. Arteriosclerosis (440)	73	8.0		8.0		7.8		
	74	7.6		7.6		7.3		
	75	6.6	-17.5	6.6	-17.5	6.1	-21.8	.92
9. Suicide (E950-E954)	73	12.0		12.6		7.2 ¹		
	74	12.2		12.8		7.2		
	75	12.6	+5.0	13.3	+5.6	7.5	+4.2	.56
10. Certain Causes of Mortality in Early Infancy (760-769.2, 769.4-772, 774, 778)	73	14.5		12.1		31.0		
	74	13.6		11.3		29.0		
	75	12.5	-13.8	10.2	-15.7	27.8	-10.3	2.73

*(Ratios All Other to White)

Sources: Depts. of Health, Education, and Welfare, Monthly Vital Statistics Report, Final Mortality Statistics, 1973, Vol. 23, No. 11, 1974, Vol. 24, No. 11, 1975, Vol. 25, No. 11

five year difference in 1977 (Figure 2).

Infant mortality rate serves as a barometer of the general environmental conditions that impact upon the health of all age groups in a population. White and black infants accounted for 97% of all births in 1977. While the infant mortality rate for both groups has been declining at equal rates for the past ten years, the black infant mortality rate historically has been much higher than the white rate. The infant mortality rate for black infants remained 90% higher than that for white infants, with the rate for Native Americans falling between the two (Figure 3).

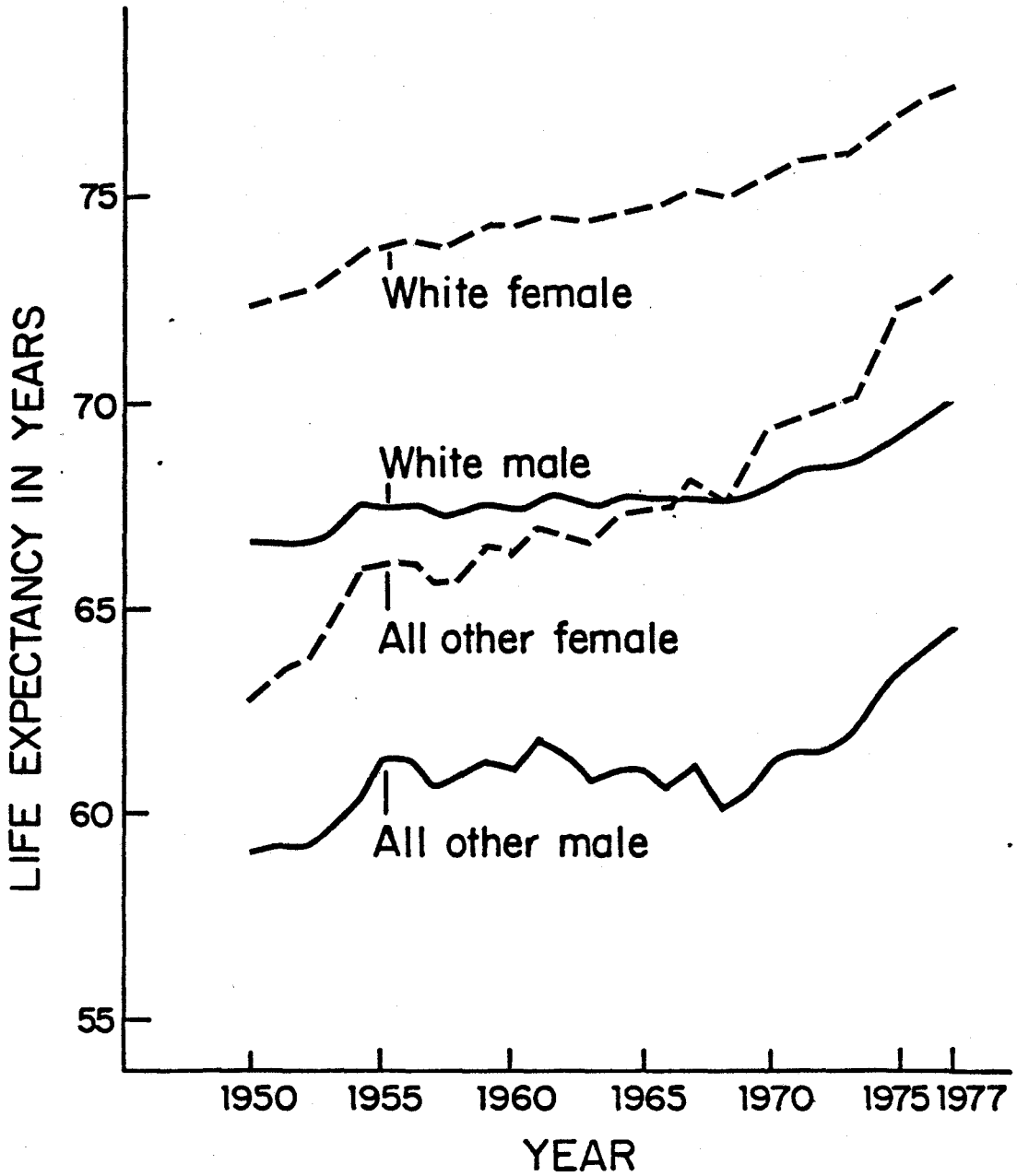
There is also a large difference between ethnic groups in the assessment of their health. A larger percentage of Blacks and Hispanics reported fair or poor health for 1976-1977 than did Whites. The percentage of people reporting fair to poor health increased with age for all three groups, but so did the differential between them (Figure 4) (DHEW, 1979a).

Manpower Shortages

There is a negative differential in the quality of health for minorities when compared to Whites in this country. This situation can be explained in part by the fact that the minority population has fewer health professionals and health-care facilities serving its community. Many studies have been done on the numbers and distribution of black physicians, since the physician is the primary member of the health-care team. These studies have shown that there were fewer black physicians per population of Blacks in 1972 than there were in 1942, even though

FIGURE 2

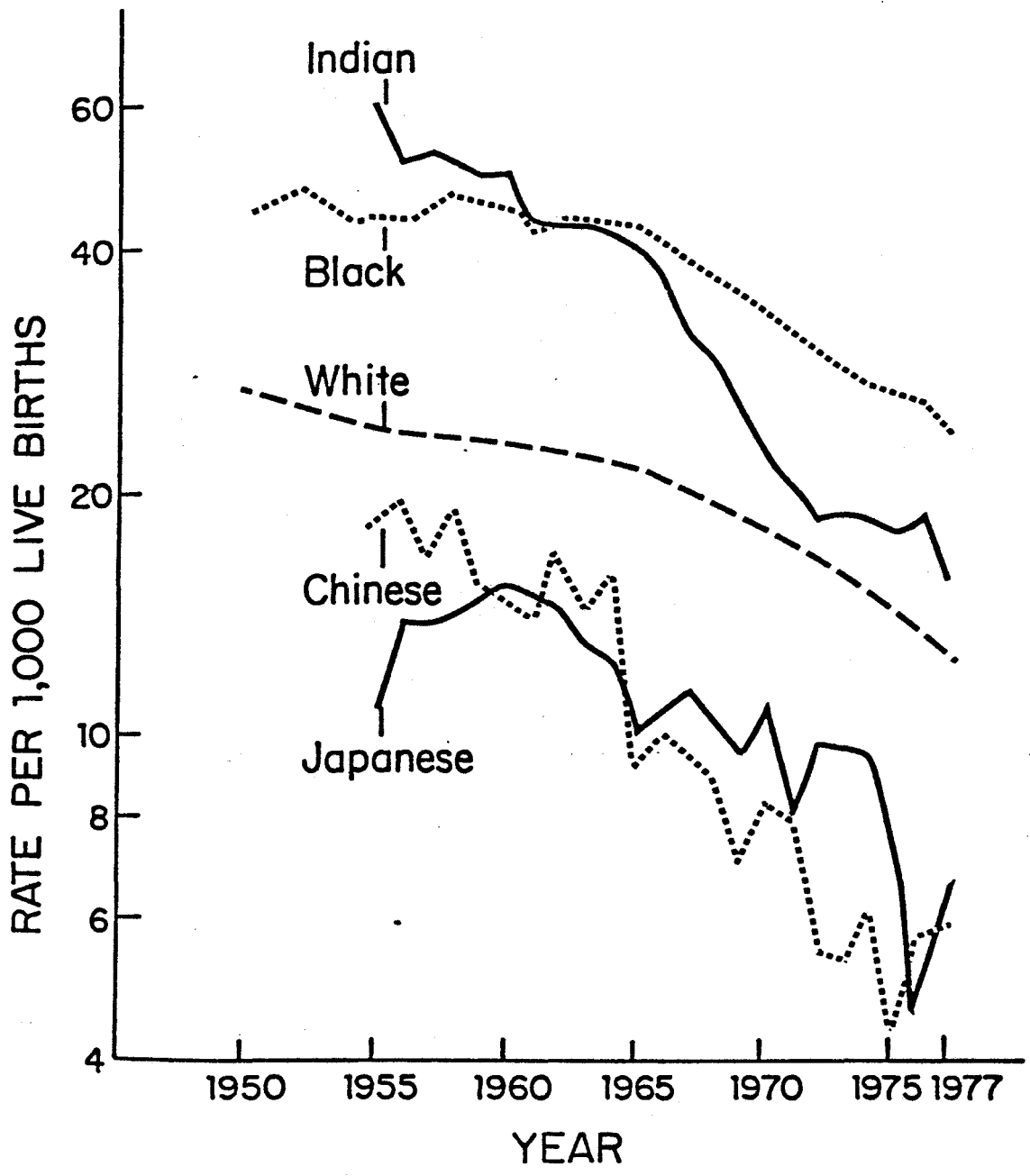
Life expectancy at birth, by color and sex: 1950-77



SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS

FIGURE 3

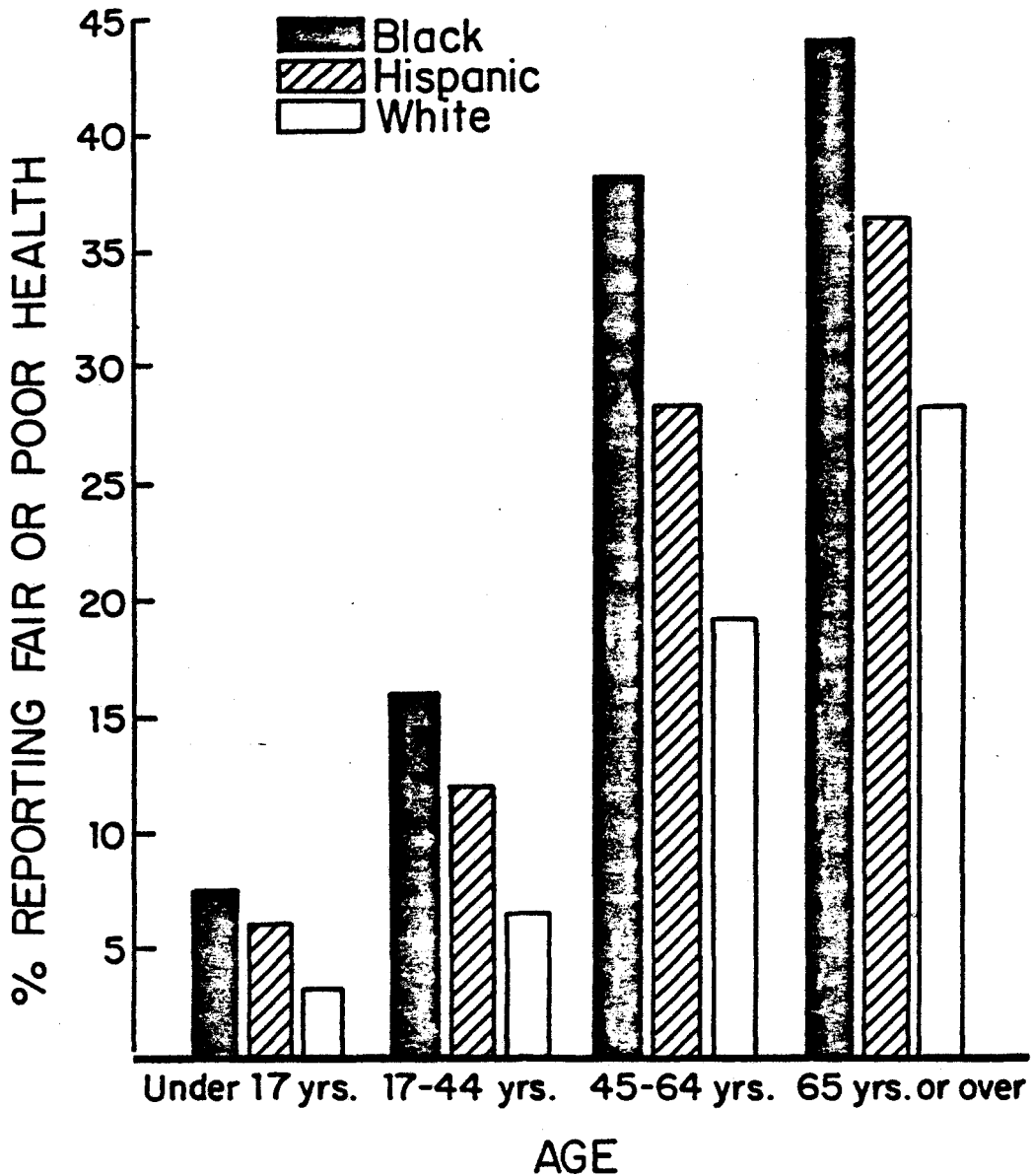
Infant mortality rates, by race: 1950-77



SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS

FIGURE 4

Percent of population reporting fair or poor health, by ethnic group and age: 1976-77



SOURCE: NATIONAL CENTER FOR HEALTH STATISTICS

absolute numbers had increased. There is also a maldistribution of black physicians resulting in shortages in those areas where they may be needed most, such as low-income urban areas. This shortage of manpower is not limited to physicians. Many urban health-care facilities serving predominately minority and other economically disadvantaged groups have a difficult time attracting health personnel of all types. Simply increasing the numbers of black health professionals will not necessarily mean that there will be more black professionals serving the black community. Factors affecting the migration of black physicians, for example, are income of clients and the physician's perception of discrimination. A black physician tends to establish practice in areas where the community can afford to pay for medical services and in areas where he is least likely to be discriminated against by the local medical society and the non-black population. Increasing the number of black health professionals will, however, increase health-care services to the nation as a whole and increase the options available to the black population by providing more alternative purveyors of medical services (mid-wives, dietitians, therapists, social workers, etc.) (Thompson, 1974).

The Black/White Economic Gap

Another situation that exists in this country is the widening of the economic gap between Blacks and Whites. In 1975, the unemployment rate for Blacks was 1.7 times higher than the white unemployment rate. By 1978, the rate for Blacks had increased to 2.3 times higher than that of Whites. This widening of the unemployment gap has occurred among all subgroups of workers (Hill, 1978). The health-care industry, on the

other hand, has become a booming industry. New fields and new specializations of old fields due to technological advances have opened new opportunities for interested persons. In 1976, the annual, personal health-care expenditures reached \$552 per person in the U.S. This was a 30% increase over 1974 (DHEW, 1979a). This would suggest that the health-care field is a promising avenue for those seeking to enter a professional field. By attempting to increase the number of minorities entering the health care field, both problems of manpower shortages and unemployment among minorities are addressed.

Freshmen Interested in Allied Health

According to the Department of Health, Education and Welfare in a publication entitled: Freshmen Interested in Nursing and Allied Health Professions (1977), the average college freshman who had indicated a career choice of dietitian, health technician or therapist,¹ in 1974, was an unmarried 18-year old white woman. The socioeconomic background of the women varied. Aspiring dietitians and therapists came from upper-socioeconomic backgrounds, and aspiring technicians came from lower-socioeconomic backgrounds. Ninety-eight percent of the freshmen who indicated home economics/ dietetics as a career choice were women; 5% represented black women. Men represented 2% of aspiring dietitians - 1.1% were non-black, 0.9% were black.

¹Many health professions were grouped together under the broad headings of health technician and therapists.

Minority Enrollment in Allied Health Educational Programs

Just as minorities are under-represented in the health-care field, they are under-represented in health professions education programs. The Association of American Medical Colleges reported in 1976 that it would be unable to reach its 1976-77 goal of 12% minority enrollment in U.S. medical colleges and would only enroll 9% minority students for that academic year.

The 1978 Supreme Court decision in the Bakke case did not help matters.² Medical school admissions committees became concerned that their special admissions policies for minorities might be considered discriminatory. The problem continues today with small increases in the number of minority students who apply, enroll in, and graduate from health professions education programs. For example, in 1975, minorities represented 14.2% of students enrolled in bachelor's degree/ certificate allied health programs. Broken down, this represented 8.5% Blacks, 3.0% Hispanics, 0.7% Native Americans, and 2% others (including Asians).

More recent figures from a report from the Illinois Board of Higher Education entitled, "Health Services Education Grant Act: A Report on Fiscal Years 1970-1982", put minority enrollment (1981-1982) in Allied Health Programs at 18.2%. This figure is broken down into 11.7% Blacks, 0.29% Native Americans, 3.4% Asians, 2.2% Hispanics and

²The U.S. Supreme Court in the case of the Regents of the University of California vs. Allan Bakke, June 28, 1978, upheld the decision of the California Supreme Court that the special admissions program of the University of California-Davis Medical School violated the Equal Protection clause of the 14th Amendment (of the U.S. Constitution) and ordered Bakke's admission to the Medical School.

0.7% others.

Although Blacks in Illinois have made a small increase in enrollment compared to the 1975 national figures, the 11.7% figure is still low considering the Black population in Illinois is 14.5%. Hispanics in Illinois have a low enrollment (2.2%) compared to the 1975 national figure (3.0%). Hispanics represent 5.6% of the population in Illinois. (Illinois Board of Higher Education, 1982).

Although there were no national or state figures found on degrees conferred to minorities in the allied health field, the University of Illinois, College of Associated Health Professions can be used as an example. From 1971 to 1980, there have been 59 graduates from ethnic groups under-represented in the health-care field: 46 Blacks, 11 Hispanics, and 2 Native Americans. This represents approximately 5% of total graduates during this time period. Only 4 of the 59 minority graduates were males. Two were Black and 2 were Hispanic. Therefore, minority males represent only .3% of total graduates during this period.

Barriers Facing Minorities Interested in Allied Health Professions

There has been an increase in the number of career awareness programs to identify a greater number of qualified Blacks and other under-represented minorities who are interested in entering health careers (Roberts & Plunkett, 1974). These programs are supportive of a developmental approach to career education and are aimed at compensating for deficiencies that are felt to exist among Blacks and other "disadvantaged" groups. The objective of these programs is to increase the pool of qualified minority students by compensating for such factors as:

1. Inadequate academic preparation in math, science, English, and other communication skills.
2. Inadequate knowledge of career opportunities in the health professions.
3. Inadequate opportunities to explore careers in health.
4. Lack of exposure to minority role models in the health field.
5. Inadequate counseling and too few counselors in psychologically supportive roles.

Even with programs that address the issues of career awareness, career orientation, exploration, and preparation, there are other barriers such as (Roberts & Plunkett, 1974):

1. The cost of financing a medical education (most allied health professions programs are at the baccalaureate level or below, therefore, the expense is usually no more than that of financing any other four year college education).
2. Admissions policies that are biased toward middle and upper class students and their particular values.
3. The scarcity of self-paced medical education programs that allow for type of student diversity that is implied by the admission of more ethnic minorities and other "disadvantaged" students.

In spite of these barriers, small numbers of minorities apply to, are being admitted to, and are graduating from health professions

education programs, including allied health programs. However, the need for continued recruitment exists.

The American Association of Medical Colleges in the June 1978 report of its task force on minority student opportunities in medicine lists 15 recommendations for AAMC and medical schools for increasing the minority applicant pool for medical school and enlarging the number of qualified minority students admitted through improvement of the selection process. The federal and state governments have also been involved in minority recruitment through their funding of special minority programs aimed at recruiting and retaining minority students for colleges of medicine. What these combined efforts have meant is that the minority student has become a more sought after commodity than his/her white counterpart (AAMC Task Force Report, 1978). This has made the recruitment of minorities into fields such as allied health and nursing more difficult due to competition with medical colleges. In addition, the majority of students and workers in the allied health professions are women, regardless of their ethnic background. This would imply that there are additional barriers for men, particularly minority men, in these fields. This additional barrier may be in the form of sex-role stereotyping among both counselors and male students.

Sex-Role Stereotyping in High School Counselors

Studies have shown that counselors have exhibited sex-role stereotyping by discouraging males from exploring careers considered to be nontraditional (Mercado & Atkinson, 1982; Donahue, 1976). Counselors have also been shown to have higher predictions for the occupational

prestige levels for male than for female students (Persons, 1972). These findings suggest that counselors may encourage male students of high or average ability to pursue traditional male occupations having high prestige levels and reserve recommendations to explore allied health professions for women and males of lower ability. While relatives are more often cited by students as being the primary influence on career choices, research has shown that males are more likely to be influenced by counselors than are females (Weishaar, et. al., 1981). Studies have also shown that male students themselves, exhibit sex-role stereotyping by rating occupations as less prestigious and less desirable as the ratio of females in the field increases (Heilman, 1979; Touhey, 1974). Sex-role stereotyping can therefore pose an additional barrier to the recruitment of male minorities for professions having high female participation.

Statement of the Problem

Assuming that sex role stereotyping exists among high school counselors, (Schlossberg & Pietrofesa, 1973; Thomas & Stewart, 1971; Donahue, 1976; Mercado & Atkinson, 1982; Fitzgerald, 1980) the problem to be investigated will be to determine the extent to which counselor's sex; counselor's perception of ability-level needed to enter the profession; counselor's perception of the male/ female ratio of workers in the profession; and student ability, sex and ethnic background influence the career advisement of students (in simulated profiles) who express an interest in health careers.

A questionnaire will be used to determine counselors' ratings of a) ability-level and male/female ratio of selected health careers, b)

student profiles representing different ability levels, ethnic backgrounds, and sex, and c) certain professions as possible career choices for the students in the profiles. The questionnaire will be sent to a random sample of high school counselors in the State of Illinois.

The following hypotheses will be tested in this study:

- Ho. There is no significant relationship between counselors' perceptions of percentage of males in selected health professions and their perception of the ability level needed to enter the field.
- H1. As counselors' perceptions of the percentage of males in selected health professions increases, their perception of the ability level needed to enter the field will also increase.
- Ho. There is no significant relationship between counselors' perceptions of the percentage of males in selected health professions and the number of times the professions are selected for male students.
- H2. As counselors' perceptions of the percentage of males in selected health professions increases, there will be an increase in the number of times the professions are selected for male students.
- Ho. There is no significant relationship between the ability-level of male students and the frequency with which counselors' select fields they perceive to be female dominated for male students.

- H3. Counselors will discourage more often males of high-ability from pursuing fields they perceive to be female dominated more frequently than they will discourage low-ability males from pursuing fields perceived to be female dominated.
- Ho. There is no significant relationship between the ethnic background of male students and the frequency with which counselors select fields they perceive to be female dominated for male students.
- H4. Counselors will discourage minority males from pursuing fields perceived to be female dominated, more often than they discourage majority males from this pursuit.
- Ho. There is no significant relationship between counselors' perception of students' ability level and students' sex and ethnic background.
- H5. Counselors' perception of students' ability level will be influenced by sex and ethnic background of the student.

Importance of the Study

The rationale for a study concerning barriers that may face minority men entering the allied health field is justified by the maldistribution of allied health professionals in urban-underserved areas such as the Chicago Metropolitan area. This shortage of qualified health professionals justifies the increase in recruitment efforts that have been seen in the last few years to attract more minorities into the health-care field. The emphasis has been placed on recruiting more minorities because the urban-underserved areas have been typically populated by ethnic minorities and other "disadvantaged" groups. It is

assumed that minorities are more likely to return to their communities once they have become health professionals and therefore ease the problems caused by manpower shortages in these areas (American Association of Medical Colleges, 1978). The minority groups most heavily recruited are: Blacks, Hispanics, and Native Americans. This is because they represent the predominant population of urban-underserved areas and also because they are the most under-represented minority groups in allied health professions education programs and in the allied health field. Asians and Pacific Islanders, although considered to be ethnic minorities in the U.S. are not under-represented in the health-care field, and therefore, are not included in the target group of minority recruitment programs (Dept. of Health and Human Services, 1980).

Unlike some other health professions, the allied health professions are dominated by women; therefore, when the word "minorities" is used in this field, men can be included as well as ethnic minorities. Any efforts to attract more persons into the field, and to tap new sources of potential applicants to allied health programs, will logically include an attempt to attract more men in general and minority men in particular. In addition to the academic, financial and social barriers that affect minorities pursuing health careers, sex role stereotyping may be an additional barrier which keeps minority males from entering allied health professions. Society has perceived allied-health professions to be a woman's field similar to nursing (Heilman, 1979; Touhey, 1974). As such, it is likely that men will avoid pursuing careers in allied health in preference for fields

perceived to be more masculine such as medicine (Heilman, 1979; Touhey, 1974). At best, they may use allied health as a stepping-stone to medicine or as an alternative if they are not accepted into medical school. Due to its image as a woman's field, allied health professions suffer from limitations in economic rewards, opportunities for career advancement, and lack of prestige. Therefore, minority males who have at least average ability and do not want to spend an additional 3 to 4 years past the baccalaureate level training for a career in dentistry or medicine, may be discouraged from entering allied health and may be encouraged to seek a career in some other health field or non-health field. Minority males of average ability who do not mind spending 3-to-4 years in school past the baccalaureate level may be encouraged to by-pass allied health and apply to dentistry or medicine where there is the prospect of greater rewards after entry into the profession. This becomes particularly important when considered in light of a recent study that suggests that male role models are important influences for both males and females and students are more sure of their choice when their model is in a field closely related to their choice (Weishaar, 1981).

The health career awareness programs that specifically focus on Blacks and other minorities at the high school and college levels do not currently address the potential problem of sex-role stereotyping as a barrier for minority males pursuing female-dominated professions. While the importance of role models is recognized, these programs are presently concerned with the ethnic background of the role models involved, and not necessarily concerned with their sex. This may not be important

when the student is interested in a field that is dominated by the same sex, however, it may be important if the student is considering a nontraditional field. In health career awareness programs for students interested in allied health fields, the sex of the model may be more important than his/her ethnic background when it comes to recruiting males.

Summary

Minority participation in allied health and other health related professions continues to be limited at both the educational and the professional level. The reversal of this trend has been a priority among health professionals, educators, and community leaders due to the maldistribution of health-care professionals in the minority communities and the low-quality of health-care in these areas.

Many factors have been identified as barriers to minorities who wish to enter the health-care field. These include inadequate academic preparation and finances, and inadequate psychosocial support systems and racial prejudice. An additional barrier for male minorities who express an interest in allied health professions may be sex-role stereotyping since most allied health professions have a predominance of female workers. While ethnic background has been a salient cue for developers of special career awareness and enrichment programs for minorities interested in health careers, sex-role stereotypes have not.

As a greater emphasis is placed on the recognition of sex-role stereotyping in counseling, its effect on minority students pursuing nontraditional careers must also be recognized. This recognition

however, cannot be limited to female students alone. Male minorities are almost non-existent in some allied health professions and the minority community needs additional workers in these areas regardless of their sex.

In the same vein, counselors working in career awareness, summer enrichment, and other programs aimed at increasing the numbers of minorities in allied health and other health professions, must incorporate the research findings of studies on sex-role stereotyping in counseling by demonstrating a concern for increasing the numbers of male minorities in female-dominated health professions as well as increasing the number of males and females in traditionally male-dominated health professions such as medicine.

This study will address the question of whether or not high school counselors are influenced by sex-role stereotyping in advising students who are interested in health careers. This study will specifically test the extent to which perceptions of certain characteristics of allied health professions influences their career choices when judging simulated student profiles presenting varying academic abilities, and demographic backgrounds. The study will be conducted through a questionnaire to be mailed to a random sample of high school counselors in the State of Illinois. The following chapters will present a review of the related literature, the methodology used, an analysis of the data, conclusions and suggestions for further research.

REVIEW OF THE RELATED LITERATURE

Following is a review of literature which is divided into three sections: trends in the Black labor force, trends in the allied health field, and studies on occupational sex-role stereotyping. Most of the data deal with blacks since they have historically been the dominant minority population in the U.S. Where the literature and/or data refer to other groups as well, the term "minority" will be used instead of Blacks.

The Black Labor Force

Long-term Trends in the Black Labor Force

Historically, from 1890 to 1930, there has been a higher proportion of Blacks than Whites in the labor force, (Bureau of the Census, 1979). However, from 1940 to 1950, participation rates of Blacks and Whites had begun to converge and the labor force rates were basically the same by 1970.

The difference in the participation rate of Blacks and Whites in the labor force prior to 1940 was because black women were more likely to be employed than white women. Since the 1940's however, white women have been entering the labor force at a greater rate than any other group. By 1978 the differences between the participation rates of black women and white women disappeared and by 1980, the rate of participation of white women (47.8%) exceeded that of black women (46.4%).

Black men at each age and educational level have experienced declines in labor force participation; but the declines have been particularly pronounced among teenagers, those 55 years of age and

older, and those who are not high school graduates.

In 1980, 59.3% of black and other minority men were employed, compared to 74.1% in 1960. The unemployment rate for minority males (in all age groups) was 12% in 1980, approximately twice that for all males in the labor force. The unemployment rate for minority male teenagers was 31.5% in 1979 while it was 13.9% for white teenagers.

The percentage of black women in the labor force, except those 65 and over, has remained virtually unchanged or has increased since 1948. In 1960, 43.6% black and other minority women were employed in the labor force and that percentage rose slightly to 46.4% in 1980 (U.S. Bureau of Labor Statistics, 1980).

A Factor in the Decline in Black Male Labor Force Participation

Anthropologist Marvin Harris (1981) attributes the increasing unemployment of black males to the change in the sexual composition of the U.S. labor force over the past two decades. White women began to move into the labor market as it shifted from one of goods production to one of service production. In fact this shift was predicated, according to Harris, upon the mass influx of white women into the service economy.

These new service jobs were characterized by being low-level, information-processing (secretary, file clerk, etc.) and low-level people-processing (nurses, sales-clerks, etc.). They were traditionally female dominated, primarily part-time, had a high turnover rate, were temporary or dead-end, and poorly paid.

Employers found women to be ideal for these positions because their socialization process, allowed them to take orders from men, be

non-aggressive, and accept temporary and part-time jobs that would allow them time to take care of their families. Also, women would not threaten the livelihood of male workers.

At the same time, blacks were migrating in unprecedented numbers from farms into cities in search of jobs. The employment of black men in farm occupations declined from 41% in 1940 to 4% in 1970. The proportion of black men in operative jobs rose from 13% to 26% during the same time period. Although increases of black men employed in white-collar jobs were seen, the proportion in managerial and professional jobs remained small at 3% and 5% respectively in 1970 (Bureau of Census, 1979).

Meanwhile, between 1940 to 1970, black women moved out of the traditional household service jobs and made significant gains in the new service economy in positions such as clerical and sales (except for managerial positions). The proportion of black women working in clerical and sales jobs rose from 4% in 1940 to 10% in 1970 and those employed as household workers declined from 60% in 1940 to 15% in 1970 (Bureau of the Census, 1979).

Black males were not utilized in the new information and people-processing economy because these jobs were tailor-made for the white housewives who were forced to enter the labor market due to the demands of the worsening economic situation in the U.S. Black women who were already in the labor market in a large proportion, undoubtedly benefited from these new jobs even if it was to a lesser extent than white women. According to Harris, white women were preferred over black males, in particular, because more of them had high school and college degrees and

fewer objections to working in a subordinate position to white males.

The increase in the participation of white women in the labor market is evidenced by U.S. Bureau of Labor Statistics (1980) that show a 12% increase in the participation of women in the labor force (only 2.8% attributed to increases in the minority women labor force). At the same time, this can be compared to a 15% decrease in the participation of minority males in the labor force (while the proportion of all males decreased by only 4.5%).

The argument has been made that black men have not been in competition with white women for jobs since the kind of jobs taken by white women have been for the most part jobs that inner-city black men would not or could not have taken anyway. Harris (1981) counters this argument by saying it may be true for secretarial and typing positions, but it is not true of millions of jobs in public service administration, retail trades, and positions as clerks, cashiers, tellers, and receptionists, which do not need extensive training or education and are not necessarily female stereotyped.

Consequences of Unemployment for Minority Males

The devastating consequences of inopportunities for minority males to have occupational success are understandable when one considers the importance of career success for males. Skovholt (1978) describes young minority males as suffering from persistent feelings of inadequacy and premature occupational foreclosure. He describes a correlation between the lack of viable routes to career success, the stereotypic male translation of hopelessness and despair into rage and violence and the

end result of murder as the leading cause of death to non-white young males. Harris (1981), also sees a direct correlation between the unemployment rate of young blacks, which he estimates to be as high as 86% in some urban areas, and the accompanying high crime rate in these areas.

Trends in Allied Health Manpower

The description of manpower in the health-care field in general, provided by Ginzberg in 1969, has not lost its accuracy in the ensuing 12 years. He described a tremendous expansion of "para medical" manpower of which physicians are a small proportion of the total. The expansion came about through increasing specialization and the use of less expensive personnel to do the work.

There are two major revolutions taking place, one of blacks and the other of women seeking places in the health-care field. In 1979, women comprised 69.5% of health technologists and technicians, 72.9% of therapists and 96.8% of registered nurses. Minorities represented about 11% of these areas (U.S. Bureau of Labor Statistics, 1980).

The Growth of a System of Sexual Hierarchy

Although women make up a large percentage of health-care workers that has not meant that they have received the majority of the economic benefits. The distribution of the dollars coming into the field has indicated that the physicians have received the highest rate of compensation and that the many allied health personnel have received a much lower level of compensation. Although physicians represent a smaller

part of the total work force today, they have maintained an effective strangle-hold on the rest of the health-care personnel.

This sad state of affairs has come about due to a number of reasons. The major reason is the composition of the work force of allied health personnel on the one hand and that of physicians on the other. The majority of persons in the allied health field are women, while the majority of physicians are men. Greenfield and Brown (1969) argued that this stemmed from the fact that nurses, who were the first non-physician health professionals, were women. It also stems from the previously mentioned influx of women into the labor market since the health care field is one of the most quickly expanding service industries.

As a result of this, allied health jobs have been characterized by low wages and little opportunity for advancement. Brown (1975) cited three major advantages to physician and "other elites" in the health industry of hiring women. First, Brown agrees with Ginzberg that they are a cheap source of labor. In addition, they are believed to be dedicated to service, "The Florence Nightingale Syndrome," and they are expected to drop out of the labor force to raise children thereby eliminating the need for promotions and/or salary increases. Third, women are less threatening. In order to expand their own services and their incomes, physicians need subordinates who will stay that way. Other male dominated health professions such as: optometry, osteopathic medicine, and chiropractic medicine, have posed more of a threat by providing direct competition to physicians.

Another characteristic of the health-care field is that the

further down the professional ladder persons are, the more likely they are to be non-white. This is true for both men and women. So there exists in the health-care field a sexual and racial hierarchy as well as an occupational one where decision makers in positions of prestige are mostly white males, and workers in positions of low prestige are women and minorities.

Advantages of Allied Health Field for Women

In response to the inevitable question of why women pursued these fields if they are so poorly treated, Brown suggested that they had little choice when they considered the opportunities available to them outside of the health field. Also, the low pay for high skills characteristic of allied health careers is only low when compared to salaries of white men. Salaries for women in hospital employment were above the median for white women, black men and black women workers in other industries. Another advantage to women was the acquisition of certified (through registry exams) skills which has allowed them to leave and re-enter the field and move to new locations and still be able to find a job.

Consequences of Female Dominated Fields

One of the consequences for having a disproportionate number of women in allied health fields, in addition to those mentioned previously (low wages, low prestige, and little opportunity for advancement) is a heavy turnover rate which in turn results in excessive training costs and relatively little accumulation of skill through experience (Reverby,

1972). The turnover is a result of women leaving the field to raise families (as previously mentioned), poor working conditions, lack of fulfillment due to narrow, specific jobs which have resulted from increased specialization, and frustrations caused by the rigid hierarchy that exists giving allied health personnel little control over their work. A caste system is formed that "reflects not only divisions between job categories or sex but deeper divisions of class and race" (Health/PAC Bulletin, 1972).

Another consequence of the high concentration of women in allied health field is that men are reluctant to enter the field (Greenfield & Brown, 1969). Allied health has become stigmatized much in the same way as nursing. Men are found concentrated at the top of the hierarchy in positions of power such as physicians and hospital administrators and at the bottom as unskilled laborers, janitors, orderlies, food service workers, etc. But, the majority of personnel in between these two extremes, such as allied health professionals, are women (Brown, 1973, 1975).

According to Stiegler (1980), occupational sex segregation, a large number of one sex filling particular kinds of jobs, has been characteristic of the U.S. labor market and in particular the health-care industry, and in itself is very detrimental to both the people in the profession and to the industry. It decreases the opportunity for certain segments of the population (such as minorities) from acquiring potentially productive occupations. It also has the tendency to trap women into typically low-paying, low-status jobs. The industry suffers from the lack of professional development of personnel who make up a

large percentage of its manpower.

Maintenance of the System

According to the Health/PAC Bulletin (1972) the "strangle-hold" that physicians have over other health-care workers is maintained through their control of accreditation of educational programs, certification of personnel and licensure by governmental agencies. Brown (1975) indicated that this domination still exists in these areas and through the Joint Commission for Accreditation of Hospitals (JCAH), American Hospital Association (AHA), American Medical Association (AMA) and the Commission on Medical Education (CME), physicians not only control other professions in the field, but they can create new occupations (for example medical laboratory technicians and physician's assistants) and control the division of labor. This domination still exists today.

Occupational Sex-Role Stereotyping

There have been many studies on occupational sex-role stereotyping, the association of certain occupations and the roles attributed to them, with members of one particular sex. Following is a summary of relevant research.

Sex-Role Stereotyping and Career Choice

Schlossberg and Goodman (1972) demonstrated the existence of sex-role stereotyping in kindergarten and sixth grade students. The subjects were asked to categorize jobs according to whether men and/or

women could fill them. The results showed that the children categorized certain occupations such as: librarian, waitress and nurse as feminine, while jobs of repairing automobiles and T.V's and designing buildings were categorized as masculine.

Brady and Brown (1973) performed a study of eight and ten year olds from different socioeconomic classes. They were looking for sex differences on selected vocational variables. They found that boys expressed significantly more choices than did girls. Girls limited themselves to "feminine" occupations such as teacher, nurse and housewife. Similar results were also obtained in studies by Siegel (1973), Vondracek and Kirchner (1974), Karre (1976), Konle and Piliavin (1976), and Kriedberg, Butcher, and White (1978) that support the premise that children state occupational preferences that reflect traditional sex-role stereotypes.

There has also been research to support the assertion that children are becoming more liberal in their stereotyping of occupations in recent years. Shepard and Hess (1975) found that males and females viewed more occupations as being open to both groups, with females being more liberal than males. Gregg and Dobson (1980) in a study of differences in attitudes and interests of 5- and 6-year old boys and girls found them to be generally more liberal than conservative in their attitudes toward a variety of occupations. Again, girls were found to be more liberal than boys. These liberal attitudes, however, were not reflected in their personal preferences. Even though the children identified many occupations as being available to both sexes their expressed interest coincided with traditional sex-appropriate careers.

Shinar (1975) investigated the nature of sexual stereotypes of occupations among college men and women. Subjects were asked to rate occupational titles as being feminine, masculine or neutral. The results indicated that sexual stereotypes of occupations were clearly defined and that they were held in agreement by both the college men and women surveyed.

Touhey (1974a, 1974b) examined the effects of increasing the male participation in occupations typically performed by women and the female participation of high-status occupations that have been typically dominated by males on prestige and desirability ratings by male and female college students. The findings showed that ratings of occupational prestige and desirability by both male and female college students increased as male participation increased and the ratings decreased as the proportion of women increased.

Heilman (1979) systematically varied projections of the proportion of men and women expected to enter two occupations that were presently male-dominated. The subjects of the study were male and female high school students. The results showed that while a projection of a more balanced ratio of men to women in the occupation reduced interest in the occupation among males, it increased the degree of interest among females. Other studies (Birk, Tanney, & Cooper, 1979, Krefting, Berger, & Wallace, 1978) support the influence of sex ratio information included in occupational descriptions on sex-role stereotyping attitudes.

Sex-Role Stereotyping and Clinical Counseling

Sexual bias against women during the counseling process in clini-

cal settings has been investigated by several researchers. Studies to determine whether or not clinicians hold sex-stereotyped attitudes have included the study by Broverman, et. al. (1970). This study tested the hypothesis that clinical judgements about the traits characterizing healthy, mature individuals will differ as a function of the sex of the person judged. The results of their study confirmed this. They found that clinical judgements paralleled the stereotypic sex-role differences previously reported by such investigators as Rosencratz, et. al. (1968) and Neulinger (1968). They also found that the behavioral attributes which are regarded as healthy for an adult, sex unspecified, (presumably from an ideal standpoint), were more often considered by clinicians as healthy or appropriate for men than for women.

Similar studies by Aslin (1975) and Maslin and Davis (1975), found different standards of mental health for females vs. adults, but only for male subjects. Other studies that have utilized other variables in addition to client's sex have demonstrated some results that conflict with the studies cited above.

Hayes and Wolleat (1978) asked counselor trainees to rate male and female clients using the Broverman Sex-Role Stereotype Questionnaire. Analysis of the data demonstrated significant results on several items, but many of those results were in the opposite direction of sex bias effect. Maxfield (1976) found similar results in a study involving therapists as subjects.

Billings (1977), Coen (1975), and Freedman (1976) all did similar studies involving clinicians' diagnoses and recommendations for treatment of case studies representing different levels of pathology. The

case studies were written in two forms: male and female. In the Coen study, female cases were rated more favorably than male cases. The Freedman and Billings studies failed to demonstrate an influence on diagnoses and treatment due to the client's sex.

Goldberg (1976) also studied the effects of counselor sex-role stereotypes on their judgements of clients. Clinicians were given case studies in which a client was presented with a problem and asked to choose between a solution previously determined to be appropriate for his/her sex and a solution determined to be inappropriate. The counselors chose the same solution for each client's problems in all cases regardless of the client's sex.

Sex-Role Stereotyping and Career Counseling

Sexual bias against women has been documented in career counseling in educational settings. Schlossberg and Pietrofesa (1973) tested the hypothesis that counselors were biased against women entering a "masculine" occupation by interviews between counselor trainees and a coached female counselee who was torn between entering the "masculine" field of engineering or the "feminine" field of education. The results indicated that counselor bias exists against women entering a masculine occupation. Female counselors displayed as much bias as did their male counterparts.

Thomas and Stewart (1971) in a study of counselor response to female clients with deviate and conforming career goals tested the hypothesis that high school counselors will perceive female clients having traditionally "feminine" goals (conforming goals) differently

than they will perceive female clients having traditionally "masculine" career goals (deviate goals). The results were that conforming career goals were perceived by counselors to be significantly more appropriate than were deviate career goals. Female clients with deviate career goals were perceived to have a significantly greater need for counseling than were female clients with conforming goals. Additional career choices suggested by the counselor as appropriate for the client's further consideration tended to be similar to the client's stated goal.

Suggestions offered to female clients with deviate career goals were significantly more deviate than alternatives given to clients having conforming goals. Therefore, counselors were willing to work with a client within the context of the client's stated interests even though they may have felt that those interests were inappropriate.

Donahue (1976) asked high school counselors to choose the most appropriate occupation for male and female students presented in case studies. Counselors chose occupations for males that had higher salaries, demanded more education, and less supervision than those chosen for females. Mercado and Atkinson (1982) similarly found that male counselors were more likely to demonstrate sex role stereotyping when recommending careers for exploration than were female counselors.

Fitzgerald (1980) studied the effects, on the counseling relationships when a counselor attempted to broaden a client's option by suggesting non-traditional occupational choices. The subjects were college students enrolled in a vocational psychology course. The results confirmed the hypothesis that non-traditional occupational choices are rated as less appropriate for students of both sexes than

are traditional choices. The study also indicated that although the subjects were clearly biased in favor of traditional occupational choices, this bias did not affect either their evaluations of the counselor who suggested and supported non-traditional role choices or their own willingness to work with that counselor. Also, nontraditional clients were not judged less well adjusted than traditional clients, in contrast to the results cited earlier by Thomas and Stewart (1971).

Schwartz's (1974) doctoral dissertation to study whether professional guidance counselors exhibit sex biases toward women who are intellectually superior confirmed the following hypotheses:

1. Guidance counselors recommended low-ability level occupations significantly more often for intellectually superior female students than for identically described male students and male counselors recommended low-ability level occupations significantly more often for female students than did female counselors.
2. Guidance counselors recommended female-role occupations significantly more often for female students of superior intelligence than for identically described male students and male guidance counselors recommended female-role occupations significantly more often for female students than did female counselors.
3. The counselor who recommends lower-ability-level occupations for female students of superior intelligence also tended to recommend female role occupations for them.

Persons (1972) in a doctoral dissertation studied the effect of

racial and/or sexual bias on the occupational prediction for bogus clients by counseling trainees. An occupational prestige checklist was developed consisting of simulated client profiles and a list of occupations for use with each profile. Information on the bogus client profile was identical except for race and sex which were randomly varied between counselor trainee subjects. The findings indicated that female counselor trainees demonstrated no significant differences in the prestige levels of their occupational predictions between any of the bogus client race/sex types. However, male counselor trainees indicated significant differences in the prestige levels of their occupational predictions in two cases and approached significance in two other cases. Overall, male counselor trainees predicated significantly higher prestige level occupations for male bogus clients than did female counselor trainees. Male counselor trainees predicted significantly lower prestige level occupations for black female bogus clients than did female counselor trainees.

In a related study of the effects of race and sex on college admissions, Walster, Cleary, & Clifford, (1970) demonstrated an interaction effect between ability and sex of the student. Males were markedly preferred over females at low ability levels although this difference was not seen at the higher levels.

There have also been studies that have failed to demonstrate sexual bias in counselors. Borgers, Hendrix and Price (1977) asked counselors to judge male and female profiles and rate the appropriateness of the occupational choice stated on each profile. There were no significant differences found due to sex of client although interests

and abilities of client profiles did produce such differences.

Hill, et. al. (1977) attempted to replicate the Thomas and Stewart (1971) study. Counselors were asked to rate the client in terms of seriousness of her problem, her ability to benefit from counseling, her attractiveness, and the number of counseling sessions that would be needed. They found no significant differences due to the conventional-ity of the vocational choice on any of the ratings.

As far as the importance of counselors and vocational education is concerned, Miller (1980) cites a definite link between sex segregation in the world of work and sex-segregated enrollment in vocational education training programs, and suggests that counselors and vocational educators can play an important part in helping students choose and prepare themselves for occupational roles.

Harway (1980) in a review of the literature discusses the importance of non-sexist counselor materials and techniques and the need for a more assertive role for the counselor to overcome the inequities in the treatment of women in society. In contrast, Auster and Auster (1981), and Weishaar, Green, and Craighead, (1981), suggest that high school counselors have negligible influence on the career decisions of high school students in making career decisions. Thus, in addition to the ongoing controversy over whether or not sex bias by clinical and academic counselors has been adequately demonstrated (Smith, 1980), there is the controversy over whether or not academic counselors have a significant influence on the career decision-making process of their students.

The Counseling Professions' Response to Sex-Bias Research

Moore and Strickler (1980) cite several "bias-free" career development programs that evolved during the 1970's as a result of task forces, position papers, research, and legislation (Women's Educational Equity Act, 1974) mandated by the American Personnel and Guidance Association (APGA), the Association for Counselor Education and Supervision (ACES), the U.S. Office of Education, and the U.S. Congress in response to the issue of sex role stereotyping related to counseling.

This level of activity by professional organizations and the federal government, however, was not matched in counselor training and continuing education programs. Few educational institutions reported plans to implement training and in-service programs dealing with sexism or women's issues (Hollis and Wantz, 1977).

While some counselors in the field may be aware of the problems and are actively participating in programs that address this issue, there is still concern that counselors-in-training and counselors who may have entered the field prior to the women's movement may not be exposed to curricula and continuing education programs aimed at increasing their awareness of sex role stereotyping and increasing their skill to deal with this issue (Moore and Strickler, 1980, Harway, 1980).

Summary

The emphasis in research concerning sex role stereotyping in counseling has been and will continue to be focused on the discouragement of women who pursue male-dominated professions since this is the area where there is the major concern. Little data exist concerning

discrimination against males who may be interested in pursuing female-dominated professions.

Sex discrimination against men however, has an impact on women because it promotes sex-segregation in certain occupations. Prestige, financial reward, and opportunity for advancement, are adversely affected when an occupational field is almost entirely made up of females. The attitudes of counselors and their students, therefore, merely reflect society's attitude that professions that are predominantly female are less desirable.

If the ultimate goal of bias-free career development programs is to expand the career options of both men and women by eliminating occupational sex role stereotyping, then it would seem that investigations will have to be done to determine whether or not male students are discouraged from exploring female-dominated careers such as those in the allied health field. There may also be interaction effects between such variables as sex, ethnic background and ability as seen in previous studies. If this is the case, it would be appropriate to address this problem as well in counselor-training continuing education and career development programs. Elimination of this type of bias is very important when one considers that certain segments of the population (such as black males) have very high unemployment rates and may be discouraged from professions that have employment opportunities at varying levels of entry.

METHODOLOGY

The purpose of this study was to determine whether counselors' perceptions of the male/female ratio and the ability-level needed to enter certain allied health professions, and the sex and ethnic background of the student influence their judgement in simulated advising of students of varying academic ability. This investigator is particularly interested in whether or not there is a sex, race interaction effect in the advising of black male students since the numbers of black males who express an interest in the allied health field are so few.

The methodology used for this study was similar to that used by Schwartz (1974) and Persons (1972) in the use of simulated client profiles for counselors to review and make decisions on career advisement. However, instead of using occupations pre-rated on prestige (Persons) or ability-level (Schwarz), subjects in the proposed study were asked to rate selected allied health careers based on brief descriptions of the fields, and to give their own perceptions of the male/female ratio and ability-level of the field. This would seem to be more appropriate since many allied health fields are relatively unknown and subjects may have very different views of the fields as compared to those of expert judges. Also, the sparcity of data on the allied health fields, their diversity and the recency of development of the occupations therein have limited the availability of national rankings such as those available for other occupations.

Sample Selection

The sample for this study was chosen from a mailing list of

American Personnel and Guidance Association (APGA) members working in a high school setting in the State of Illinois and from the listing of high school members from the 1982 Directory of the Illinois Association of College Admissions Counselors (IACAC).

There was a total of 507 counselors after the listings were combined and duplicates eliminated. Sixty percent (303) of the counselors came from the APGA list and forty percent (204) were from the IACAC Directory. Stratified random sampling was used to select 400 subjects from the combined list, 360 to be used for the final survey and 40 for use in the pilot studies. In this way the subjects in the sample would represent the two organizations in the same proportion as in the larger population. The stratified sampling was accomplished by deleting sixty-three persons from the APGA list and forty-four persons from the IACAC list, through the use of a table of random numbers (See Table 3).

Questionnaire Development

A questionnaire consisting of three sections was used for the survey (See Appendix A). Its development is outlined below.

Section I - Health Career Evaluation

The Health Career Evaluation section resulted from a pilot survey of 10 counselors randomly selected from the larger sample, to act as judges. This selection was done through the use of a table of random numbers. Each counselor was sent a questionnaire entitled, "Health Career Evaluation" (Appendix A). This checklist consisted of Likert-type rating scales on which subjects were asked for their perceptions of the

TABLE 3
POPULATION AND SAMPLES

Organization	N	% of Total	n
American Personnel and Guidance Association	303	60%	240
Illinois Association of College Admissions Counselors	204	40%	160
Total	507	100%	400

male/female ratio of the labor force and the level of ability needed for 20 health professions listed.

The proportion of men and women in the field was asked rather than asking the subject to describe a field as being masculine or feminine based on personality attributes or more vague criteria. This was considered to be a more objective approach to obtaining the necessary information with less chance of there being a difference between the mean ratings given to a profession by male and female subjects based on differences in their interpretation of what "masculine" and "feminine" mean.

Eighteen of the professions on the checklist were allied health professions. The specific professions included were based on the researcher's attempt to include professions that would be perceived by the subjects as being either male or female dominated and represent high, average, and low ability levels. The two non-allied health professions: dentistry and pharmacy were included in the event that none of the eighteen allied health professions were perceived by the subjects to be male-dominated, and requiring high ability. It was anticipated that pharmacy and dentistry would fall into one or the other of these categories.

The professions of medicine and nursing were avoided since they are so commonly stereotyped as being male and female professions, respectively. Also since these two professions are probably much more familiar to counselors than are the allied health professions, it was feared that the inclusion of these two professions on the final

questionnaire would result in their selection most often as career choices for students to the exclusion of the other allied health career choices.

A booklet entitled, "Selected Health Careers", was compiled by the researcher and sent to the subjects along with the "Health Career Evaluation " (Appendix A). The booklet contains brief descriptions of the twenty professions on the checklist including the professional's job duties, the length of time spent in preparation for the field, and examples of the types of courses which are taken prior to entering the professional school.

The booklet was compiled by abstracting information from the Health Careers Guide Book, 4th ed., 1979, U.S. Dept. of Labor, Employment, and Training Administration and Health, Education and Welfare. The descriptions were sent to two health professionals and one admissions counselor/recruiter in the College of Associated Health Professions, University of Illinois, prior to their inclusion in the booklet. They were reviewed for clarity, accuracy, and editorial comments.

In addition to recording their perceptions of the male/female ratio of the labor force, the subjects were also asked to rate each profession on level of ability needed to enter the field. The subjects were instructed to base their ability-level rating on the description of the profession provided in the booklet and any personal knowledge they may have of the competitiveness of admission into the professional educational program. The results of this pilot survey were used to determine ability-level and predominance by sex and to reduce the

number of careers from 20 to 9 for inclusion in the final questionnaire (See Table 4).

High ability was defined as ratings 7-9; average ability was defined as ratings 4-6; low ability was defined as ratings 1-3. A male dominated profession was defined as greater than 50% male. A female dominated profession was defined as greater than 50% female.

The criterion for selection of these professions for inclusion in the final questionnaire was at least 70% consensus for both ability and male/female categories. These criteria were felt to be stringent enough, since these ratings were only being used as guidelines for inclusion of these professions in the questionnaire. The final categorizations would depend upon the ratings of the 360 subjects in the final survey.

Section II - Student Profiles

The student profile section of the questionnaire asks the subjects to review three student profiles and make vocational recommendations to each student based on the information provided in the profiles. The student profiles provided the subjects with the following information: student name, ethnic background, year in school, math and science courses completed and grades obtained, SAT math, verbal, reading and vocabulary scores, Ohio Vocational Interest Score, student activities (including part-time employment, if any), homeroom teacher's comments on student's behavior and attendance rating.

SAT scores and Ohio Vocational Interest Scores are used in the Profiles because of their use in the Chicago Public School System to

TABLE 4
CATEGORIZATION OF HEALTH PROFESSIONS

Profession	Ability-Level		Predominant	
	(Level of Consensus)		Male or Female	
	(Level of Consensus)		(Level of Consensus)	
Dentist	High	(6/7)	Male	(7/7)
Dietician	High	(6/7)	Female	(7/7)
Emergency Medical				
Technician	Average	(5/7)	Male	(6/7)
Medical Social Work	High	(5/7)	Female	(5/7)
Operating Room	Average	(6/7)	Female	(5/7)
Technician				
Orthotist	High	(5/6)	Male	(5/6)
Pharmacist	High	(7/7)	Male	(7/7)
Physical Therapist	High	(6/7)	Female	(5/7)
Speech Pathologist	High	(5/7)	Female	(6/7)

assess student ability and interest. The other sources of information used in the profiles such as grades, activities, etc., were chosen because of their use in previous similar studies (Schwartz, 1975; Persons, 1972). The profiles were developed to reflect three different academic ability levels (high, average, and low) through the variation of the level of science and math courses, grades, SAT scores, teacher comments, etc.

A pilot survey was sent to 10 high school counselors randomly selected from the larger sample. These subjects were different from those selected to judge the health career evaluation forms. These counselors were asked to use Likert-type scales to rate student profiles that were developed by the investigator to represent 2 high-ability students, 2 average-ability students and 2 low-ability students (see Appendix A). The profiles used for this pilot survey, unlike the ones to be used in the final questionnaire, were devoid of information on the sex and ethnic background of the student. This was done so as not to bias the counselor's ratings.

It was decided ahead of time that ratings of 9-7 would be considered to represent high-ability, 6-4 would represent average-ability, and 3-1 would represent low-ability. The ratings of a particular profile would be considered reliable if 80% of the raters were in consensus. This would also give validity to the researcher's categorization of the profile. Consensus was obtained on four (4) of the six (6) profiles. The profile numbers, level of consensus and categorizations appear in Table 5 on the following page.

TABLE 5
 JUDGES' CONSENSUS ON STUDENT PROFILES

Profile Number	Consensus % (Ratio)	Ability Level
1	100% (7/7)	High
2	80% (6/7)	Average
3	80% (6/7)	Average ^a
4	100% (7/7)	High
5	63% (5/7)	No Consensus
6	63% (5/7)	Low

^a The researcher developed Profile #3 to represent low-ability, but since 80% of the subjects perceived it to represent average, it was used as average ability.

Since the level of consensus for Profiles #5 and #6 did not meet the 80% criterion that was previously set, 2 more Profiles (5a and 6a) were developed to represent low-ability. These revised profiles were sent along with the 4 validated profiles to 10 more subjects for rating. Again, consensus was not achieved for the low-ability profiles.

Both Profiles 5a and 6a received only 4/7 ratings (57%) in the 1-3 range. This was less than the 5/7 consensus achieved with the original Profile #6, which had higher grades, test scores, etc. This researcher decided therefore to use Profile #6 as the low-ability profile. Since 80% was not obtained, it was decided that it could not be assumed that subjects would necessarily perceive this profile to be of low-ability. Therefore, the researcher included the rating scale in each profile with the expectation that the results from the larger sample in the final survey would be more reliable. The subjects' interpretation of the ability-level of the profile will be accepted whether or not this interpretation coincides with the expectation of the researcher.

Also, rather than defining high-ability as 7-9 ratings, average-ability as 4-6 ratings, and low-ability as 1-3 ratings, the mean rating would be calculated for each of the three different ability-levels and a test of significance performed to insure that they are statistically different. As long as one profile can be designated as the highest, one profile designated as the lowest and one in-between, and as long as the means of the rankings of the three profiles are statistically different, then it is not crucial whether or not they are labelled high-, average-, or low-ability. The thirty counselors used in the pilot studies were excluded from further participation in the study to avoid any counselor

from having too much apriori knowledge of the study while completing the final questionnaire.

Diversification of the student profiles

The three different profiles were further diversified by introducing the variables of sex and ethnic background into the information provided concerning interests and ability. Each profile was given a male and female and a black and white form so that 4 forms of each profile were obtained: black male, white male, black female, white female. The reason ethnic background was limited to black and white was so that the question of the student's ability to speak and understand English (as a foreign language) as a possible cause of low grades or SAT scores would not be an issue as it might be for Hispanic or Asian students. All other information specific to a particular ability level remained the same, resulting in twelve different profiles, 4 at the highest ability-level, 4 at the lowest ability-level and 4 at the middle ability-level. Since each of the 360 counselors in the final survey received 3 profiles to evaluate, there would ideally be 90 observations for each profile.

Each counselor received one profile at each ability-level. The 4 forms of each level were shuffled and distributed randomly, so that the sex and ethnic background of the student profile that each counselor received varied.

Section III - Demographic Information

Ten questions were developed for inclusion in Section III of the questionnaire. The purpose of these questions was to gather additional information on the subjects, their schools, and the student population that they serve. Some of this information such as: number of years of experience, and counselors' sex were used in the analysis of data. Question #16 "Is counseling your primary responsibility" was used to screen out those persons on the mailing lists whose primary responsibility was other than counseling (e.g., administration). The content and layout of the final questionnaire was determined after consideration of suggestions made by a consultant of the University of Illinois - Medical Center, Survey Research Laboratory and the members of the Winter, 1982 Dissertation Seminar, Foundation 599, Loyola University, under the direction of Dr. Anne Juhasz. A summary of the demographic information can be found in Appendix C.

Collection of Data

The following efforts were made to make the questionnaire easy to complete and economical to distribute:

1. The questionnaire was reduced to ten, $5\frac{1}{2}$ x $8\frac{1}{2}$ pages. The pages were two-sided with the exception of the 3 student profiles since the profiles had to be interchanged.
2. The descriptions of the health careers was placed in a separate booklet of the same size and consisted of 20 pages.
3. The booklet was developed so that counselors who were familiar with any (or all) of the professions would not have to read

through a lengthy questionnaire. The booklet only had to be consulted if the counselor was unfamiliar with any of the professions.

4. Each subject received a cover letter, questionnaire (which included instructions for its completion), "Selected Health Careers" booklet and a stamped, return envelope. All materials were sent and returned by first class mail in order to facilitate speed of delivery (See Appendices A and B).
5. A follow-up mailing was sent after approximately two weeks containing another cover-letter, questionnaire, "Selected Health Careers" booklet and return envelope.
6. All of the questionnaires were given a 4 digit numerical code in order to facilitate the follow up mailing and to identify the respondent as being from the Chicago area or outside of the Chicago area.
7. The first mailing was sent out on June 16, 1982. The follow-up mailing was sent out on June 30, 1982.
8. The date for return of all questionnaires was July 23, 1982.

The investigator received 177 returns (an overall return rate of 45 percent). Of these 177, 122 were considered to be completed returns and were included in the data analysis. The completed return rate was therefore 34 percent. Completed returns had responses to all of the scales in Section I and responses to the student ability rating scale and at least a first choice career recommendation in Section II.

Returns with Sections I and II completed that lacked some of the demographic data in Section III were included in the data analysis as

long as the counselors either indicated that counseling was their primary responsibility or that they counseled more than 100 students per year. The decision to include respondents whose primary responsibility was not counseling but counseled more than 100 students per year was made since the majority of respondents who were primarily counselors were in the 100-499 range.

The remaining 45 returns were excluded for one or more of the following reasons: questionnaire returned with no responses, improperly completed, more than one response per item, respondent's primary responsibility was not counseling, and he/she counseled less than 100 students per year, returned after cut-off date. Table 6 illustrates how each of the twelve student profiles were distributed for the 122 completed returns.

Statistical Analysis

A correlational survey research design was used to gather data through the use of a questionnaire mailed to a random stratified sample of high school counselors in the State of Illinois. The study was designed to test the following hypotheses:

- Ho. There is no relationship between counselors' perceptions of percentage of males in selected health professions and their perception of the ability-level needed to enter the field.
- H1. As counselors' perceptions of the percentage of males in selected health professions increases, their perception of the ability -level needed to enter the field will also

TABLE 6
RATE OF RETURN OF STUDENT PROFILES

Profile Number/Name	Ethnic Background	Usable Returns
1. Robert	Black	26
2. Robert	White	35
3. Roberta	Black	32
4. Roberta	White	30
5. James	Black	26
6. James	White	30
7. Joan	Black	34
8. Joan	White	33
9. Bernard	Black	24
10. Bernard	White	40
11. Bernice	Black	32
12. Bernice	White	23

increase.

- Ho. There is no relationship between counselors' perceptions of the percentage of males in selected health professions and the number of times the professions are selected for male students.
- H2. As counselors' perceptions of the percentage of males in selected health professions increases, there will be an increase in the number of times the professions are selected for male students.
- Ho. There is no relationship between the ability-level of male students and the frequency with which counselors' select fields they perceive to be female-dominated for male students.
- H3. Counselors will discourage more often males of high-ability from pursuing fields they perceive to be female-dominated more frequently than they will discourage low-ability males from pursuing fields perceived to be female dominated.
- Ho. There is no relationship between the ethnic background of male students and the frequency with which counselors select fields they perceive to be female-dominated for male students.
- H4. Counselors will discourage minority males from pursuing fields perceived to be female-dominated, more often than they discourage majority males from this pursuit.
- Ho. There is no relationship between counselors' perception of students' ability-level and students' sex and ethnic

back ground.

- H5. Counselors' perception of students' ability-level will be influenced by sex and ethnic background of the student.

Validity

The twelve student profiles were developed to represent three levels of academic ability: High, average, and low. Profiles 1-4 were developed to represent high-ability students, profiles 5-8 represented average ability students, and profiles 9-12 represented low-ability students. Table 7 illustrates the summary data of the ability ratings of each profile. The overall mean of the four high ability profiles was 7.6, the overall mean of the average ability profile was 5.7, and the overall mean of the low-ability profiles was 3.5. Interval estimates of the mean of each profile was constructed using a 99% confidence level. The intervals of the means overlapped within each level of ability, therefore there was no significant difference in the ratings of each of the four profiles within each ability-level. The intervals of the means did not overlap between ability-levels so the mean ratings of the high-, average- and low-ability profiles do differ significantly between the three groups.

Reliability

The interclass coefficient of reliability was calculated for the male/female ratio scales and the ability scales of both the professions and the student profiles. The overall reliability of all of the items

TABLE 7

SUMMARY DATA OF ABILITY SCORES OF TWELVE STUDENT PROFILES

Level	Profile	\bar{x}	N	S.D.	S.E.	Interval Estimate of \bar{x}	* Overall \bar{x}
High	1. Black Male	7.70	26	.62	.12	7.99-7.40	7.6
	2. White Male	7.54	35	.66	.11	7.80-7.27	
	3. Black Female	7.66	32	.70	.12	7.95-7.36	
High	4. White Female	7.59	29	.63	.12	7.88-7.29	
Average	5. Black Male	5.72	25	.54	.11	5.99-5.45	5.7
	6. White Male	5.80	30	.66	.12	6.10-5.50	
	7. Black Female	5.79	34	.77	.13	6.11-5.47	
Average	8. White Female	5.73	33	.67	.12	6.02-5.44	
Low	9. Black Male	3.26	26	1.0	.19	3.73-2.79	3.5
	10. White Male	3.53	38	.69	.11	3.00-3.26	
	11. Black Female	3.53	30	.97	.18	3.97-3.09	
Low	12. White Female	3.59	22	.85	.18	4.04-3.14	

* 99% Level of Confidence.

was $r=.99$, the split-half reliability coefficient was calculated for the odd items (M/F scales) as $r=.99$ and for the even items (ability scales) as $r=.99$. Thus, validity and reliability was established for the instrument.

Hypothesis 1 was tested using a multiple regression analysis with counselors' sex and male/female dominance of the profession as independent variables and ability scores of the professions as dependent variables. Hypothesis 2 was tested using t-tests and Pearson's coefficient of correlation utilizing mean male/female ratings and selection scores of the professions, and sex and ethnic background of the student. Hypotheses 3 and 4 were tested using two-way analyses of variance and t-tests utilizing students' sex and ability-level and students' ability-level and ethnic background (respectively) as the variables. Hypothesis 5 was tested using a chi-square distribution with students' sex, and ethnic background as independent variables and student frequency as the dependent variable.

Summary

A correlational study of 360 high school counselors was conducted by means of a mail survey. The questionnaire consisted of three parts. Part I - Health Career Evaluation and Part II - Student Profiles utilized Likert-type scales to obtain information on counselors' perceptions of the male/ female ratio of workers in selected health fields and their ratings of academic ability for student profiles that were provided. Part II also included a forced-choice question on career recommendations for the students presented in the profiles. Part III of the question-

naire collected demographic information on the counselors and their students.

A pilot survey was done in order to include health professions of different ability-levels, and male/female ratios, to insure student profiles of varying ability-levels and to validate the accuracy of the descriptions used in the booklet "Selected Health Careers".

Statistical analyses included interval estimates of the means, intraclass correlation for reliability, chi-square, analysis of variance, multiple regression, t-tests, and Pearson's coefficient of correlation. There were 177 returned questionnaires. One hundred and twenty-two of the returns were considered complete and used in the analysis of data for a response rate of 34 percent.

ANALYSIS OF DATA

The problem of the influence of sex-role stereotyping on the advisement of black male students with an interest in health careers was investigated through the use of simulated student profiles. The study involved the relationship of counselors' perception of selected health careers and their selection of these careers for investigation by students of varying sex, ethnic background, and ability-levels.

A model (see Figure 5) was constructed to help the researcher to conceptualize the variables involved in counselors' advising of high school students for allied health careers. This model was then used to decide upon the most relevant hypotheses to be tested concerning the relationships between these variables.

The first consideration in the construction of the model was counselors' perceptions of the student. The relevant student variables selected for investigation by this researcher were: student's sex, ethnic background and academic ability in science and math courses.

The other major consideration was the counselors' perceptions of certain allied health professions. The variables decided upon as relevant to this model were: the ratio of male to female workers in the profession or more specifically the percentage of males; and the ability level that an individual would need to enter the profession.

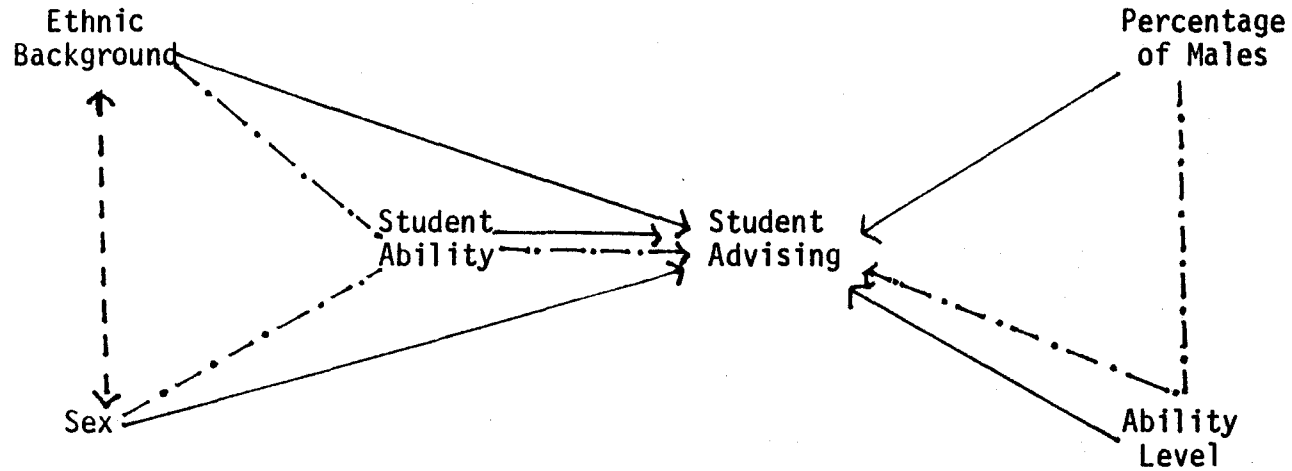
According to the model the student's ethnic background, sex, and ability each have a direct influence on student advising. In addition, ethnic background and sex also have indirect influences on advising due to their influence on the counselor's perception of student ability. Sex and ethnic background work both independently and interact with each

FIGURE 5

MODEL OF COUNSELORS' PERCEPTIONS OF STUDENT AND PROFESSION

Student
Variables

Profession
Variables



- - - - - Interaction
- Direct Influence
- Indirect Influence

other to produce an effect on the perception of student ability.

Counselors' perception of the percentage of males working in the profession and the ability level needed to enter the profession both influence student advising. Each of these variables have a direct influence and the percentage of males also has an indirect influence because it can affect the counselor's perception of ability level needed to enter the profession.

Five hypotheses of interest to the researcher were selected from the variables and relationships depicted in the model. The hypotheses are stated below.

- Ho. There is no significant relationship between counselors' perceptions of percentage of males in selected health professions and their perception of the ability level needed to enter the field.
- H1. As counselors' perceptions of the percentage of males in selected health professions increases, their perception of the ability level needed to enter the field will also increase.
- Ho. There is no significant relationship between counselors' perceptions of the percentage of males in selected health professions and the number of times the professions are selected for male students.
- H2. As counselors' perceptions of the percentage of males in selected health professions increases, there will be an increase in the number of times the professions are selected for male students.

- Ho. There is no significant relationship between the ability-level of male students and the frequency which counselors' select fields they perceive to be female dominated for male students.
- H3. Counselors will discourage males of high-ability from pursuing fields they perceive to be female dominated more frequently than they will discourage low-ability males from pursuing fields perceived to be female dominated.
- Ho. There is no significant relationship between the ethnic background of male students and the frequency which counselors select fields they perceive to be female dominated for male students.
- H4. Counselors will discourage minority males from pursuing fields perceived to be female dominated, more often than they discourage majority males from this pursuit.
- Ho. There is no significant relationship between counselors' perception of students' ability level and students' sex and ethnic background.
- H5. Counselors' perception of students' ability level will be influenced by sex and ethnic background of the student.

RESULTS

Each of the variables in the model was operationalized and the hypotheses regarding their relationships were tested through statistical analyses.

Hypothesis 1 deals with the right-hand side of the model: counselors' perceptions of the profession. Hypothesis 1 was tested using multiple regression analysis on the 'male/female ratio in percentages' and the 'ability' scales in Part I of the questionnaire. The analyses were done using the overall mean of male/ female (M/F) ratings, expressed as percentage males and hereafter referred to as M/F scores, and the overall mean of the ability ratings of the professions expressed as ability scores. Although counselors' sex was not included in the model, this variable was included in the testing of the first hypothesis to explain as much variance in the ability score as possible. The M/F score and the counselors' sex were used as independent variables and the ability scores were used as the dependent variable. The professions were then separated into male (mean M/F rating greater than 50% male) and female professions (mean M/F rating less than 50% male) (see Table 8) and the analyses repeated. It was conjectured that the influence of the M/F score might vary depending upon whether the percentage of males was perceived to be high (male dominance) or low (female dominance).

Of the two variables, M/F scores and counselors' sex, the M/F score was the only predictor that was significantly greater than zero. An F value of 8.81, significant at the .01 probability level, was obtained with 1 and 119 degrees of freedom for the analysis using the mean M/F scores and mean ability scores of all the professions combined. F values of 3.07 and 5.37 were obtained for the analysis using male and female professions, respectively, significant at the .05 probability level with 1 and 119 degrees of freedom (see Tables 9, 11, 13).

However, in the first analysis, only 7% of the variance in the

TABLE 8
 CATEGORIZATION OF MALE/FEMALE PROFESSIONS

Profession	Mean M/F Rating	
	(% male)	Classification
Dentist	84	Male
Dietician	22	Female
Emergency Medical Technologist	74	Male
Medical Social Worker	34	Female
Operating Room Technician	36	Female
Orthotist	74	Male
Pharmacist	69	Male
Physical Therapist	50	Neutral
Speech Pathologist	32	Female

mean of the ability scores of all of the professions was explained by the M/F scores, leaving 93% of the variance unexplained (see 'R Square' Table 10). In the second analysis using the M/F score of male professions and the corresponding ability scores, only 2.5% of the variance in the ability scores was explained, leaving 97.5% unexplained (see 'R Square' Table 12). In the third analysis using M/F scores of the female professions and the corresponding ability scores, only 4.4% of the variance in the ability scores was explained, leaving 95.6% unexplained (see 'R Square' Table 14). When the magnitude of the standard error is considered for this variable (0.61247, 0.61420, and 0.78929, respectively for the three analyses), it would suggest that this variable is a poor predictor (see Tables 9, 11, 13).

Simple regression analyses were performed for each individual profession using the mean M/F score of each individual profession as the independent variable and the mean ability score as the dependent variable (see Table 15). The M/F scores were significantly greater than zero for the following professions: Medical Social Worker ($F = 5.048$); Operating Room Technician ($F = 9.213$); Orthotist ($F = 6.554$); and Pharmacist ($F = 6.909$). With 1 and 120 degrees of freedom these F values were significant at the .05 level of probability. However, only 4% of the variance was explained by the M/F score for medical social worker, 7% of the variance was explained for operating room technician and 5% for both orthotist and speech pathologist (see Table 15). Again the magnitude of the standard errors (.95016, 1.09244; .9443, and .85313 respectively) would again suggest that this variable is a poor predictor (see Table 15). Thus hypothesis 1 was not supported.

TABLE 9

MULTIPLE REGRESSION FOR ABILITY SCORE OF ALL PROFESSIONS

		Analysis of		Sum of	Mean	
Multiple R	0.26479	Variance	df	Squares	Square	F
R Square	0.07011	Regression	2	3.34382	1.67191	4.48629 (.05)
Adjusted R Square	0.05448	Residual	119	44.34784	0.37261	
Standard Error	0.61047					

VARIABLE	VARIABLES IN THE EQUATION			
	B	Beta	Standard Error B	F
Counselor's Sex	-0.52457	-0.05524	0.08418	0.388
M/F Rating of				
All Professions	0.29146	0.26309	0.00982	8.809 (.01)
(Constant)	5.16072			

All variables are in the equation.

TABLE 10
 MULTIPLE REGRESSION FOR ABILITY SCORE OF ALL PROFESSIONS
 SUMMARY TABLE

Variable	Multiple R	R Square	R Square Change	Simple R
Counselor Sex	0.03573	0.00128	0.00128	-0.03573
MF Rating of All Professions	0.26479	0.07011	0.25900	

TABLE 11

MULTIPLE REGRESSION FOR ABILITY SCORE OF MALE PROFESSIONS

		Analysis of		Sum of	Mean	
Multiple R	0.15902	Variance	df	Squares	Square	F
R Square	0.02529	Regression	2	1.16464	0.58232	1.54364
Adjusted R Square	0.00891	Residual	119	44.89120	0.37724	
Standard Error	0.61420					

VARIABLE	VARIABLES IN THE EQUATION			
	B	Beta	Standard Error B	F
Counselor's Sex	-0.14284	-0.01531	0.08455	0.029
M/F Rating of Male Professions	0.11769	0.15898	0.00671	3.079 (.05)
(Constant)	6.03273			

All variables are in the equation.

TABLE 12
 MULTIPLE REGRESSION FOR ABILITY SCORE OF MALE PROFESSIONS
 SUMMARY TABLE

Variable	Multiple R	R Square	R Square Change	Simple R
Counselor Sex	0.00806	0.00006	0.00006	-0.00806
M/F Rating of Male Professions	0.15902	0.02529	0.02522	0.15828

TABLE 13

MULTIPLE REGRESSION FOR ABILITY SCORE OF FEMALE PROFESSIONS

		Analysis of		Sum of	Mean	
Multiple R	0.20928	Variance	df	Squares	Square	F
R Square	0.04380	Regression	2	3.39573	1.69786	2.72537
Adjusted R Square	0.02773	Residual	119	74.1354	0.62299	
Standard Error	0.78929					

VARIABLE	VARIABLES IN THE EQUATION			
	B	Beta	Standard Error B	F
Counselor's Sex	-0.36755	-0.03036	0.10857	0.115
M/F Rating of				
Female Professions	0.17021	0.20780	0.00734	5.371 (.05)
(Constant)	6.10467			

All variables are in the equation.

TABLE 14

MULTIPLE REGRESSION FOR ABILITY SCORE OF FEMALE PROFESSIONS

SUMMARY TABLE

Variable	Multiple R	R Square	R Square Change	Simple R
Counselor Sex	0.02535	0.00064	0.00064	-0.02535
M/F Rating of Female Professions	0.20928	0.04380	0.04316	0.20707

TABLE 15

SIMPLE REGRESSION FOR ABILITY SCORES OF INDIVIDUAL PROFESSIONS

Variable	Multiple R	R Square	Std. Error	B	Std. Error B	F
Dentist	0.16178	0.02617	0.68534	0.12555	0.00699	3.225
(Constant)				6.73507		
Dietician	0.03503	0.00123	0.95044	-0.23826	0.00620	0.147
(Constant)				6.3732		
Emergency Med. Tech.	0.09836	0.00957	1.02466	0.69136	0.00639	1.172
(Constant)				5.15164		
Med. Social Worker	0.20093	0.04037	.95016	0.13893	0.00618	5.048 (.05)
(Constant)				6.13644		
Operating Room Tech.	0.26702	0.07130	1.09244	0.15048	0.00496	9.213 (.05)
(Contant)				4.9991		

Cont.

TABLE 15

SIMPLE REGRESSION FOR ABILITY SCORES OF INDIVIDUAL PROFESSIONS

Variable	Multiple R	R Square	Std. Error	B	Std. Error B	F
Orthotist	0.22758	0.05179	0.94143	0.12696	0.00496	6.554 (.05)
(Constant)				5.74045		
Pharmacist	0.23332	0.05444	0.85313	0.199507	0.00759	6.909 (.05)
				6.08538		
Physical Therapist	0.02920	0.00085	0.97929	0.19324	0.00604	0.102
(Constant)				6.82126		
Speech Pathologist	0.11033	0.01217	0.96918	0.71020	0.00584	1.479
(Constant)				6.52828		

df	
Regression	1
Residual	120

Hypothesis 2 was developed to describe the relationship between the perception of percentage of males in the profession, student's sex and student advising. It thus links together the left-hand and right-hand sides of the model. Hypothesis 2 was tested using a t-test of the means of the M/F scores of the most often and the least often selected careers for each of the student profiles. Pearson's coefficient of correlation was then calculated for those student profiles with significant t values in order to determine the degree of correlation between M/F scores of the most often selected professions and the frequency of their selection (expressed as a selection score). The selection score was constructed in the following manner.

Frequency distributions were constructed on the 1st, 2nd, and 3rd choice career selection for each of the twelve different profiles. A 1st choice career selection was weighted: 3; a 2nd choice career selection was weighted: 2; a 3rd choice career selection was weighted: 1. A selection score was then calculated for each of the nine professions in Section II of the questionnaire. The selection score was computed by multiplying the frequency with which each profession was selected as 1st, 2nd or 3rd choice by the particular weight and then adding the three numbers together. Professions that were popular choices and were selected more often, received high scores. Professions that were less popular and chosen less often received low scores. Table 16 illustrates how the selection score was calculated for pharmacist for Profile 1.

The nine professions in Section I of the questionnaire were then placed in rank order by their selection score. The list of scores was

TABLE 16
CALCULATION OF SELECTION SCORE OF PHARMACIST FOR PROFILE 1

Frequency	Weight [*]	Weight by Frequency
10	3	30
7	2	14
5	1	5

Selection Score = 49^{**}

- * 3 Points = First Choice
- 2 Points = Second Choice
- 1 Point = Third Choice

^{**} Selection score is equal to the sum of the Frequency by Weight column.

then divided at the point where the largest difference between the numbers occurred. T-tests for significance were performed between the mean M/F score of the most popular and the least popular professions selected for each profile. In each case the mean M/F scores were calculated for the nine professions using only the ratings of the subjects who received that particular profile. The selection scores of the nine professions, the corresponding M/F score (expressed in 'percentage male'), and the point of division between the most selected and the least selected careers is illustrated in Table 17 for all twelve profiles.

The results of the t-tests for significance showed a significant difference between the means of M/F scores of most often and least often selected professions for profiles 1, 2, 3, 6, 7, 8, 9, and 10. These were black and white high-ability males, and high-ability black females; average-ability white males and all average-ability females; and low-ability males. This difference was significant at the .025 level of probability for profiles 1, 2, 3, 6, 7, 8 and 10 and at the .01 level of probability for Profile No. 9 (see Tables 18, 19, 20).

The product-moment coefficient of correlation (r) and the variance shared by the two variables (r^2) was calculated for the M/F scores and the career selection scores for those student profiles where $p < .025$ (for a one-tailed-test) for the t-test for significance (see Table 21).

The coefficient of correlation r was first calculated using all nine professions and then re-calculated using only those professions whose mean ability scores were within 2 standard deviations of the mean ability score of that particular student profile. In this way, ability level of both the student and the profession was controlled. The degree

TABLE 17

WEIGHTED CAREER* SELECTION SCORES AND MALE/FEMALE (M/F) SCORE + FOR TWELVE STUDENT PROFILES.

Career	Profile No. 1		Career	Profile No. 2		Career	Profile No. 3	
	Selection Score	M/F Score		Selection Score	M/F Score		Selection Score	M/F Score
Pharm	49	69.6	Pharm	65	71.1	Dent	47	85.3
Dent	40	81.9	Dent	61	85.1	Pharm	46	69.4
Orth	16	76.2	PT	31	50.6	PT	29	46.6
PT	16	52.3	Orth	18	71.4	MSW	19	36.9
MSW	16	37.3	SP	9	33.1	SP	15	34.1
SP	9	34.6	MSW	9	30.3	Diet	9	25.0
ORT	7	38.8	Diet	6	18.0	EMT	8	75.6
EMT	2	73.1	EMT	5	74.6	Orth	6	75.9
Diet	2	24.2	ORT	4	34.6	ORT	3	35.3

* Pharm - Pharmacist
 Dent - Dentist
 Orth - Orthotist
 PT - Physical Therapist

MSW - Medical Social Worker
 SP - Speech Pathologist
 ORT - Operating Room Technician
 EMT - Emergency Medical Technician
 Diet - Dietician (Clinical)

+ M/F Score expressed
 in per cent male

Cont.

TABLE 17

WEIGHTED CAREER* SELECTION SCORES AND MALE/FEMALE (M/F) SCORE + FOR TWELVE STUDENT PROFILES.

Profile No. 4			Profile No. 5			Profile No. 6		
Career	Selection Score	M/F Score	Career	Selection Score	M/F Score	Career	Selection Score	M/F Score
Pharm	43	66.6	EMT	31	73.6	EMT	43	71.3
MSW	30	34.1	PT	29	50.0	PT	29	48.3
PT	26	51.4	Orth	25	72.4	Orth	26	70.3
SP	25	30.0	ORT	23	39.2	MSW	22	37.3
Dent	25	84.8	Diet	11	24.0	ORT	21	40.0
EMT	12	72.8	Pharm	10	69.6	SP	15	37.0
Diet	12	23.4	Dent	7	84	Pharm	8	70.6
ORT	1	38.3	MSW	7	35.6	Dent	5	84.6
Orth	0	75.9	SP	2	31.2	Diet	5	22.3

* Pharm - Pharmacist
 Dent - Dentist
 Orth - Orthotist
 PT - Physical Therapist

MSW - Medical Social Worker
 SP - Speech Pathologist
 ORT - Operating Room Technician
 EMT - Emergency Medical Technician
 Diet - Dietician (Clinical)

+ M/F Score expressed in per cent male

Cont.

TABLE 17

WEIGHTED CAREER* SELECTION SCORES AND MALE/FEMALE (M/F) SCORE + FOR TWELVE STUDENT PROFILES.

Profile No. 7			Profile No. 8			Profile No. 9		
Career	Selection Score	M/F Score	Career	Selection Score	M/F Score	Career	Selection Score	M/F Score
EMT	40	76.8	EMT	42	75	EMT	23	75
ORT	36	32.1	ORT	35	31.8	ORT	11	31.8
MSW	34	32.6	PT	32	50.5	Diet	8	22.5
SP	27	31.5	Diet	27	22.5	PT	3	50.0
PT	25	52.9	MSW	26	31.1	MSW	2	31.1
Diet	23	19.7	SP	23	31.7	SP	0	31.8
Orth	6	76.5	Orth	10	73.2	Orth	0	73.2
Pharm	5	68.5	Dent	0	84.5	Pharm	0	71.1
Dent	0	84.4	Pharm	0	68.4	Dent	0	81.8

* Pharm - Pharmacist
 Dent - Dentist
 Orth - Orthotist
 PT - Physical Therapist

MSW - Medical Social Worker
 SP - Speech Pathologist
 ORT - Operating Room Technician
 EMT - Emergency Medical Technician
 Diet - Dietician (Clinical)

+ M/F Score expressed in per cent male

Cont.

TABLE 17

WEIGHTED CAREER* SELECTION SCORES AND MALE/FEMALE (M/F) SCORE + FOR TWELVE STUDENT PROFILES.

Profile No. 10			Profile No. 11			Profile No. 12		
Career	Selection Score	M/F Score	Career	Selection Score	M/F Score	Career	Selection Score	M/F Score
EMT	38	71.8	ORT	31	37.8	EMT	21	74.6
ORT	18	36.8	EMT	28	75.9	ORT	20	40.5
Diet	9	24	PT	6	49.4	PT	4	56.8
PT	5	47.0	Orth	5	73.4	MSW	4	32.3
Orth	3	75.5	MSW	3	36.3	Orth	3	76.8
SP	0	33.5	SP	1	34.1	Diet	2	18.6
MSW	0	36.5	Diet	1	23.1	SP	0	31.8
Pharm	0	67.8	Pharm	0	68.4	Pharm	0	70.9
Dent	0	83.0	Dent	0	88.1	Dent	0	85.0

* Pharm - Pharmacist
 Dent - Dentist
 Orth - Orthotist
 PT - Physical Therapist

MSW - Medical Social Worker
 SP - Speech Pathologist
 ORT - Operating Room Technician
 EMT - Emergency Medical Technician
 Diet - Dietician (Clinical)

+ M/F Score expressed in per cent male

TABLE 18

MEAN SELECTION SCORES AND COMPARISONS OF M/F SCORES
 OF MOST POPULAR AND LEAST POPULAR CAREER CHOICES
 High Ability Students

Profile	Student	Mean Career Selection Score	N	Mean * M/F Rating	S.D.	
#1	Black Male	Most Popular	44.5	2	75.8] **	8.69
		Least Popular	13.6	7			48.1 ] **	19.95
#2	White male	Most Popular	63	2	78.1] **	9.9
		Least Popular	11.7	7			44.7 ] **	21.6
#3	Black Female	Most Popular	46.5	2	77.4] **	11.24
		Least Popular	12.7	7		
#4	White Female	Most Popular	29.8	5	53.4] n.s.	22.8
		Least Popular	6.3	4			52.6 ] n.s.	25.9

* Mean expressed in per cent male

** $p. < .025$ for one-tailed-test

TABLE 19
 MEAN SELECTION SCORES AND COMPARISONS OF M/F SCORES
 OF MOST POPULAR AND LEAST POPULAR CAREER CHOICES
 Average Ability Students

Profile	Student	Mean Career Selection Score	N	Mean * M/F Rating	S.D.		
#5	Black Male	Most Popular	27	4	58.8	] n.s.	8.49
		Least Popular	7.4	5	48.9			11.74
#6	White male	Most Popular	24.5	1	71.3	] **	0
		Least Popular	8.25	8	51.3			21.45
#7	Black Female	Most Popular	30.8	6	40.9	] **	20.6
		Least Popular	3.6	3	76.5			7.95
#8	White Female	Most Popular	30.8	6	40.4	] **	19.21
		Least Popular	3.3	3	73.2			4.78

* Mean expressed in per cent male

** $p. < .025$ for one-tailed-test

TABLE 20
 MEAN SELECTION SCORES AND COMPARISONS OF M/F SCORES
 OF MOST POPULAR AND LEAST POPULAR CAREER CHOICES
 Low Ability Students

Profile	Student	Mean Career Selection Score	N	Mean * M/F Rating	S.D.		
#9	Black Male	Most Popular	23	1	75	] **	0
		Least Popular	3	8	49.2			23.2
#10	White male	Most Popular	38	1	71.8	] +	0
		Least Popular	4.5	8	50.5			21.9
#11	Black Female	Most Popular	29.2	2	56.9	] n.s.	26.9
		Least Popular	2.3	7	53.3			23.9
#12	White Female	Most Popular	20.5	2	57.5	] n.s.	24.1
		Least Popular	1.9	7	53.2			25.8

* Mean expressed in per cent male

** p. < .01 for one-tailed-test

+ p. < .025 for one-tailed-test

TABLE 21

DEGREE OF CORRELATION BETWEEN M/F SCORES AND CAREER SELECTION SCORES

Profile #		1	2	3	6	7	8	9	10
Ethnicity		Black	White	Black	White	Black	White	Black	White
Sex		Male	Male	Female	Male	Female	Female	Male	Male
All Professions	Pearsons r	.50	.56	.39	.12	-.49	-.44	.01	.08
	r ²	.25	.32	.15	.002	.24	.19	.001	.006
Professions within ±2 S.D. of student ability	Pearsons r	.49	.66	.48	.51	-.34	-.44	.67	*
	r ²	.24	.44	.23	.26	.11	.19	.45	

* No professions' ability rating was within ±2 S.D. of the ability rating of profile 10.

of correlation between the M/F scores and the career selection scores is illustrated in Table 21. The coefficients of correlation were highest in a positive direction for profile 1($r = .50$), 2($r = .56$) and 3($r = .39$).

These profiles represented high-ability black males, high-ability white males and high-ability black females, respectively. The highest correlations in a negative direction were obtained for profiles 7($r = -.49$) and 8($r = -.44$). These profiles represented average-ability black females and average-ability white females. There was little correlation between M/F scores and career selection scores for profiles 6($r = .12$), 9($r = .01$) and 10($r = .08$). These profiles were average-ability white males and low-ability black males.

Thus, Hypothesis 2 was partially supported in that there was a positive correlation between the perceived male/female ratio of a profession (expressed in M/F score as 'percent male') and the likelihood of that profession being selected as a career to be investigated by the student (selection score) for those profiles which represented high-ability males (both white and black) and high-ability black females. There was also a negative correlation between the perceived male/female ratio of the professions and the career selection score for average-ability females (both white and black).

Hypothesis 3 was developed to test the interaction of students' sex and ability and their relationship to counselors' perceptions of percentage male of the profession. Hypothesis 3 serves to link the two sides of the model and tests the indirect influence of student sex on student advising through student ability. Hypothesis 3 was tested using a two-way analysis of variance employing a 2 by 3 design with two

categories for sex and three categories for ability (see Table 22). Significant F-values were obtained for the main effects of sex and ability. However, there was no significant interaction effect between sex and ability therefore Hypothesis 3 was rejected and the null hypothesis was not rejected. T-tests for significance were performed between the mean of the M/F scores of the three ability levels to identify the sources of the significant F-value for ability. There was a significant difference between the means of the M/F scores of high- and average-ability students and between the means of average- and low-ability students (see Table 23).

Hypothesis 4 described an interaction between students' sex and ethnic background and their influence on student advising as related to percentage of males in the profession. This hypothesis also links together the two sides of the model. Hypothesis 4 was tested using a two-way analysis of variance employing a 2 x 2 design with two categories for ethnicity and two for sex. No significant F-values were obtained for either the main effects of ethnicity and sex or for the interaction effects of the two variables (see Table 24). Therefore the null hypothesis was not rejected and hypothesis 4 was rejected.

Hypothesis 5 deals with only the left side of the model: counselors' perception of the student. It tests the interaction between students' sex and ethnic background and their relationship to students' ability. The Chi-square statistic was used to test hypothesis 5. A 2 x 2 x 3 contingency table was constructed using 2 categories each for ethnicity and sex of student and 3 categories for ability (see Table 25). The Chi-square statistic was not significant, therefore hypothesis

TABLE 22

ANOVA FOR STUDENT ABILITY BY SEX AND M/F SCORE OF CAREER SELECTIONS

Source	DF	SS	MS	F
Between Ability	2	697.2	348.6	5.6 (.05)
Between Sex	1	907.1	907.1	14.6 (.01)
Interaction Sex x Ability	2	84.7	42.4	.68 (n.s.)
Residual	6	373.8	62.3	
Total	11	2064.1		

TABLE 23

MEAN SCORES AND COMPARISONS OF M/F SCORES BY ABILITY LEVEL

Ability Level	Mean M/F Score ⁺ of Career Choices
High	71.1
Average	52.8 (.10)
Low	65.3

⁺ Mean expressed in per cent male

* $p < .05$ for one-tailed test

** $p < .10$ for one-tailed test

TABLE 24

ANOVA FOR ETHNICITY BY SEX AND M/F SCORE OF CAREER SELECTIONS

	DF	SS	MS	F	
Between Ethnicity	1	12.6	12.6	.09	
Between Sex	1	907.1	907.1	6.98	(.05)
Interaction Ethnicity x Sex	1	104.9	104.9	.80	
Residual	8	1039.5	129.9		
Total	11	2064.1			

TABLE 25

CONTINGENCY TABLE OF STUDENT ABILITY RATINGS VS. ETHNIC BACKGROUND AND SEX OF STUDENT

Ability Ratings	Black		White		
	Male	Female	Male	Female	
1-3	14 (.18)	14 (.15)	16 (.16)	10 (.12)	54
4-6	36 (.47)	44 (.46)	52 (.50)	42 (.50)	174
7-9	27 (.35)	38 (.39)	35 (.34)	32 (.38)	132
	77	96	103	84	n=360

df = 5

 $\chi^2 = 1.9$ (n.s.)

5 was rejected and the null hypothesis was not rejected.

DISCUSSION

Although the hypotheses tested in this study were largely unsupported, some significant results were obtained, and interesting trends noted. Counselors' perceptions of the percentage of males and females working in a particular allied health field explained only a small percentage of the variance in the ability ratings of these professions, however, their perceptions did influence their selection of career choices for students. Taking each individual profile, the male/female rating of the most popular choices differed significantly from the ratings of the careers not chosen in eight of the twelve profiles.

Sex of the student was the most significant factor related to the male/female rating of the careers selected for students to investigate. Careers selected for males were perceived to have a higher percentage of male workers than those selected for females. Ability-level of the student was also significant when the M/F ratings of the careers chosen were partitioned according to sex of student. Professions perceived to have a higher dominance of females (or low M/F score) were more often chosen for average-ability students than for either high- or low-ability students. The low M/F scores attributed to the average-ability level were due in most part to the low scores given to average-ability females.

These findings support the previously reported literature regarding sexual bias in counseling (Schlossberg and Pietrosfesa, 1973; Donahue, 1976). They would also seem to support the findings of

Schwartz 1974 in regard to the existence of both sex role and ability-level bias. However, there was no evidence that counselors' sex was a significant factor in this bias in contrast to earlier findings by Pearsons (1972) and Mercado and Atkinson (1982).

Although there were no overall significant difference in the variance of the means of male/female scores of the careers chosen due to ethnicity or its interaction with sex or ability when all student profiles were considered together; the difference between scores of careers chosen and those not chosen for each student varied for black and white students as well as for males and females; and the variance was different within each ability-level.

In the high-ability profiles, careers perceived to have a high percentage of males were most often chosen for black and white males, and black females; and there was a significant difference in the M/F scores of the careers chosen and those not chosen. There was no difference in the ratings of the careers chosen for high-ability white females and those not chosen. Also, the percentage of males to females was perceived to be more equally distributed for the careers chosen for the white females.

This finding may be viewed from two perspectives. On one hand, counselors may have chosen more male-dominated (and possibly more prestigious) careers for black females in an effort to overcome racial bias that may have existed in the past in the health-care field and therefore encourage more high-ability blacks to investigate these areas regardless of whether they were males or females. On the other hand, counselors may be more sensitive to sex-role stereotyping as it relates

to high-ability females (in particular, white females) due to the publicity this issue has received from studies, legislation, counselor training programs, etc. (Moore and Strickler, 1980; Harway, 1980), and made an effort to choose careers for them based on ability considerations only, so there was no preference demonstrated for male or female dominated careers for these women.

This trend changed in the average-ability level. There was no significant difference between the M/F scores of the careers chosen and those not chosen for black males and the careers chosen were perceived to have only a slight dominance of male workers. The careers chosen for white males were perceived to have a dominance of male workers. There was a significant difference between the M/F scores of the careers chosen and those not chosen, but the degree of correlation between the M/F scores and the selection score (of the career) was quite small in this instance. There was a significant difference in the M/F scores of the careers selected and those not selected for both black and white females. There was a negative correlation between the percentage of males perceived to be working in the field and the selection score for the career.

So, while there was a difference in the way in which high-ability white and black females were advised, this difference disappeared at the average-ability level. Just the opposite however, was true for males. High-ability black and white males were treated the same but average-ability males were treated differently. The M/F scores of high-ability black females more closely resembled those of the high-ability males and the M/F scores of average-ability black males more closely resembled

those of the average-ability females. Another way to look at the situation is that although the trend was for lower M/F scores for the careers selected for average-ability students the careers selected for white males at this level were still those perceived to be high in male dominance.

Low-ability level males had a significant difference between the careers selected for them and those that were not selected; however, the correlation between the M/F scores and the selection scores was almost non-existent. Careers perceived to have a high percentage of male workers were selected for both black and white males and careers perceived to be dominated by women were selected for both black and white females.

In general, careers selected for males were male dominated and careers selected for females were female dominated across ability levels. The only exceptions being high-ability black females and average-ability black males. The mean M/F scores for selected careers for all students at each ability-level was lowest for average-ability students (with the exception of average ability white males) and highest for high-ability students.

Another interesting finding was the degree of correlation between M/F scores and career selection scores when the eight profiles that showed a significant difference in the M/F scores of selected and not-selected careers were examined. It seemed reasonable to assume that some professions may have received low selection scores because the perceived ability-level of the profession did not match that of the student being considered in spite of the male or female dominance of the

profession. This would suggest that if ability of the professions was controlled, the degree of correlation between the two scores would increase. While this was true for high-ability white males and black females, average-ability white males and low-ability black males, it was not true for high-ability black males or average-ability females (either black or white). This would suggest that there was more bias involved in the selection of careers for the first group and that there was less bias involved in the selection of careers for the latter group.

Limitations of the Study

In the interpretation and/or generalization of the results of this study, several factors must be taken into consideration. The major one is the use of a mail survey. Time and expense of videotapes, and personal interviews prohibited their use as methods of data collection; however, mail surveys have certain inherent drawbacks, the most serious drawback being the lack of response. The response rate for usable questionnaires in this study was only 34%. Fifty-two percent of the non-respondents were APGA members and 48% were IACAC members.

The question of bias is an issue in the interpretation of the data since self-selection was a factor. Follow-up letters and questionnaires were sent to non-responding subjects after the initial mailing but no further effort was made to increase the response rate due to the expense involved. Overall, 49% of questionnaires were returned but 15% were eliminated because they were improperly completed, or returned too late. A number of the incomplete questionnaires contained notes from the subjects stating that they no longer worked in a counseling position,

counseling was no longer their primary responsibility, or they no longer worked in an academic setting so they did not feel that they would be the best subjects for the study. A number of the questionnaires that were returned late contained notes that the questionnaire arrived while they were on vacation.

Another limiting factor is the geographic distribution of the sample. A state population was chosen due to the unavailability of local mailing lists from local school boards and the lack of cooperation from one of the boards in obtaining permission to carry out the study. Eighty-eight percent of the subjects selected from the two mailing lists used were from the Chicago metropolitan area (zip codes 601 through 606) and the remaining 12% were from outside of the Chicago area. However, only 71% of the respondents were from the Chicago area and the remaining 29% were from outside of the Chicago area.

Another limiting factor was the lack of information on the sexual composition of the subjects drawn from the population since it was not known at that time what the influence of the subjects' sex would be on this study. An approximation was made based only on the names of the subjects at 55% male and 45% female. The respondents were 46% male, 43% female, and 11% did not indicate their sex. No accurate figures could be obtained on the numbers of counselors working in private and parochial schools in the state making it impossible to estimate the total Illinois counselor population let alone its sexual breakdown.

Another limiting factor resulted from the investigator's perception of the necessity of including written descriptions of the careers involved in the study due to the general lack of knowledge that the

public has concerning allied health careers. Some counselors may have felt that they had adequate knowledge of the careers and chose not to use it although the knowledge they had may or may not have been accurate. Other counselors may have used the booklet and completed the questionnaire based on the information contained therein in addition to any prior information that they may have had.

Finally, the use of simulated student profiles has obvious limitations. Several subjects commented that in an actual advising situation other student characteristics such as specific interests, motivation, personality, etc, were important factors in predicting the success of students and were thus important to the counseling session. Also, counselors may respond differently to a simulated situation than they would in an actual counseling session. While this study may have resulted in some statistically significant results and allowed the researcher to exercise certain controls, its generalizability is limited.

SUMMARY

Of the five research hypotheses tested, only the one relating the counselor's perceptions of the percentage of males in selected health professions to the number of times the professions are selected for male students was partially supported. The hypotheses were tested using multiple regression, t-tests, coefficient of correlation, and chi-square statistic.

The sex and ability of the student emerged as the most significant variables in the selection of careers by counselors. Although the perception of the percentage of males working in the field did not

influence counselors' perception of the ability-level of the profession, it did influence their choice of careers for students. Males had predominantly male professions selected for them more often than did females have predominantly male professions selected for them. Students of average-ability had careers selected for them that had higher percentages of females than did either high- or low-ability students. For high-ability white males and black females, average-ability white males and low-ability black males, the degree of correlation between male/female ratings of the careers and their selection as career choices (and therefore the degree of bias) increased when ability of the careers and the students' ability were more closely matched. For all ability levels however, the effect of ethnic background was negligible. Limiting factors in interpreting the findings include possible bias resulting from self-selection, geographic distribution, sexual composition of the population from which the sample was drawn, unequal knowledge among the subjects of allied health careers and the use of simulated student profiles.

SUMMARY AND CONCLUSIONS

The problem of the influence of counselor's sex-role stereotyping on the advising of high school students was the focus of this study. Sex-role stereotyping in career counseling is evidenced to the extent that counselors' advice is influenced by the sex of their students. This investigation was narrowed to counselors' use of sex-role stereotyping in advising high school students to investigate allied health careers. The researcher was specifically interested in the advising of black males.

Blacks and other ethnic minorities are under represented in allied health and other health professions. Males can also be considered as minorities in allied health professions due to the dominance of female workers in these areas. Blacks and other minority males are therefore highly sought after as minority recruitment for health professions educational programs continues to be a priority. It is anticipated that an increase in the number of minorities trained as health professionals will result in an increase in the quality of health-care in minority communities.

Due to the extent of research literature on sex-role stereotyping against females during career counseling, the investigator decided that stereotyping may also exist to a large extent against males who are interested in allied health careers. To investigate this problem the researcher made the assumption that counselors would evidence their bias in two areas.

The first area of consideration was the counselors' perception of certain student variables. The relevant student variables chosen by the

researcher were the students' sex, ethnic background, and academic ability in science and math courses. The second area of consideration was the counselors' perception of certain allied health professions. The relevant variables chosen by the researcher were the percentage of males and females working in the profession and the ability level that an individual would need to enter the profession.

A model was conceptualized to describe the relationship of these variables to each other and their relationship to student advising. The researcher assumed that counselors' perception of the percentage of males working in selected allied health professions would influence both their perception of the level of ability required to enter the field and their advice to male (particularly minority) students with an interest in health careers. The researcher also assumed that the sex and ethnic background of the student also influences student advising directly and indirectly through their impact upon the counselors' perception of the students' academic ability. Five research hypotheses describing the relationships between the variables in this model were considered relevant for testing.

A correlational survey research design was used to test the hypotheses. The survey was mailed to 360 Illinois high school counselors. An additional 30 counselors were used in a pilot survey to establish the reliability and validity of the questionnaire. The counselors were selected through random sampling using a table of random numbers on mailing lists of members of the American Personnel and Guidance Association and the Illinois Association of College Admissions Counselors. The subjects were counselors working in both public and

private high schools throughout the state. Only those respondents who indicated that counseling was their primary responsibility or indicated that they counseled at least 100 students per year were included in the analysis of the data.

The questionnaire developed for the survey consisted of three parts. The first part was entitled, "Health Career Evaluation". This section utilized Likert-type scales--ranging from 100% to 0%--to obtain counselor ratings of the percentage of males and females working in each of nine health professions. Rating scales ranging from nine (high-ability) to one (low-ability) were used to record their perception of the level of ability needed to enter each profession. A booklet entitled, "Descriptions of Selected Health Careers" was developed and enclosed with the questionnaire. It provided the subjects with an accurate description of the careers included in Part I in the event they were unfamiliar with any one of them. Part II of the questionnaire consisted of three student profiles, a rating scale for ability, and a list of the nine professions from Part I. The profiles represented three different academic ability-levels (high, average, and low) through the variation of the levels and grades of science and math courses completed, SAT scores, teacher comments, etc. The three different student profiles were further diversified by varying the sex and ethnic backgrounds of the students. Each subject received one profile at each ability level; however, the sex and ethnic background of the student were randomly decided. The subjects were asked to review the profiles, rate their ability, and make a first, second and third choice career recommendation for each one. Part III of the questionnaire collected

demographic information on the subjects, their schools, and their students.

The validity of the student profiles was established through consensus of ratings of subjects who participated in the pilot survey. The ability levels of the students were also confirmed through the construction of the interval estimates of the mean ability ratings from the final survey. The validity of the career descriptions used in the booklet enclosed with the survey was established through review by health professionals and an academic advisor for health careers prior to the survey. Overall and split-half reliability coefficients of .99 were obtained for the rating scales in Parts I and II of the questionnaire.

The questionnaire, career description booklet, and cover letter were mailed to subjects with a stamped, return envelope. A follow-up mailing was sent to all non-respondents approximately two weeks after the initial mailing. The investigator received 177 returns. Of these 177, 122 were considered to be complete, for a return rate of 34%. Fifty-two percent of the completed returns were from APGA members, 48% were from IACAC members. Forty-six percent of the completed returns were from males, 43% were from females, and 11% did not indicate their sex. Returns were considered to be incomplete for one or more of the following reasons: questionnaire returned with no responses, improperly completed, more than one response per item, returned after cut-off date; respondents primary responsibility was not counseling and he/she counseled less than 100 students per year.

Of the five research hypotheses tested, the one relating counselors' perception of the percentage of males in selected health

professions to the numbers of times the professions were selected for male students was partially supported (Hypothesis 2) and four were unsupported. The hypotheses were tested using multiple regression analysis, Pearson's coefficient of correlation, t-tests, two-way analysis of variance, and chi-square. Although the hypotheses were for the most part unsupported, there were some statistically significant results and some interesting trends.

Counselors' perceptions of the percentage of males and females working in a particular field (M/F score) explained only a small percentage of the variance in the ability ratings of these professions. Counselors' perceptions of the percentage of male and female workers in the field did however influence their choice of careers for the students in the profiles. There was a significant difference between the mean M/F scores of those professions chosen and those not chosen for eight of twelve student profiles. Those profiles having significant differences were: high-ability males, high-ability black females, average-ability white males, average-ability females, and low-ability males.

Another interesting finding was the degree of correlation between the M/F scores and career selection scores for the seven student profiles that showed a significant difference in M/F scores of most often selected and least often selected careers. Controlling for the ability-level of the profession, the degree of correlation between the two scores was increased for all except high-ability black males and average-ability females (either black or white). This would suggest that there was less bias involved in the selection of careers for these latter students than for the other students.

In generalizing these findings, consideration must be given to the possibility of bias resulting from self-selection since non-respondents were not interviewed subsequently. Another major consideration is the use of simulated student profiles since important student characteristics are omitted and counselors may respond to profiles differently than would actual students. Other limitations include geographic distribution of the sample, lack of information on the sexual composition of the population from which the sample was drawn, and possible bias caused by some counselors having more or less knowledge concerning allied health careers than other subjects.

Conclusions

The sex of the student was the most significant student variable related to the M/F score of the careers selected. Careers selected for males were perceived to have a higher percentage of male workers than those selected for females. Ability of the student was also significant. Professions perceived to have a higher dominance of females were more often chosen for average-ability students than for either high- or low-ability students with a few exceptions. One exception to this trend was seen with high-ability black females who were treated similar to high-ability males and the careers chosen for them were perceived to have a high percentage of male workers. Another exception was average-ability males. Average black males were treated similar to the average-females in that more female dominated professions were selected for them. On the other hand, average white males had careers selected for them that were highly male dominated even though the trend for all other

average-ability students was the selection of female dominated careers.

The implications of these results for the recruitment of black males into female dominated allied health careers are two-fold. First of all, if consideration is limited to students with a potential for success (average- and high-ability students), counselors demonstrate less bias toward male dominated careers when advising average students. This would suggest that average black males are more readily advised toward allied health careers than are high-ability black males. This is further supported by the finding that there was no significant difference between the M/F scores of the careers most often and those least often selected for average black males while there was a significant difference for high-ability black males.

Secondly, there was a positive correlation between M/F scores and career selection scores for high ability black males, however, this correlation did not change when the ability level of the career choices was controlled. This would suggest that career selections were based more on consideration of ability than bias compared to the selections made for high-ability black females and white males for whom the correlation increased, after controlling for ability. This would suggest that if allied health professions seemed to require high-ability, they would be selected more often for these students. Since the ability ratings of the professions were not biased by the counselors' perception of the percentage of males in the field, an increase in the counselors' perception of the ability needed to enter allied health careers should enhance the image of the careers regardless of the predominance of women in the field.

Finally, increased participation of males will enhance male recruitment since careers with a high percentage of males were more often selected for male students. This would suggest that increased visibility of males working in the allied health field would benefit recruitment efforts.

Efforts to increase the cooperation of counselors in recruiting black males could include the development of seminars, workshops, etc. aimed at counselors to increase their perception of the complexity of allied health careers and their knowledge concerning higher level allied health careers requiring specialized training and/or advanced degrees. Faculty in counselor education programs should also use as many male health professionals as possible to increase counselors' exposure to them.

Future research into barriers to recruitment of minority males into allied health schools and the work force can focus on several areas. The collection of data on males who are presently in the field can be undertaken to gather information on what attracted them to the field in spite of the predominance of women. A survey of prospective minority students and their families might be useful to find out what benefits they anticipate from the careers they are considering. This information can then be used in public relations campaigns by allied health college recruiters and professional organizations. Finally, a field project can be developed to offer career counselors a continuing education program whereby they can obtain "hands on", practical exposure to allied health careers much in the same way prospective students are exposed to these professions in career awareness programs. A survey of

counselors to determine their interests, available time, benefits they would anticipate, etc. could be done to assess the need for the program. Once the need has been established, a pilot program could be designed in the form of a pre-, post-test research model. A change in the amount of practical knowledge of various professions, sources of information (such as professional organizations), the number of minority students referred to allied health college recruiters, etc., can be the measurement of success of the experimental treatment as opposed to changes in attitude which are more difficult to demonstrate.

The benefits resulting from the materials developed for this study are severalfold. The booklet entitled, "Selected Health Careers" will be used, after revisions, by the University of Illinois at Chicago, College of Associated Health Professions, Urban Health Program. The booklets will be used in conjunction with already existing brochures that describe the college's undergraduate programs and specific college requirements. The booklets will be available to prospective students and their counselors. The revised booklets will include allied health professions with educational training programs in Illinois.

The increase in awareness of allied health professions among counselors, students, and their families is imperative to insure the continued existence of a pool of qualified students with an interest in the field. Information on the availability of programs in Illinois will increase the likelihood that interested students will remain in Illinois after training and contribute to its pool of qualified health care personnel.

The ability rank of selected allied health professions in the

survey will be used as a barometer to identify those professions that require enhancement of their image. Where possible professional associations will be contacted to acquire additional public relations materials such as brochures, posters, audio-visuals, etc.

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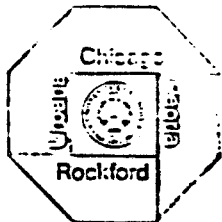
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APPENDIX A



Office of the Dean
 College of Associated Health Professions

University of Illinois at the Medical Center, Chicago
 808 South Wood Street, Chicago, Illinois 60612
 (312) 996-6695

January 13, 1982

Ms. Peggy Douglas
 American Personnel and Guidance Association
 Two Skyline Place, Suite 400
 Falls Church, Virginia 22041

Dear Ms. Douglas:

I am planning a survey of high school counselors to determine how closely the counselor's perception of certain careers parallels the actual characteristics of the profession and how these perceptions influence their career recommendations to "students" presented in written profiles.

This research is for my doctoral dissertation at Loyola University of Chicago and a first draft of the questionnaire is enclosed for your review. I would like to purchase a mailing list of APGA members who are employed as guidance counselors in high schools nationwide from which a random sample will be drawn.

It is my understanding that the list contains approximately 2,000 and will cost approximately \$150.00.

I appreciate your assistance in this matter. If you have any questions, you can contact me at (312) 996-2085.

Sincerely,

Patricia Walker, M.A., MT(ASCP)

PW:nns

March 26, 1982

Dear :

Your name was randomly chosen from a mailing list of counselors working in a high school setting in the State of Illinois.

I am conducting a pilot survey as part of a doctoral dissertation study. The purpose of the study is to determine counselors' perceptions of certain health professions and how these perceptions influence their career recommendations to students of varying abilities.

The enclosed questionnaire entitled "Health Career Evaluation" lists 20 health careers, each one followed by two rating scales. Please indicate your perception of the male/female ratio of the labor force in each field on Scale A and the ability-level needed to enter the field on Scale B.

Brief descriptions of the professions are provided in the enclosed booklet entitled "Selected Health Careers" in the event that you are unfamiliar with any one of them.

The questionnaire will take approximately fifteen minutes to complete and your participation will be greatly appreciated.

Please return the questionnaire in the envelope provided by April 1, 1982. Thank you in advance for your cooperation.

Sincerely,

Patricia Walker, M.A., M.T.(ASCP)

PW:nns

Enclosure

808 South Wood Street
Room 167 CME
Chicago, Illinois 60612

April 26, 1982

Dear

Your name was randomly chosen from a mailing list of counselors working in a high school setting in the State of Illinois.

I am conducting a pilot survey as part of a doctoral dissertation study. The purpose of the study is to determine counselors' perceptions of certain health professions and how these perceptions influence their career recommendations to students of varying abilities.

The enclosed questionnaire consists of profiles of six different high school students who have an interest in health careers.

Please review each profile and rate the student's ability on the scale provided.

The questionnaire will take approximately fifteen minutes to complete and your participation will be greatly appreciated.

Please return the questionnaire in the envelope provided by May 3, 1982. Thank you in advance for your cooperation.

Sincerely,

Patricia Walker, M.A., MT(ASCP)
College of Associated Health Professions

Enclosure

808 South Wood Street
Room 167 CME
Chicago, Illinois 60612

May 3, 1982

Dear

A week ago you were sent a questionnaire asking you to review six student profiles and to rate them on ability. Your name was randomly selected from a mailing list of counselors working in a high school setting in the State of Illinois.

As I previously indicated, this questionnaire is part of a pilot survey which is being undertaken for my doctoral dissertation study. My research is under the direction of the faculty of the School of Education of Loyola University of Chicago.

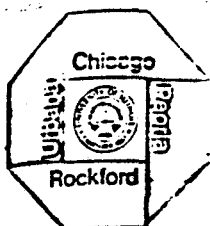
Your opinions are essential for the validation of the questionnaire to be used in my research on counselors' perceptions of certain health professions and how these perceptions influence their career recommendations to students of different abilities. Therefore, you are being sent this second questionnaire in the event that you misplaced the original one. Your response to all items will be kept confidential and your participation in this research will be greatly appreciated.

Please complete the questionnaire and return it in the enclosed envelope by May 11, 1982. Thank you in advance for your cooperation.

Sincerely,

Patricia Walker, M.A., MT(ASCP)
College of Associated Health Professions

Enclosure



Office of the Dean
College of Associated Health Professions

University of Illinois at the Medical Center, Chicago
808 South Wood Street, Chicago, Illinois 60612
(312) 996-6695

June 16, 1982

Your name was randomly chosen from a mailing list of counselors working in a high school setting in the State of Illinois.

I am conducting a survey as part of a doctoral dissertation study. The purpose of the study is to determine counselor's perceptions of certain health professions and how these perceptions influence their career recommendations to students of varying academic ability.

The enclosed questionnaire contains three sections with instructions for their completion. It will take approximately fifteen to twenty minutes to complete.

Your response to all items will be kept confidential and your participation in this research will be greatly appreciated.

Please return the questionnaire in the envelope provided by June 29, 1982.

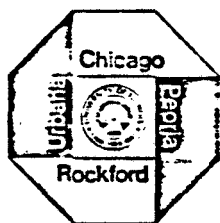
Thank you in advance for your cooperation.

Sincerely,

Patricia Walker, M.A., M.T. (ASCP)
College of Associated Health Professions

PW:nns

Enclosure



Office of the Dean
College of Associated Health Professions

University of Illinois at the Medical Center, Chicago
808 South Wood Street, Chicago, Illinois 60612
(312) 996-6695

June 30, 1982

Dear

A week ago you were sent a questionnaire asking you to rate certain health careers and match them with student profiles based on the academic ability of the student as presented in the profile.

As I indicated previously, this questionnaire is part of a survey which is being undertaken for my doctoral dissertation. My research is under the direction of the faculty of the School of Education of Loyola University of Chicago.

Your opinions are essential for my research on counselor's perceptions of certain health professions and how these perceptions influence their career recommendations to students of different academic abilities. Therefore, I am sending you this second questionnaire in the event that you misplaced the original one. Your response to all items will be kept confidential and your participation in this reach will be greatly appreciated.

Please complete the questionnaire and return it in the enclosed envelope by July 9, 1982.

Thank you in advance for your cooperation.

Sincerely,

Patricia Walker, M.A., MT(ASCP)
College of Associated Health Professions

PK:nns

Enclosure

Office Use Only

Sequence # _____

Study # 01

1-4

5-6

Health Career Evaluation

Please read over the following list of health careers and indicate your perception of the male/female ratio of the labor force on Scale A and the ability-level needed to enter the profession on Scale B.

Please base rate ability-level on the functions of the person working in the field and the educational preparation needed to enter the profession. Ability-level may also be based on any personal knowledge you may have of the competitiveness of admission into the health professions educational program.

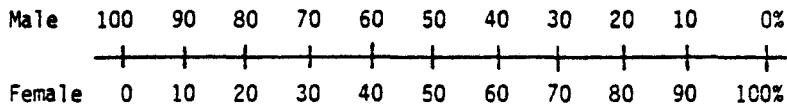
Brief descriptions of the professions are provided in the enclosed booklet entitled "Selected Health Careers" in the event you are unfamiliar with any one of them.

An example for completing Scales A and B is shown below.

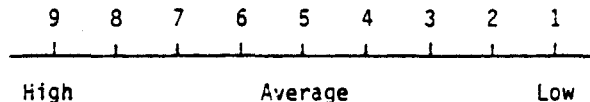
Example:

Electrical Engineer:

A. Male/Female Ratio in Percentages:



B. Ability-Level

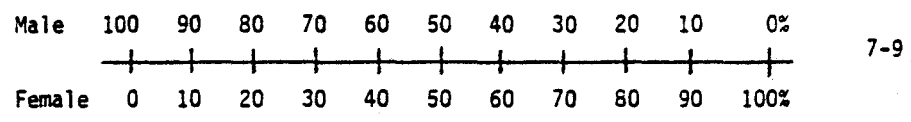


This indicates that the field of Electrical Engineering is made up of 90% males, 10% females and requires high ability.

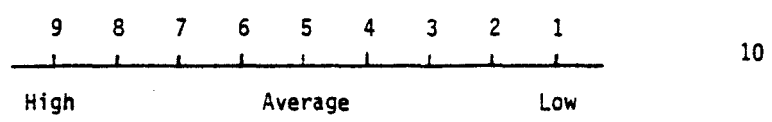
Circle the closest number on the scale to your answer, rather than making marks in between numbers on the scales.

1. Corrective Therapist:

A. Male/Female Ratio in Percentages:

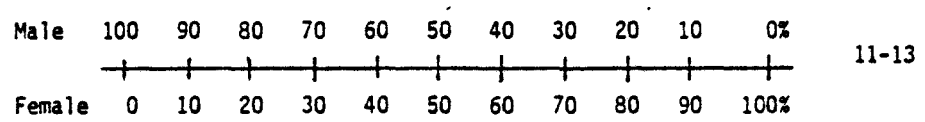


B. Ability-Level

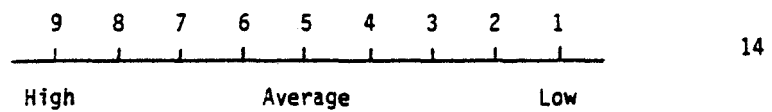


2. Cytotechnologist:

A. Male/Female Ratio in Percentages:

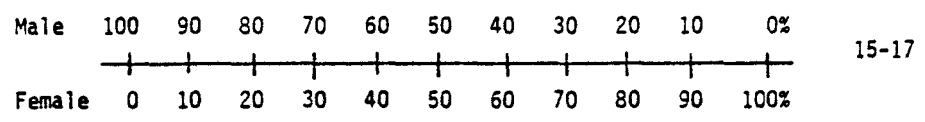


B. Ability-Level

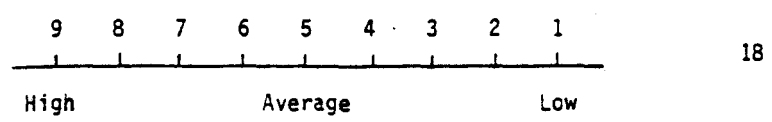


3. Dentist:

A. Male/Female Ratio in Percentages:

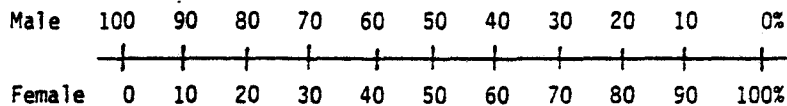


B. Ability-Level



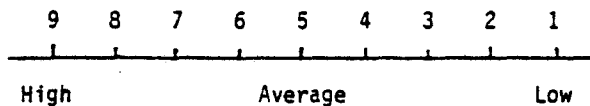
4. Dietician (Clinical):

A. Male/Female Ratio in Percentages:



19-21

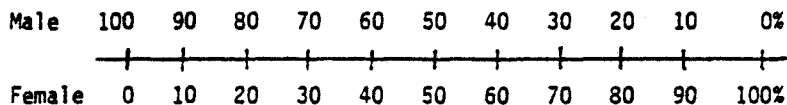
B. Ability-Level



22

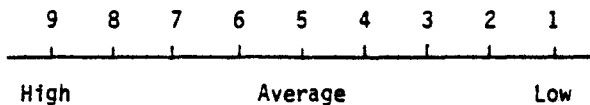
5. Electroencephalograph Technician:

A. Male/Female Ratio in Percentages:



23-25

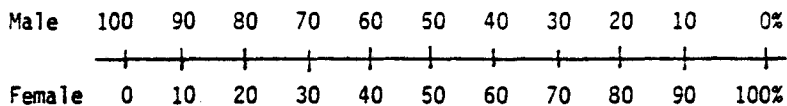
B. Ability-Level



26

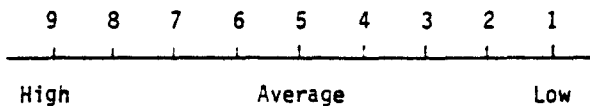
6. Emergency Medical Technician (EMT) - Paramedic:

A. Male/Female Ratio in Percentages:



27-29

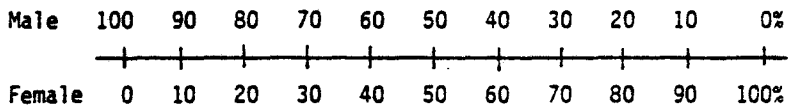
B. Ability-Level



30

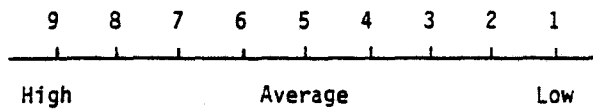
7. Medical Record Administrator:

A. Male/Female Ratio in Percentages:



31-33

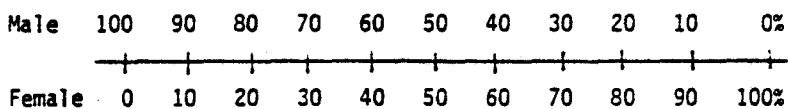
B. Ability-Level



34

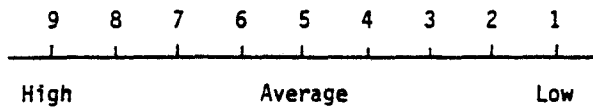
8. Medical Social Worker:

A. Male/Female Ratio in Percentages:



35-37

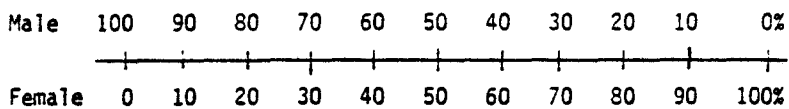
B. Ability-Level



38

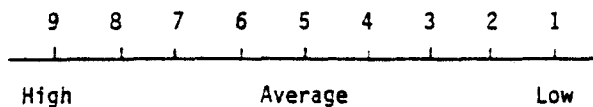
9. Medical Technologist:

A. Male/Female Ratio in Percentages:



39-41

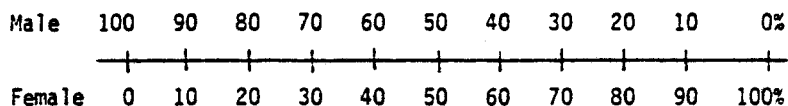
B. Ability-Level



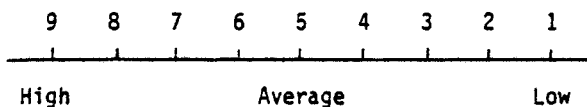
42

10. Occupational Therapist:

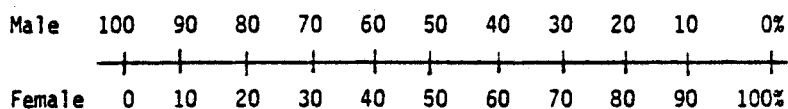
A. Male/Female Ratio in Percentages:



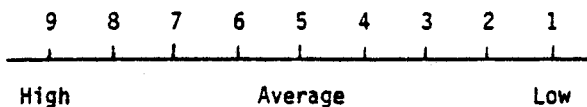
B. Ability-Level

11. Operating Room Technician:

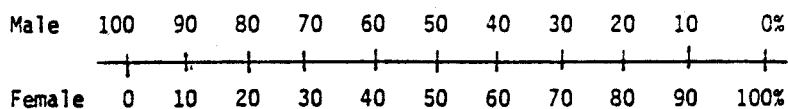
A. Male/Female Ratio in Percentages:



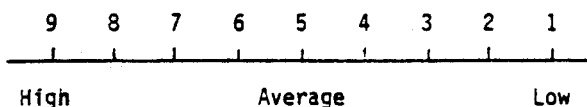
B. Ability-Level

12. Orthotist

A. Male/Female Ratio in Percentages:

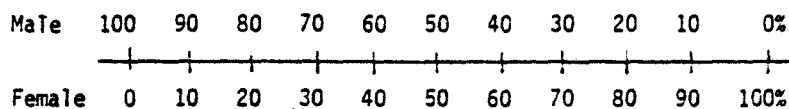


B. Ability-Level



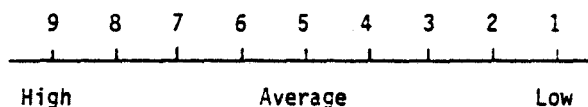
13. Perfusionist

A. Male/Female Ratio in Percentages:



55-57

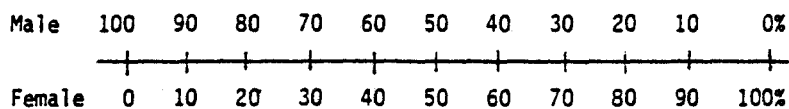
B. Ability-Level



58

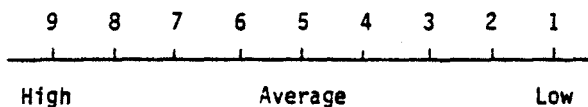
14. Pharmacist:

A. Male/Female Ratio in Percentages:



59-61

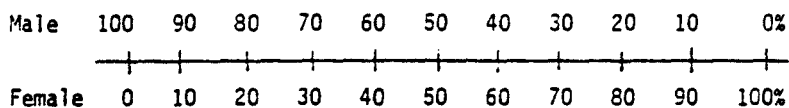
B. Ability-Level



62

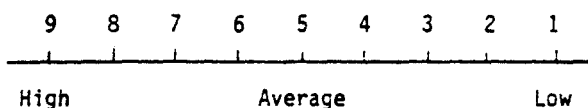
15. Physical Therapist:

A. Male/Female Ratio in Percentages:



63-65

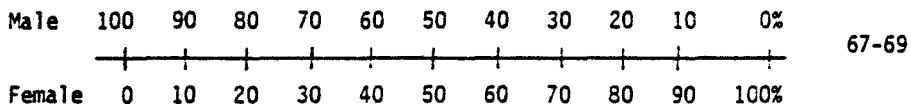
B. Ability-Level



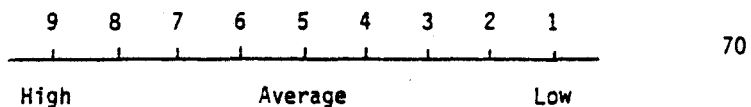
66

16. Physician's Assistant:

A. Male/Female Ratio in Percentages:

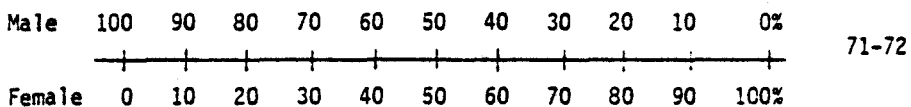


B. Ability-Level

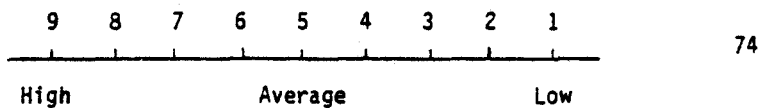


17. Radiation Therapy Technologist:

A. Male/Female Ratio in Percentages:

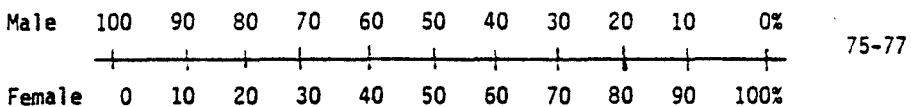


B. Ability-Level

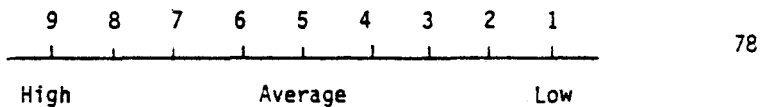


18. Respiratory Therapist:

A. Male/Female Ratio in Percentages:

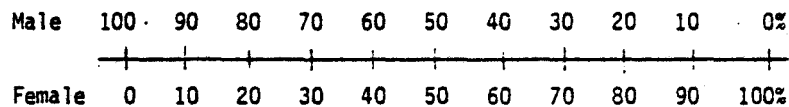


B. Ability-Level



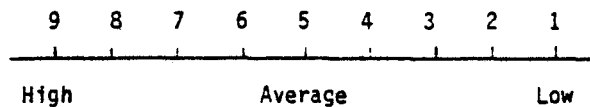
19. Rehabilitation Counselor:

A. Male/Female Ratio in Percentages:



79-81

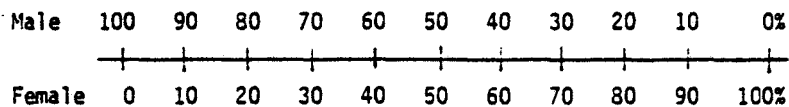
B. Ability-Level



82

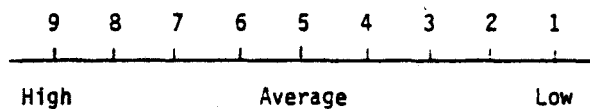
20. Speech Pathologist/Audiologist:

A. Male/Female Ratio in Percentages:



83-85

B. Ability-Level



86

Office Use Only	
Sequence #	
Study #	<u>02</u>

1 - 4
5 - 6

Student Ability Checklist

Please review the following high school student profiles and rate each as either a high-ability, average-ability, or low-ability student based on the information provided:

Profile #1

Age: 17

Year in School: Senior

+ Math/Science courses completed:	Biology	-	A
	Chemistry	-	B
	Honors Algebra	-	B
	Honors College Algebra/Trig.	-	B
	Geometry	-	A

SAT:	Verbal	590
	Math	<u>560</u>
	Reading	<u>59</u>
	Vocabulary	<u>60</u>

* Ohio Vocational Interest Score:	Health Sciences:	50
	Medical Services	48

Activities: Student Council, Chemistry Club, Student Newspaper

Part-Time Employment: Sales Clerk

Home-Room Teacher Comments: Hard worker, gets along well with other students, student leader

Attendance: Excellent

Please rate Profile #1 by circling one number only on the scale below:

9	8	7	6	5	4	3	2	1
High Ability			Average Ability			Low Ability		

7

Briefly state the rationale for your rating.

- + Course Levels are regular unless otherwise indicated.
- * The OVIS Interest Score is the primary score of the Ohio Vocational Interest Survey. The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

Profile #2

Age: 17

Year in School: Senior

+ Math/Science courses completed:	General Science	-	B
	Biology	-	C
	Chemistry	-	C
	Algebra 1	-	B
	Geometry	-	C

SAT:	Verbal	500
	Math	480
	Reading	53
	Vocabulary	51

* Ohio Vocational Interest Score:	Health Sciences:	54
	Medical Services	51

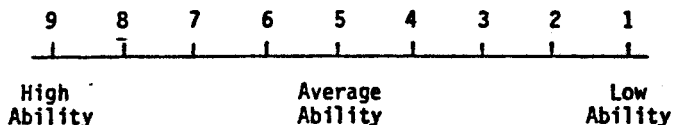
Activities: Softball Team, Band

Part-Time Employment: Park District, Recreational Leader

Home-Room Teacher Comments: Well liked by other students, good student.

Attendance: Good

Please rate Profile #1 by circling one number only on the scale below:



8

Briefly state the rationale for your rating.

Course Levels are regular unless otherwise indicated.

The OVIS Interest Score is the primary score of the Ohio Vocational Interest Survey. The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

Profile #3

Age: 17

Year in School: Senior

+ Math/Science courses completed:	General Science	-	C
	Biology	-	C
	Math I	-	C
	Pre-Algebra	-	C
	Algebra	-	D

SAT:	Verbal	410
	Math	400
	Reading	43
	Vocabulary	41

* Ohio Vocational Interest Score:	Health Sciences:	50
	Medical Services	49

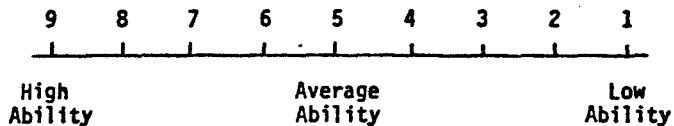
Activities:

Part-Time Employment:	Works part-time in family-owned dry cleaning business
-----------------------	---

Home-Room Teacher Comments:	Seems disinterested, could work harder
-----------------------------	--

Attendance:	Absent often
-------------	--------------

Please rate Profile #1 by circling one number only on the scale below:



9

Briefly state the rationale for your rating.

Course Levels are regular unless otherwise indicated.

The OVIS Interest Score is the primary score of the Ohio Vocational Interest Survey. The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

Profile #4

Age: 17
Year in School: Senior

+ Math/Science courses completed: Algebra - A
Geometry - B
College Algebra/Trigonometry - B
Pre-Calculus Currently Enrolled
Biology - A
Chemistry - A

SAT: Verbal 530
Math 570
Reading 54
Vocabulary 52

* Ohio Vocational Interest Score: Health Sciences: 50
Medical Services 47

Activities: Intramural Volleyball, Honor Society

Part-Time Employment: Cashier at fast food restaurant

Home-Room Teacher Comments: Excellent student, achieves well
without a lot of effort

Attendance: Except for absence due to minor
surgery, attendance has been good.

Please rate Profile #1 by circling one number only on the scale below:

9 8 7 6 5 4 3 2 1
| | | | | | | | |
High Average Low
Ability Ability Ability

10

Briefly state the rationale for your rating.

Course Levels are regular unless otherwise indicated.

The OVIS Interest Score is the primary score of the Ohio Vocational Interest Survey. The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

Profile #5

Age: 17

Year in School: Senior

+ Math/Science courses completed:	Algebra	-	B
	Geometry	-	C
	College Algebra/Trigonometry	-	B
	Biology	-	B
	Chemistry	-	C

SAT:	Verbal	470
	Math	490
	Reading	46
	Vocabulary	48

* Ohio Vocational Interest Score:	Health Sciences:	45
	Medical Services	40

Activities: President - Spanish Club

Part-Time Employment: None

Home-Room Teacher Comments: Conscientious, bright student, always willing to help with special projects.

Attendance: Average

Please rate Profile #1 by circling one number only on the scale below:

9	8	7	6	5	4	3	2	1
High Ability			Average Ability			Low Ability		

11

Briefly state the rationale for your rating.

Course Levels are regular unless otherwise indicated.
 The OVIS Interest Score is the primary score of the Ohio Vocational Interest Survey. The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

Profile #5a

Age: 17
Year in School: Senior

+Math/Science courses completed:	Physical Science	-	D
	Biology	-	D
	Math I	-	D
	Math II	-	C
	Pre-Algebra	-	C

SAT:	Verbal	310
	Math	<u>330</u>
	Reading	<u>30</u>
	Vocabulary	<u>30</u>

*Ohio Vocational Interest Score:	Health Sciences:	45
	Medical Services:	40

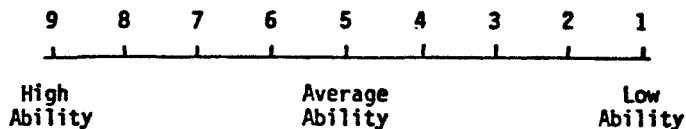
Activities: Intramural softball

Part-Time Employment: Work-study program - messenger at university hospital

Home-Room Teacher Comments: Pleasant personality, responsible, puts a lot of effort into work.

Attendance: Good.

Please rate Profile #5 by circling one number only on the scale below:



Briefly state the rationale for your rating:

+Course levels are regular unless otherwise indicated.

*The OVIS Interest Score is the primary score of the Ohio Vocational Interest Survey. The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

Profile #6

Age: 17

Year in School: Senior

+ Math/Science courses completed:	Basic Math	-	C
	Physical Science	-	D
	Biology	-	C
	Pre-Algebra	-	C
	Chemistry	-	D

SAT:	Verbal	330
	Math	360
	Reading	41
	Vocabulary	39

* Ohio Vocational Interest Score:	Health Sciences:	48
	Medical Services	45

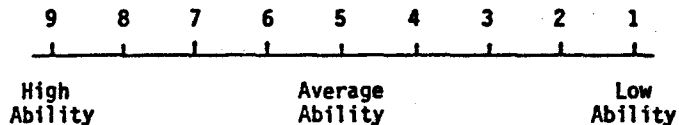
Activities: Photographer - School Yearbook

Part-Time Employment: None

Home-Room Teacher Comments: Could be better student if more time were spent on studies.

Attendance: Good

Please rate Profile #1 by circling one number only on the scale below:



12

Briefly state the rationale for your rating.

Course Levels are regular unless otherwise indicated.

The OVIS Interest Score is the primary score of the Ohio Vocational Interest Survey. The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

Profile # 6 a

Age: 17

Year in School: Senior

+Math/Science courses completed:	Basic Math I	-	C
	Math II	-	C
	Pre-Algebra	-	D
	General Science	-	D
	Biology	-	F

SAT:	Verbal	330
	Math	<u>360</u>
	Reading	41
	Vocabulary	<u>39</u>

*Ohio Vocational Interest Score:	Health Sciences:	48
	Medical Services:	45

Photographer - School Yearbook

None

Home-Room Teacher Comments: Could be better student if more time were spent on studies

Attendance: Good

Please rate Profile #6 by circling one number only on the scale below:

9	8	7	6	5	4	3	2	1
High Ability			Average Ability			Low Ability		

Briefly state the rationale for your rating:

+Course levels are regular unless otherwise indicated.

*The OVIS Interest Score is the primary score of the Ohio Vocational Interest Survey. The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

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Sequence # _____

Study # 03

1-4

5-6

Section I

Health Career Evaluation

Please read over the following list of health careers and indicate your perception of the male/female ratio of the labor force on Scale A and the ability-level needed to enter the profession on Scale B.

Please base the ability-level rating on the functions of the person working in the field and the educational preparation needed to enter the profession. Ability-level may also be based on any personal knowledge you may have of the competitiveness of admission into the health professions educational program.

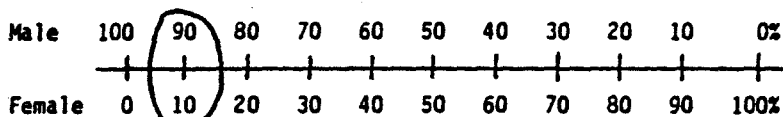
Brief descriptions of the professions are provided in the enclosed booklet entitled "Selected Health Careers" in the event you are unfamiliar with any one of them.

An example for completing Scales A and B is shown below.

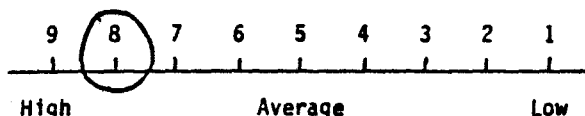
Example:

Electrical Engineer:

A. Male/Female Ratio in Percentages:



B. Ability-Level

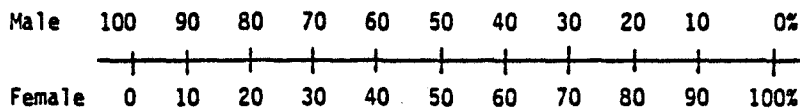


This indicates that the field of Electrical Engineering is made up of 90% males, 10% females and requires high ability.

Circle the closest number on the scale to your answer, rather than making marks in between-numbers on the scales.

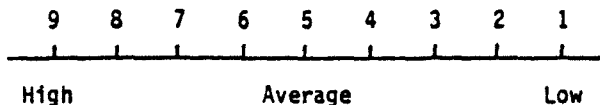
1. Dentist:

A. Male/Female Ratio in Percentages:



7-9

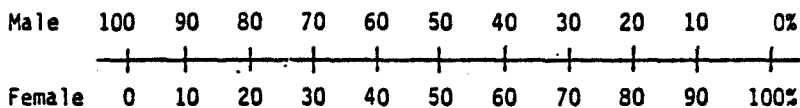
B. Ability-Level



10

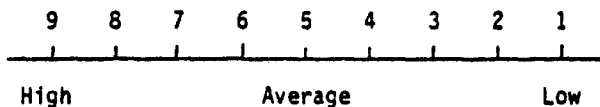
2. Dietician (Clinical):

A. Male/Female Ratio in Percentages:



11-13

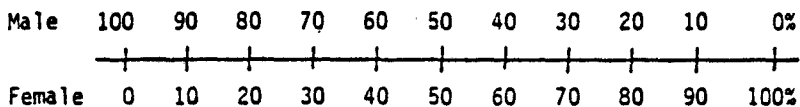
B. Ability-Level



14

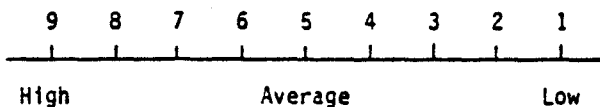
3. Emergency Medical Technician (EMT) - Paramedic:

A. Male/Female Ratio in Percentages:



15-17

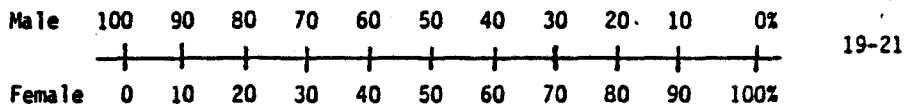
B. Ability-Level



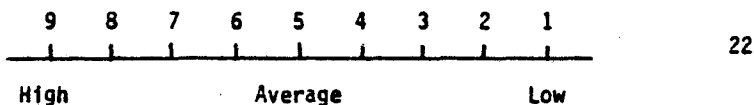
18

4. Medical Social Worker:

A. Male/Female Ratio in Percentages:

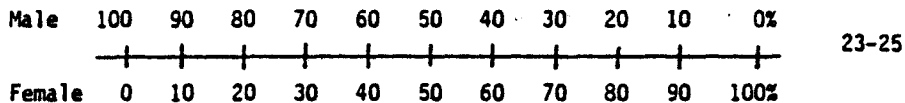


B. Ability-Level

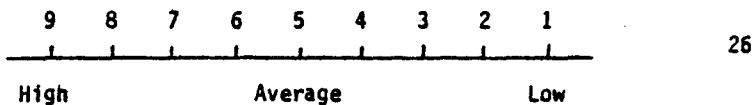


5. Operating Room Technician:

A. Male/Female Ratio in Percentages:

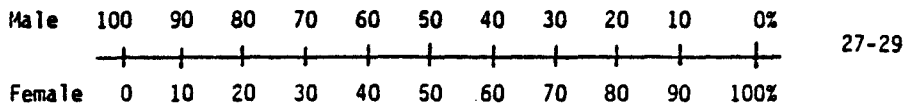


B. Ability-Level

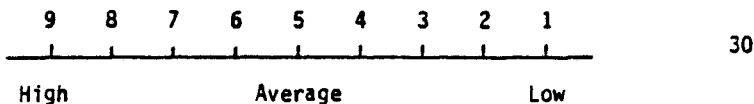


6. Orthotist

A. Male/Female Ratio in Percentages:

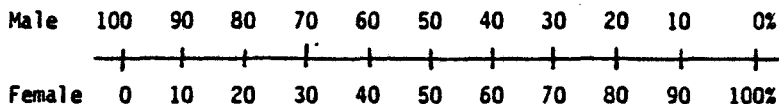


B. Ability-Level



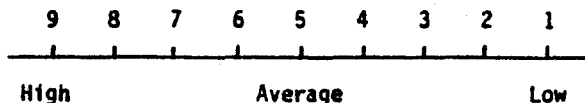
7. Pharmacist:

A. Male/Female Ratio in Percentages:



31-33

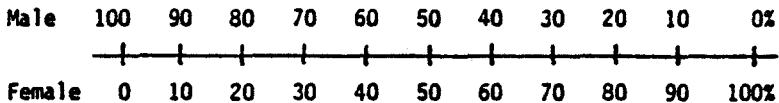
B. Ability-Level



34

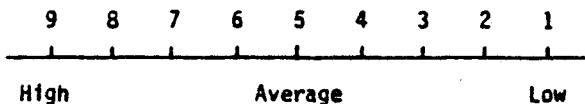
8. Physical Therapist:

A. Male/Female Ratio in Percentages:



35-37

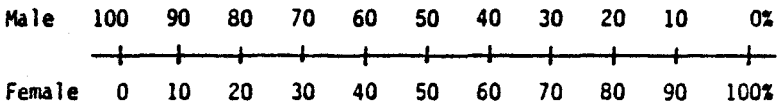
B. Ability-Level



38

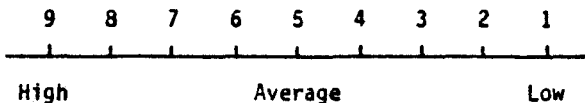
9. Speech Pathologist/Audiologist:

A. Male/Female Ratio in Percentages:



39-41

B. Ability-Level



42

Section II

Student Profiles

Please review the following high school student profiles and based on the information provided about the student's academic record, select three professions for students to investigate as possible career choices from the list provided.

The course levels indicated in the Profiles are Regular unless otherwise specified.

The Ohio Vocational Interest Score is the primary score of the Ohio Vocational Interest Survey (OVIS). The highest possible score is 55 (high interest in the field) and the lowest possible score is 11 (low interest in the field).

Profile No. 1

43

Name: Robert
 Age: 17
 Year in School: Senior

 Ethnic Background
 X Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed: Biology - A
 Chemistry - B
 Honors Algebra - B
 Honors College Algebra/Trig. - B
 Geometry - A

SAT: Verbal 590
 Math 560
 Reading 59
 Vocabulary 60

Ohio Vocational Interest Score: Health Sciences 50
 Medical Services 48

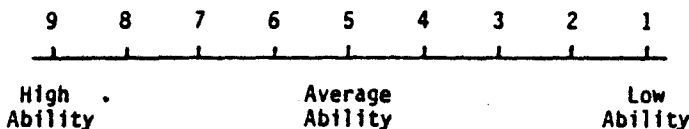
Activities: Student Council, Chemistry Club,
 Student Newspaper

Part-Time Employment: Sales Clerk

Home-Room Teacher Comments: Hard worker, gets along well with
 other students, student leader.

Attendance: Excellent.

Please rate the above Profile by circling one number only on the scale below:



44

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- Orthotist 1
- Emergency Medical Technician 2
- Physical Therapist 3 1st choice 45
- Speech Pathologist 4
- Pharmacist 5 2nd choice 46
- Dietician 6
- Operating Room Technician 7 3rd choice 47
- Dentist 8
- Medical Social Worker 9
- Student has low probability for success
 in any of the above professions . . .10

Profile No. 5

48

Name: James
 Age: 17
 Year in School: Senior

Ethnic Background
 Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed: General Science - B
 Biology - C
 Chemistry - C
 Algebra I - B
 Geometry - C

SAT: Verbal 500
 Math 480
 Reading 53
 Vocabulary 51

Ohio Vocational Interest Score: Health Sciences 54
 Medical Services 51

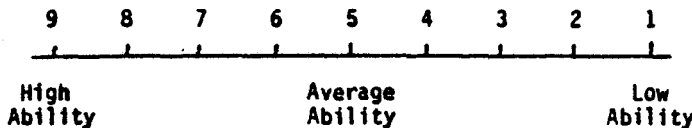
Activities: Softball Team, Band

Part-Time Employment: Park District, Recreational Leader

Home-Room Teacher Comments: Well liked by other students, good student.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



49

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- | | | | |
|---|----|-------|---------------|
| Orthotist | 1 | | |
| Emergency Medical Technician | 2 | | |
| Physical Therapist | 3 | _____ | 1st choice 50 |
| Speech Pathologist | 4 | | |
| Pharmacist | 5 | _____ | 2nd choice 51 |
| Dietician | 6 | | |
| Operating Room Technician | 7 | _____ | 3rd choice 52 |
| Dentist | 8 | | |
| Medical Social Worker | 9 | | |
| Student has low probability for success in any of the above professions . . . | 10 | | |

Profile No. 9

53

Name: Bernard
 Age: 17
 Year in School: Senior

Ethnic Background
 Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed:

Basic Math	-	C
Physical Science	-	D
Biology	-	C
Pre-Algebra	-	C
Chemistry	-	D

SAT:

Verbal	330
Math	<u>360</u>
Reading	<u>41</u>
Vocabulary	<u>39</u>

Ohio Vocational Interest Score:

Health Sciences	48
Medical Services	45

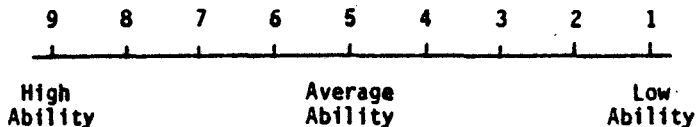
Activities: Photographer - School Yearbook

Part-Time Employment: None

Home-Room Teacher Comments: Could be better student if more time were spent on studies.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



54

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- | | | | |
|--|----|-------|---------------|
| Orthotist | 1 | | |
| Emergency Medical Technician | 2 | | |
| Physical Therapist | 3 | _____ | 1st choice 55 |
| Speech Pathologist | 4 | | |
| Pharmacist | 5 | _____ | 2nd choice 56 |
| Dietician | 6 | | |
| Operating Room Technician | 7 | _____ | 3rd choice 57 |
| Dentist | 8 | | |
| Medical Social Worker | 9 | | |
| Student has low probability for success
in any of the above professions | 10 | | |

Section III
Demographic Information

Please circle one code number for each question unless otherwise instructed.

14. In what type of school do you work?
- | | | | |
|----|----------------------------------|---|----|
| A. | General High School | 1 | |
| | Vocational High School | 2 | 58 |
| | Industrial/Trade | 3 | |
| | Other (Specify) _____ | 4 | |
| B. | Public | 1 | |
| | Private | 2 | 59 |
15. How many years have you worked in a counseling position?
- | | | | |
|--------------------------------|--|---|----|
| 1 to 5 | | 1 | |
| 6 to 10 | | 2 | 60 |
| 11 to 15 | | 3 | |
| Longer than 15 years | | 4 | |
16. Is counseling your primary responsibility?
- | | | | |
|---------------|--|---|----|
| Yes | | 1 | |
| No | | 2 | 61 |
17. What percentage of your time is spent in counseling students? (If you are employed part-time, e.g. 50%, and all of that time is spent counseling students, indicate 100%.)
- | | | | |
|-----------------------|--|---|----|
| 0% to 25% | | 1 | |
| 26% to 50% | | 2 | 62 |
| 51% to 75% | | 3 | |
| 76% to 100% | | 4 | |

Please use the following codes for answering questions No. 18 and No. 19

- 0% to 25% 1
- 26% to 50% 2
- 51% to 75% 3
- 76% to 100% 4

18. Indicate the racial make-up of the student-body which you counsel by placing the appropriate code number in the space provided.

- A. Hispanic _____ 63
- B. Asian/Pacific Islander _____ 64
- C. Black (Not Hispanic) _____ 65
- D. White _____ 66
- E. American Indian _____ 67
- F. Other (Specify) _____ 68

19. Indicate the proportion of male and female students that you counsel.

- A. Male _____ 69
- B. Female _____ 70

20. What is your sex

- Male 1 71
- Female 2

21. How many students do you counsel per year?

- Less than 100 1 72
- 100 - 499 2
- 500 - 999 3
- 1000 or more 4

22. What is your ethnic background?

- Hispanic 1 73
- Asian/Pacific Islander 2
- Black (Not Hispanic) 3
- White 4
- American Indian 5
- Other (Specify) _____ 6

STUDENT PROFILES

Profile No. 1

43

Name: Robert
 Age: 17
 Year in School: Senior

Ethnic Background
 Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed: Biology - A
 Chemistry - B
 Honors Algebra - B
 Honors College Algebra/Trig. - B
 Geometry - A

SAT: Verbal 590
 Math 560
 Reading 59
 Vocabulary 60

Ohio Vocational Interest Score: Health Sciences 50
 Medical Services 48

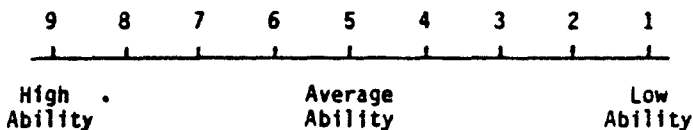
Activities: Student Council, Chemistry Club,
 Student Newspaper

Part-Time Employment: Sales Clerk

Home-Room Teacher Comments: Hard worker, gets along well with
 other students, student leader.

Attendance: Excellent

Please rate the above Profile by circling one number only on the scale below:



44

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- Orthotist 1
- Emergency Medical Technician 2
- Physical Therapist 3 ___ 1st choice 45
- Speech Pathologist 4
- Pharmacist 5 ___ 2nd choice 46
- Dietician 6
- Operating Room Technician 7 ___ 3rd choice 47
- Dentist 8
- Medical Social Worker 9
- Student has low probability for success
 in any of the above professions . . .10

Profile No. 2

43

Name: Robert
 Age: 17
 Year in School: Senior

 Ethnic Background
 Black (Not Hispanic)
 X White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed: Biology - A
 Chemistry - B
 Honors Algebra - B
 Honors College Algebra/Trig. - B
 Geometry - A

SAT: Verbal 590
 Math 560
 Reading 59
 Vocabulary 60

Ohio Vocational Interest Score: Health Sciences 50
 Medical Services 48

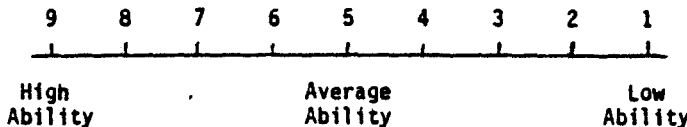
Activities: Student Council, Chemistry Club,
 Student Newspaper

Part-Time Employment: Sales Clerk

Home-Room Teacher Comments: Hard worker, gets along well with
 other students, student leader.

Attendance: Excellent

Please rate the above Profile by circling one number only on the scale below:



44

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- Orthotist 1
- Emergency Medical Technician 2
- Physical Therapist 3 1st choice 45
- Speech Pathologist 4
- Pharmacist 5 2nd choice 46
- Dietician 6
- Operating Room Technician 7 3rd choice 47
- Dentist 8
- Medical Social Worker 9
- Student has low probability for success
 in any of the above professions . . .10

Profile No. 3

43

Name: Roberta
 Age: 17
 Year in School: Senior

 Ethnic Background
 X Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed: Biology - A
 Chemistry - B
 Honors Algebra - B
 Honors College Algebra/Trig. - B
 Geometry - A

SAT: Verbal 590
 Math 560
 Reading 59
 Vocabulary 60

Ohio Vocational Interest Score: Health Sciences 50
 Medical Services 48

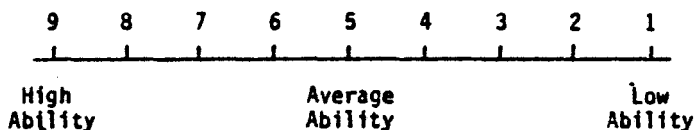
Activities: Student Council, Chemistry Club,
 Student Newspaper

Part-Time Employment: Sales Clerk

Home-Room Teacher Comments: Hard worker, gets along well with
 other students, student leader.

Attendance: Excellent

Please rate the above Profile by circling one number only on the scale below:



44

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- Orthotist 1
- Emergency Medical Technician 2
- Physical Therapist 3 1st choice 45
- Speech Pathologist 4
- Pharmacist 5 2nd choice 46
- Dietician 6
- Operating Room Technician 7 3rd choice 47
- Dentist 8
- Medical Social Worker 9
- Student has low probability for success
 in any of the above professions . . .10

Profile No. 4

43

Name: Roberta
 Age: 17
 Year in School: Senior

 Ethnic Background
 Black (Not Hispanic)
 X White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed: Biology - A
 Chemistry - B
 Honors Algebra - B
 Honors College Algebra/Trig. - B
 Geometry - A

SAT: Verbal 590
 Math 560
 Reading 59
 Vocabulary 60

Ohio Vocational Interest Score: Health Sciences 50
 Medical Services 48

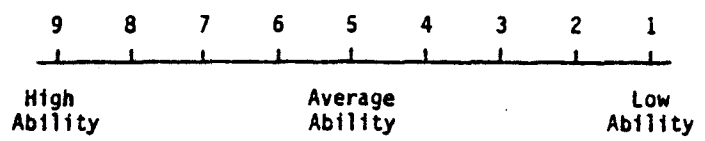
Activities: Student Council, Chemistry Club,
 Student Newspaper

Part-Time Employment: Sales Clerk

Home-Room Teacher Comments: Hard worker, gets along well with
 other students, student leader.

Attendance: Excellent

Please rate the above Profile by circling one number only on the scale below:



44

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- Orthotist 1
- Emergency Medical Technician 2
- Physical Therapist 3 _____ 1st choice 45
- Speech Pathologist 4
- Pharmacist 5 _____ 2nd choice 46
- Dietician 6
- Operating Room Technician 7 _____ 3rd choice 47
- Dentist 8
- Medical Social Worker 9
- Student has low probability for success
 in any of the above professions . . .10

Profile No. 5

48

Name: James
 Age: 17
 Year in School: Senior

Ethnic Background
 Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed: General Science - B
 Biology - C
 Chemistry - C
 Algebra I - B
 Geometry - C

SAT: Verbal 500
 Math 480
 Reading 53
 Vocabulary 51

Ohio Vocational Interest Score: Health Sciences 54
 Medical Services 51

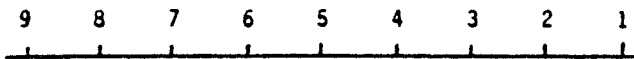
Activities: Softball Team, Band

Part-Time Employment: Park District, Recreational Leader

Home-Room Teacher Comments: Well liked by other students, good student.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



49

High Ability Average Ability Low Ability

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- Orthotist 1
- Emergency Medical Technician 2
- Physical Therapist 3 1st choice 50
- Speech Pathologist 4
- Pharmacist 5 2nd choice 51
- Dietician 6
- Operating Room Technician 7 3rd choice 52
- Dentist 8
- Medical Social Worker 9
- Student has low probability for success in any of the above professions . . .10

Profile No. 6

48

Name: James
 Age: 17
 Year in School: Senior

Ethnic Background
 _____ Black (Not Hispanic)
X White
 _____ Hispanic
 _____ Asian/Pacific Islander
 _____ Other _____

Math/Science Courses completed: General Science - B
 Biology - C
 Chemistry - C
 Algebra I - B
 Geometry - C

SAT: Verbal 500
 Math 480
 Reading 53
 Vocabulary 51

Ohio Vocational Interest Score: Health Sciences 54
 Medical Services 51

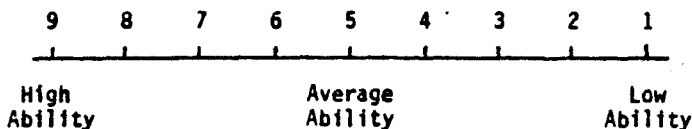
Activities: Softball Team, Band

Part-Time Employment: Park District, Recreational Leader

Home-Room Teacher Comments: Well liked by other students, good student.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



49

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- | | | | |
|---|----|-------|---------------|
| Orthotist | 1 | | |
| Emergency Medical Technician | 2 | | |
| Physical Therapist | 3 | _____ | 1st choice 50 |
| Speech Pathologist | 4 | | |
| Pharmacist | 5 | _____ | 2nd choice 51 |
| Dietician | 6 | | |
| Operating Room Technician | 7 | _____ | 3rd choice 52 |
| Dentist | 8 | | |
| Medical Social Worker | 9 | | |
| Student has low probability for success in any of the above professions . . . | 10 | | |

Profile No. 7

48

Name: Joan
 Age: 17
 Year in School: Senior

Ethnic Background
 Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other

Math/Science Courses completed: General Science - B
 Biology - C
 Chemistry - C
 Algebra I - B
 Geometry - C

SAT: Verbal 500
 Math 480
 Reading 53
 Vocabulary 51

Ohio Vocational Interest Score: Health Sciences 54
 Medical Services 51

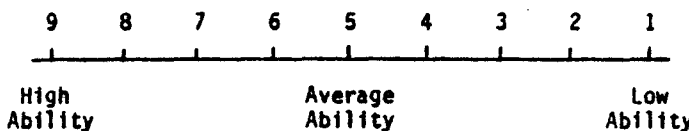
Activities: Softball Team, Band

Part-Time Employment: Park District, Recreational Leader

Home-Room Teacher Comments: Well liked by other students, good student.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



49

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- | | | | | | |
|--|----|-------|------------|--|----|
| Orthotist | 1 | | | | |
| Emergency Medical Technician | 2 | | | | |
| Physical Therapist | 3 | _____ | 1st choice | | 50 |
| Speech Pathologist | 4 | | | | |
| Pharmacist | 5 | _____ | 2nd choice | | 51 |
| Dietician | 6 | | | | |
| Operating Room Technician | 7 | _____ | 3rd choice | | 52 |
| Dentist | 8 | | | | |
| Medical Social Worker | 9 | | | | |
| Student has low probability for success
in any of the above professions | 10 | | | | |

Profile No. 8

48

Name: Joan
Age: 17
Year in School: Senior

Ethnic Background
— Black (Not Hispanic)
X White
— Hispanic
— Asian/Pacific Islander
— Other _____

Math/Science Courses completed: General Science - B
Biology - C
Chemistry - C
Algebra I - B
Geometry - C

SAT: Verbal 500
Math 480
Reading 53
Vocabulary 51

Ohio Vocational Interest Score: Health Sciences 54
Medical Services 51

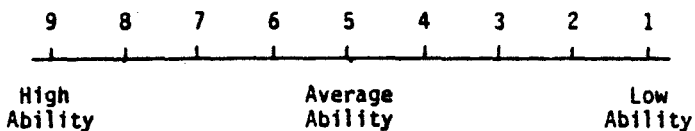
Activities: Softball Team, Band

Part-Time Employment: Park District, Recreational Leader

Home-Room Teacher Comments: Well liked by other students, good student.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



49

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- Orthotist 1
- Emergency Medical Technician 2
- Physical Therapist 3 _____ 1st choice 50
- Speech Pathologist 4
- Pharmacist 5 _____ 2nd choice 51
- Dietician 6
- Operating Room Technician 7 _____ 3rd choice 52
- Dentist 8
- Medical Social Worker 9
- Student has low probability for success in any of the above professions . . .10

Profile No. 9

53

Name: Bernard
 Age: 17
 Year in School: Senior

Ethnic Background
 Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other _____

Math/Science Courses completed:

Basic Math	-	C
Physical Science	-	D
Biology	-	C
Pre-Algebra	-	C
Chemistry	-	D

SAT:

Verbal	330
Math	<u>360</u>
Reading	<u>41</u>
Vocabulary	<u>39</u>

Ohio Vocational Interest Score:

Health Sciences	48
Medical Services	45

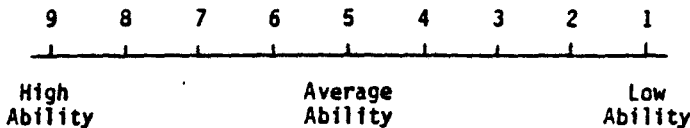
Activities: Photographer - School Yearbook

Part-Time Employment: None

Home-Room Teacher Comments: Could be better student if more time were spent on studies.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



54

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- | | | | |
|--|----|-------|---------------|
| Orthotist | 1 | | |
| Emergency Medical Technician | 2 | | |
| Physical Therapist | 3 | _____ | 1st choice 55 |
| Speech Pathologist | 4 | | |
| Pharmacist | 5 | _____ | 2nd choice 56 |
| Dietician | 6 | | |
| Operating Room Technician | 7 | _____ | 3rd choice 57 |
| Dentist | 8 | | |
| Medical Social Worker | 9 | | |
| Student has low probability for success
in any of the above professions | 10 | | |

Profile No. 10

53

Name: Bernard
 Age: 17
 Year in School: Senior

Ethnic Background
 Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other _____

Math/Science Courses completed:

Basic Math	-	C
Physical Science	-	D
Biology	-	C
Pre-Algebra	-	C
Chemistry	-	D

SAT:

Verbal	330
Math	<u>360</u>
Reading	<u>41</u>
Vocabulary	<u>39</u>

Ohio Vocational Interest Score:

Health Sciences	48
Medical Services	45

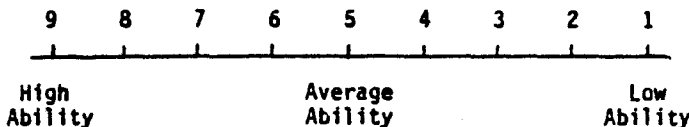
Activities: Photographer - School Yearbook

Part-Time Employment: None

Home-Room Teacher Comments: Could be better student if more time were spent on studies.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



54

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- | | | | |
|---|----|-------|---------------|
| Orthotist | 1 | | |
| Emergency Medical Technician | 2 | | |
| Physical Therapist | 3 | _____ | 1st choice 55 |
| Speech Pathologist | 4 | | |
| Pharmacist | 5 | _____ | 2nd choice 56 |
| Dietician | 6 | | |
| Operating Room Technician | 7 | _____ | 3rd choice 57 |
| Dentist | 8 | | |
| Medical Social Worker | 9 | | |
| Student has low probability for success in any of the above professions . . . | 10 | | |

Profile No. 11

53

Name: Bernice
 Age: 17
 Year in School: Senior

Ethnic Background
 Black (Not Hispanic)
 White
 Hispanic
 Asian/Pacific Islander
 Other _____

Math/Science Courses completed:

Basic Math	-	C
Physical Science	-	D
Biology	-	C
Pre-Algebra	-	C
Chemistry	-	D

SAT:

Verbal	330
Math	<u>360</u>
Reading	<u>41</u>
Vocabulary	<u>39</u>

Ohio Vocational Interest Score:

Health Sciences	48
Medical Services	45

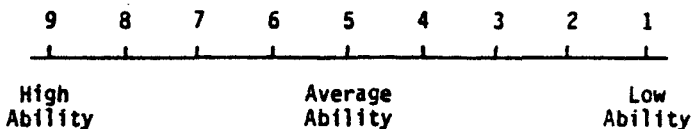
Activities: Photographer - School Yearbook

Part-Time Employment: None

Home-Room Teacher Comments: Could be better student if more time were spent on studies.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



54

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- | | | | | |
|--|----|-------|------------|----|
| Orthotist | 1 | | | |
| Emergency Medical Technician | 2 | | | |
| Physical Therapist | 3 | _____ | 1st choice | 55 |
| Speech Pathologist | 4 | | | |
| Pharmacist | 5 | _____ | 2nd choice | 56 |
| Dietician | 6 | | | |
| Operating Room Technician | 7 | _____ | 3rd choice | 57 |
| Dentist | 8 | | | |
| Medical Social Worker | 9 | | | |
| Student has low probability for success
in any of the above professions | 10 | | | |

Profile No. 12

53

Name: Bernice
 Age: 17
 Year in School: Senior

Ethnic Background
 ___ Black (Not Hispanic)
X White
 ___ Hispanic
 ___ Asian/Pacific Islander
 ___ Other _____

Math/Science Courses completed: Basic Math - C
 Physical Science - D
 Biology - C
 Pre-Algebra - C
 Chemistry - D

SAT: Verbal 330
 Math 360
 Reading 41
 Vocabulary 39

Ohio Vocational Interest Score: Health Sciences 48
 Medical Services 45

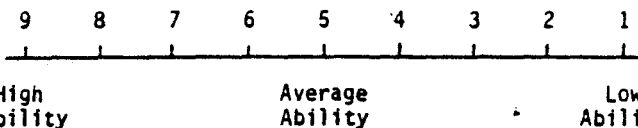
Activities: Photographer - School Yearbook

Part-Time Employment: None

Home-Room Teacher Comments: Could be better student if more time were spent on studies.

Attendance: Good

Please rate the above Profile by circling one number only on the scale below:



54

Please rank three of the following careers as 1st, 2nd, and 3rd choice, in the order that you would recommend them to the student by placing the appropriate code number in the space provided. If you would not advise the student to pursue any of the professions listed, place code #10 in the 1st choice space.

- | | | | |
|---|----|-------|---------------|
| Orthotist | 1 | | |
| Emergency Medical Technician | 2 | | |
| Physical Therapist | 3 | _____ | 1st choice 55 |
| Speech Pathologist | 4 | | |
| Pharmacist | 5 | _____ | 2nd choice 56 |
| Dietician | 6 | | |
| Operating Room Technician | 7 | _____ | 3rd choice 57 |
| Dentist | 8 | | |
| Medical Social Worker | 9 | | |
| Student has low probability for success in any of the above professions . . . | 10 | | |

APPENDIX B

SELECTED HEALTH CAREERS

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Corrective Therapist

Corrective therapists treat patients by using medically prescribed physical exercises and activities which strengthen and coordinate body functions and prevent muscular deterioration caused by inactivity due to illness. They apply the principles, tools, techniques and psychology of medically oriented physical education to help patients meet their treatment goals. Therapists design or adjust equipment and devise exercises to meet the needs of patients.

Corrective therapy is used mainly in the more advanced stages of rehabilitation where functional training is required and is not to be confused with physical therapy which employs physical agents such as heat, water, light, massage, and electricity in treatment routines and patient evaluation. Some corrective therapists choose areas of specialization such as driver training, cardio-respiratory rehabilitation, and therapeutic water activities.

Corrective therapists work in a variety of government (such as Veteran's Administration), public and private facilities including hospitals, rehabilitation clinics, special schools, nursing homes, and recreation facilities.

A career in corrective therapy requires a bachelor's degree in physical education and a 400 hour clinical internship. Courses taken as part of the degree requirements include neurology, pathology, therapeutic exercise, developmental psychology, and kinesiology. A master's degree is considered to be an asset in seeking both entry level and promotional positions.

Cytotechnologist

The cytotechnologist is a laboratory technologist who works under the direction of a pathologist. The cytotechnologist's prime responsibility is to detect cell changes caused by different disease processes.

Cytotechnologists prepare cell samples obtained from various body sites for microscopic examination through the use of special staining techniques. They then examine the samples under a microscope for abnormalities in the color, size, and shape of cells which can be the first warning signs of cancer or other diseases.

Most cytotechnologists work in a hospital, clinic, or private laboratory.

The educational preparation for cytotechnologist includes a high school diploma and 2 years of college with 12 semester hours in science with at least 8 semester hours in the biological sciences. Certified medical technologists or persons with a bachelor's degree in science are also eligible for admission into cytotechnology programs which consist of a 12 month course of classroom study and practical laboratory experience.

Dentist

Dentists are concerned with the prevention and treatment of problems associated with the gums and teeth. Their responsibilities include locating and filling cavities, straightening crooked teeth, performing extractions, treating gum and mouth diseases, as well as providing artificial teeth when necessary.

The majority of dentists are self-employed although they can also be found in salaried positions in hospitals, public health facilities, dental schools, health-maintenance organizations, etc. With additional specialty training, a dentist may specialize in such areas as oral pathology, oral surgery, orthodontics, periodontics, etc. Pre-professional education should emphasize courses in English, physics, chemistry and biological sciences.

Dental school curricula vary from 3 to 4 years. Applicants must have a minimum of 2 years of college course-work although many schools require 3 to 4 years of pre-requisite courses. The dental school curriculum includes basic health sciences such as anatomy, biochemistry and histology in addition to application of the health sciences to delivery of oral health services.

Dietician (Clinical)

Clinical dietitians specialize in the nutritional care of patients in a hospital, clinic or other health facility or through their own private practice.

They develop and implement plans based on the nutritional assessments of patients. They confer with physicians and other members of the health team and correlate the patient's nutritional care plan with other patient care plans.

Clinical dietitians also provide for the nutritional education of patients and their families and serve as advisors on nutritional care to all members of the health-care team. Dietitians can be found in a variety of private settings and government as well as providing consultation to a variety of clients through private practice.

The educational requirement includes a bachelor's degree from an integrated dietetics program (combining course work and clinical experience) or a bachelor's degree in dietetics, nutrition, home economics, etc. and a 6-12 month dietetic internship.

The undergraduate program includes courses in: chemistry of food, nutrition, statistics, biochemistry, physiology and behavioral science.

Electroencephalograph Technologist

The EEG technologist uses the electroencephalograph to measure and record the brain's electrical activity. The EEG is used by physicians to diagnose brain tumors, epilepsy, strokes or to judge the effects of head injuries or diseases of the brain.

EEG technologists take the medical history of the patient, explain procedures, attach electrodes and operate the EEG equipment. The technologist observes and records the behavior of the patient during testing and must be able to understand the tracings produced in order to differentiate false recordings due to faulty technique or machine error. After testing, the technologist provides a descriptive report of the tracing to the physician.

Educational preparation includes a high school education which includes courses in science and math followed by a 1 or 2 year program which includes course work in neurology, anatomy, neuroanatomy and physiology and supervised laboratory practice.

Emergency Medical Technician (EMT) - Paramedic

EMT's respond to medical emergencies and provide care to the critically ill and injured. They determine the nature and extent of illness and injury and decide the sequence of different emergency medical treatments such as the intravenous administration of drugs and the electrical stimulation of the heart.

They may control bleeding; treat shock; apply splints to broken bones; assist in childbirth; control or restrain emotionally disturbed patients; or take care of victims of poison, burns, or heart attacks.

The majority of all EMT's serve on voluntary, emergency, or rescue services or are employed primarily as fire, police or safety health personnel.

The EMT-paramedic is the highest rating of EMT (over EMT non-ambulance and EMT ambulance) and that person usually works on a mobile vehicle, under a physician's direction through voice contact. A person must be at least 18 years old and a high school graduate to become an EMT. Training programs for an EMT-paramedic range from 64 - 1200 hours in emergency medical care and are offered in universities, junior colleges, hospitals, etc. plus 6 months field experience. These programs are in addition to the 81 hour course and 6 months experience required for EMT-ambulance.

Medical Record Administrator

The medical record administrator is responsible for seeing that complete medical records are developed and preserved for all patients treated in a health-care facility and that confidentiality of those records is maintained. This involves the overall management of health-information systems that meet the medical administrative, ethical and legal requirements of the health-care delivery system. Administrators direct and coordinate the activities of personnel in the medical record department. They plan and develop information systems that provide for efficient receipt, recording, storage, and retrieval of medical data.

Medical record administrators also assist in the gathering and analysis of statistical data from medical records and reports for medical research and the evaluation of the quality of patient care.

Medical record administrators are employed by hospitals, ambulatory care centers, outpatient clinics, health maintenance organizations, and insurance agencies.

The educational requirements for a medical record administrator includes a minimum of 4 years of college. In addition to liberal arts and sciences the MRA curriculum includes anatomy, physiology, medical terminology, medical law, data processing and fundamentals of medical science.

Medical Social Worker

Social workers, whether found in a hospital, nursing home, out-patient clinic or other health setting, are responsible for helping patients and families cope with problems resulting from severe or long-term illness, recovery, and rehabilitation. Through their understanding of the social and emotional factors related to the patient's problems they are able to assist physicians and other health workers in patient evaluation and treatment activities.

Social workers are involved in the preparation of psychosocial patient histories and participate in health-team conferences. Many social workers become specialized in the health field both in medical and psychiatric services.

Educational preparation for a medical social worker includes a minimum of a bachelor's degree. Clinical social workers who provide direct diagnostic, preventative and treatment services possess a master or doctoral degree plus 2 years of post-graduate supervised clinical social-work practice. Courses include human behavior and the social environment, social welfare policies and services, methods of social work and field experience.

Medical Technologist

The medical technologist provides qualitative, quantitative and descriptive laboratory data used in the diagnosis and treatment of disease. He or she applies knowledge of the biological and chemical sciences to the analysis of biological specimens, gathering scientifically valid data.

Medical technologists are trained as generalists to work in all areas of the laboratory although they may choose to specialize in only one. The major areas of the clinical laboratory include microbiology, hematology, clinical chemistry, immunology and immuno-hematology (blood banking).

Educational requirements are: 2-3 years of college course work in biology, chemistry, microbiology and chemistry and 1-2 years in a medical technology program for a minimum of 4 years. Training programs can be based in either universities or hospitals, with some of the hospital programs requiring a college degree prior to admission.

Medical technology programs combine classroom instruction with clinical laboratory experience in the clinical areas listed above.

Occupational Therapist

Occupational therapists provide services to individuals whose lives have been impaired by physical, psychological, or developmental problems. They assist these individuals to achieve the highest level of functioning possible and reduce or eliminate the need for continued health-care services.

The occupational therapist evaluates the patient's capacities, skills and abilities and develop short-term and long-term goals and the means by which they may be achieved. The therapist then selects appropriate activities that are designed to develop independence, restore basic functions, aid in adjustment to disabilities, and prepare the patient to return to as normal a life as possible. Therapy involves the use of goal-oriented activities including crafts, self-care activities, individual and group projects to improve motor skills, strength, motivation, social skills, etc.

Occupational therapists are employed in hospitals, long-term care facilities, rehabilitation centers, community mental health programs and schools. They can specialize in such areas as psychiatry, physical dysfunction, or developmental disabilities. Occupational therapy requires 4 years of college including a minimum of 6 months clinical experience, leading to a bachelor's degree. There are also basic master's programs for individuals who already have a bachelor's degree. Pre-professional courses include anatomy, physiology, psychology, neurology and sociology.

Operating Room Technician

Operating room technicians work under the direction of the operating room supervisor (usually an R.N.) as part of the surgical team. They prepare rooms, equipment and supplies for use during surgery. They also assist the surgical team by cutting stitches, holding instruments and by supplying sterile materials as needed. Duties may also include: preparing patients for surgery, ordering supplies, and maintaining records. Operating room technicians can work in hospital delivery and emergency rooms as well as in operating rooms.

Educational requirements include high school graduation and an educational program from 9 to 12 months which includes classroom and clinical training. Two-year programs award an associate degree. Course work includes: basic medical sciences such as anatomy, physiology, pathology and microbiology; operating room techniques and techniques for transporting and preparing patients for surgery.

Orthotist

Orthotists provide care to persons with limb or spine disabilities by fitting and making devices called orthoses. These devices are orthopedic braces which support weakened body parts or help to correct physical defects such as spinal deformities. Orthotists examine and judge patients' orthotic needs and make recommendations based on individual problems.

Orthotists are responsible for designing each device, selecting proper materials, and making all measurements, model changes and layout of designs. In addition they are responsible for making sure that the devices fit and work properly, for making necessary adjustments and for teaching patients the use and care of the devices.

Educational requirements include a bachelor's degree in orthotics and 1 year of clinical experience or an associate degree, special courses in orthotics at an accredited training facility and 2 years of clinical experience. Persons with a bachelor's degree in a different area may complete 4-8 months post-graduate training in orthotics combined with 1 or 2 years of work experience.

Perfusionist

Perfusionists operate the heart/lung machine needed for complete or partial cardiopulmonary (heart-lung) bypass during the time that surgery is performed to repair defects of the heart or large blood vessels. The machine is also used in cases of respiratory failure. Perfusionists use the heart/lung machine to regulate oxygen, carbon dioxide, and blood chemistry and circulation throughout surgery. They must have an understanding of what the surgeon is doing, since the need for changes in any part of the procedure must be recognized, often on a split-second basis, and carried out in consultation with the physician.

Perfusionists may also be required to use the heart/lung machine to give anesthetics and other drugs on prescription and to control body temperature of the patient.

Perfusionists are employed by hospitals, surgeons, or professional health corporations. They always work in a hospital setting. Training programs are 1 to 2 years in length and most give preference to students with 1 or 2 years of college course work that emphasizes 2 years science and/or previous experience in an allied health field such as respiratory therapy or medical technology. Because of the competitive admission process, many students entering the programs hold a college degree.

Pharmacist

Pharmacists are responsible for compounding and dispensing medications ordered by a physician, dentist, or other authorized prescriber. They must have a comprehensive knowledge of drugs, including their composition, chemical and physical properties, and uses.

Pharmacists must also be familiar with the effects of various drugs on healthy individuals, as well as on those who are ill, and they must have a thorough knowledge of procedures for testing drug purity and strength.

Pharmacists can be found in community pharmacies, as well as in pharmacy services in hospitals, nursing homes, clinics, etc., colleges and universities and pharmaceutical companies. Pharmacy specialties include: medicinal chemistry, pharmacognosy, pharmacology, etc.

A bachelor of science in pharmacy involves 5 years of college course-work. It can consist of 1 or 2 years of pre-professional course-work followed by professional pharmacy courses or it can be an integrated program where all of the course-work is done in the pharmacy college. Pre-professional courses should include biology, chemistry and physics.

Physical Therapist

Physical therapists work with patients to reduce the severity and incidence of physical disability, bodily malfunction, and pain which may be caused by injury, disease, or any other bodily or mental condition. Following the use of specific evaluation techniques, improvement is achieved by appropriate treatment involving various physical agents (exercise, electricity, heat, cold, massage), patient education, and assistive devices. Goals projected for each patient emphasize prevention of disability, maximum restoration and rehabilitation.

The physical therapy profession depends heavily on knowledge and application of the basic medical/health sciences and the behavioral sciences, coupled with specialized knowledge and skills in the clinical sciences and arts.

Physical therapists may work in hospitals, clinics, rehabilitation centers, schools for handicapped children, neighborhood health centers, physicians' offices, nursing homes and convalescent centers, private and public health agencies, sports settings and universities.

Students can enter physical therapy through a 4 year bachelor's degree program or, for those who already have a bachelor's degree, through a 12-16 month certificate program or a 2 year basic master's degree program. Professional programs combine classroom instruction with a minimum of 4 months clinical experience. Pre-professional college courses include: biology, anatomy, physiology, chemistry and physics.

Physician Assistant

Physician assistants are health practitioners who are trained to serve patients under the direction of a licensed physician. They may work for a primary-care physician or a specialist. Their duties include interviewing patients, taking medical histories and performing routine physical examinations. They perform or assist in routine laboratory tests, and may also change dressings, treat burns, and common ailments, suture and care for cuts and wounds, and administer intravenous fluids.

Training programs require completion of up to 60 semester hours of college courses in a science or health professions program. Health-care work experience such as registered nurse, physical therapist and medical technologist may be substituted for required education. Training programs can be either 2 year university based programs or programs based on the MEDEX system which places emphasis on prior health-care work experience and consists of a shorter classroom phase combined with extensive clinical experience.

Radiation Therapy Technologist

Radiation therapy technologists assist physicians (radiologists) by treating patients with prescribed doses of ionizing radiation supplied and controlled by radiation equipment. They must position patients under the equipment with absolute accuracy in order to expose diseased body areas to treatment and to protect all other areas from radiation. These technologists are aware of the hazards of radiation and are responsible for the safety of their patients, their co-workers and themselves.

Radiation therapy technologists normally work in hospitals and clinics and in physicians' offices.

The educational requirements include high school graduation with courses in biology, math, and physics. Professional programs require a minimum of 24 months of classroom, laboratory, and clinical education and result in a certificate or an associate or bachelor's degree, dependent upon the facility chosen and the length of the program.

Respiratory Therapist

Respiratory therapists, working under a physician's supervision, perform procedures necessary in maintaining life in seriously ill patients with breathing difficulties. They also assist in treating other problems which affect both heart and lungs, such as heart failure, asthma, emphysema, blood clots in the brain, severe bleeding and shock. Respiratory therapists help or teach patients to do exercises that aid in clearing the lungs of fluid and improve the patient's ability to breathe, assist in reviving patients by use of cardiopulmonary resuscitation, and monitor patient's breathing, and blood gas levels. Respiratory therapists are primarily employed by hospitals in their intensive-care units, newborn nurseries, surgical and medical areas, and emergency rooms.

Most training programs are at the associate degree level and usually require 2 years of study, including over 1,000 hours of clinical instruction.

The educational requirements for entry into training programs include high school graduation with courses in biology, chemistry, and math.

Rehabilitation Counselor

The rehabilitation counselor works with persons who have suffered some illness or disability to obtain their prior level of vocational performance or, if this is no longer possible, to prepare the individual for a new vocation.

Counselors help handicapped or disabled persons overcome physical or mental obstacles, decide on realistic vocational goals and then help them to work toward those goals. The counselor conducts interviews, administers various aptitude and psychological tests, and develops vocational plans. In many cases, rehabilitation counselors specialize in service for particular groups: the blind, paraplegics, the mentally ill, and the retarded. Many counselors work in state and local rehabilitation agencies. They are also found in Veterans Administration facilities, hospitals and rehabilitation centers.

The minimum requirement for an entry level position is a bachelor's degree in psychology or education. However, employers are placing increasing emphasis on a master's degree. Master's programs require 1 1/2 to 2 years of study and include courses in rehabilitation problems, counseling techniques, vocational guidance, occupational and medical information, and test administration and evaluation.

Speech Pathologist/Audiologist

Speech pathologists and audiologists provide specialized help to people with problems of speaking and hearing. The goal of speech pathologists and audiologists is to help children and adults overcome such problems as lisping, cleft palate, impaired hearing and talking difficulties resulting from cerebral palsy, emotional or physical disturbance, or retardation, stuttering, or foreign dialect.

Speech pathologists diagnose and evaluate the individual's speech and language abilities. They plan, direct, and conduct treatment programs to restore or develop patients' communication skills, regardless of the cause of the disorder. Speech pathologists work in places such as schools, colleges, universities, clinics, hospitals and speech and hearing centers. Speech pathologists must have a master's degree. Course work will include normal development and functioning, disorders, and evaluation of speech, language and hearing; anatomy and physiology; and clinical methods.

Compiled by: Patricia Walker

Source:

Health Careers Guide Book, 4th
Ed., 1979, U.S. Depts. of Labor
Employment and Training Admin.
and H.E.W.

APPENDIX C

BACKGROUND INFORMATION

To provide additional information on the subjects who participated in this research, the following data are presented from selected items in Part III of the questionnaire.

Place of employment

Eighty-seven and seven tenths per cent of the subjects indicated that they were employed in a general high school. Vocational high school counselors comprised 1.6 per cent of the sample, and 9 per cent indicated "other" missing observations comprised 1.6 per cent. Sixty-three and one tenth per cent of the respondents were employed in public schools, and 18.9 per cent were employed in private schools. The missing observations comprised 18 per cent.

Number of years worked as counselor

Thirteen and one tenth per cent of the subjects indicated that they had worked in a counseling position from 1 to 5 years. Twenty-four and six tenths per cent indicated 6 to 10 years. Twenty-two and one tenth per cent worked 11 to 15 years, and 40.2 per cent worked longer than 15 years as a counselor.

Percentage of time spent counseling students

Three and three tenths per cent of the counselors spent 0% to 25% of their time counseling students. 9.8 per cent spent 26% to 50% of

their time; 21.3 per cent spent 51% to 75% of their time; and 64.8% spent 76% to 100% of their time counseling students. Missing observations comprised eight tenths per cent.

Ethnic background of students counseled

Hispancis - Sixty-nine and seven tenths per cent of the respondents indicated that their student-body was zero percent to 25 per cent Hispanic. Two and one-half per cent indicated a student-body of 26 per cent to 50 per cent Hispanic. Eight tenths of a per cent of the respondents each indicated 51 per cent to 75 per cent and 76 per cent to 100 per cent Hispanic. Missing observations comprised twenty-six and two tenths per cent.

Asian/Pacific Islanders (API) - Sixty-eight and nine tenths per cent of the respondents indicated that their student body was zero percent to 25 per cent API and .8 percent indicated that their students were 26 per cent to 50 per cent API. Missing observations comprised 30.3 per cent.

Blacks - Fifty-nine and eight tenths per cent of the respondents indicated that their student-body was zero per cent to 25 per cent black; 9.8 per cent indicated that 26 to 50 per cent of their students were black; 2.5 per cent indicated that between 51 per cent and 75 per cent were black; and 7.4 per cent indicated that 76 per cent to 100 per cent of their students were black. Missing observations comprised 20.5 per cent.

Whites - Four and nine tenths per cent of the counselors indicated that zero to 25 per cent of their students were white; 4 and one tenth

per cent indicated 26 per cent to 50 per cent were white; 20.5 per cent indicated that 51 per cent to 75 per cent were white and 53.3 per cent indicated that their students were 76 per cent to 100 per cent white.

Native American - Fifty-nine per cent of the respondents indicated that their student-body was zero to 25 per cent Native American; and .8 per cent indicated a Native American study-body of 26 to 50 per cent. Missing observations comprised 40.2 per cent. Fifteen and six tenths per cent of the respondents indicated that their student-body consisted of "other" students. "Other" students were described as mid-eastern students.

Sex of students counseled

Six and six tenths per cent of the respondents indicated that between zero and 25 per cent of their students were males; 63.9 per cent indicated that they had 26 to 50 per cent males; 12.3 per cent had 51 to 75 per cent males; and 5.7 per cent indicated that 76 to 100 per cent of their students were male. Five and seven tenths per cent of the respondents indicated that zero to 25 per cent of their students were females; 50.8 per cent had 26 to 50 per cent females; 26.2 per cent had 51 to 75 per cent females; and 5.7 per cent had 76 to 100 per cent females. Missing observations comprised 11.5 per cent.

Counselor's sex

Forty-five and nine tenths per cent of the respondents were male and 43.4 per cent were female. Missing observations comprised 10.7 per cent.

Number of students counseled per year

Two and five tenths per cent of the respondents counseled less than 100 students per year; 77.9 per cent counseled between 100 and 499; 8.2 per cent counseled 500 to 999; and 2.5 per cent counseled 1000 or more students per year.

Ethnic background of counselor

Eight tenths of a per cent of the respondents were Hispanic; .8 per cent were Asian/Pacific Islander; 8.2 per cent were Black; and 81.1 per cent of the respondents were White. Missing observations comprised 9.0 per cent.

APPROVAL SHEET

The dissertation submitted by Patricia Wade Walker has been read and approved by the following committee:

Dr. Anne M. Juhasz
Professor, Foundations of Education, Loyola

Dr. Jack Kavanagh
Associate Professor, Foundations of Education, Loyola

Dr. Terry Williams
Assistant Professor, Guidance and Counseling, Loyola

Dr. Thomas W. Beckham
Associate Vice Chancellor, Health Sciences Center, University
of Illinois at Chicago

The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the Committee with reference to content and form.

The dissertation is therefore accepted in partial fulfillment of the requirements for the degree of Doctor of Education.

April 21, 1983
Date

Anne M. Juhasz
Director's Signature