Knowledge of High School Students Concerning Physical Therapy, Occupational Therapy, and Nursing

Amy Godlewski
Grand Valley State University

Karen Oorbeck
Grand Valley State University

Beth Spitzley
Grand Valley State University

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KNOWLEDGE OF HIGH SCHOOL STUDENTS
CONCERNING PHYSICAL THERAPY,
OCCUPATIONAL THERAPY, AND NURSING

By

Amy Godlewski
Karen Oorbeck
Beth Spitzley

THESIS

Submitted to the Department of Physical Therapy
at Grand Valley State University
Allendale, Michigan
in partial fulfillment of the requirements
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MASTER OF SCIENCE IN PHYSICAL THERAPY

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ABSTRACT

The purpose of this study was to determine the level of knowledge of Kent County high school students regarding physical therapy, occupational therapy, and nursing. A survey created by the investigators asked specific questions concerning these professions. The survey was administered to 545 eleventh and twelfth grade students. The scores were compared to demographic data and school characteristics (i.e. urban, suburban, rural, public or private). The researchers’ hypotheses were that students would have a low level of knowledge concerning all these professions, and that students would be more familiar with nursing compared to physical therapy or occupational therapy. These hypotheses were supported by the data. The researchers also hypothesized that students attending private schools would be more familiar with these professions than those attending public schools, and that students attending rural schools would be less familiar than the students attending urban or suburban schools. These hypotheses were not supported.
ACKNOWLEDGMENTS

The researchers would like to extend their thanks and appreciation to our committee members for their valuable contributions and assistance in completing this research project: Dr. Jane Toot, chairperson; Dr. William Bell; and Joanna Strong. We would also like to thank Karen Burchard for her considerable assistance with the statistical analysis of our data. Their hours of work were essential in producing a valuable learning experience and an useful study.

We would also like to thank our families and friends for the patience and love they have shown us as we worked on completing this exasperating project.
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CHAPTER 1

INTRODUCTION

Caring for people with disabilities is a major aspect of the physical therapy, occupational therapy, and nursing professions. Statistics have shown that the occurrence of disability increases dramatically with age (National Council on the Handicapped, 1988). Due to the aging trend of America, a greater percentage of Americans will be disabled in the years ahead. For example, those people who are 65 and older are projected to grow from 25.7 million in 1980 to 52 million in 2020 (Himes, 1992). Therefore, physical therapists, occupational therapists, and nurses will be in critical demand to provide care for those who are disabled.

Allied health professions such as physical therapy, occupational therapy, and nursing are currently experiencing shortages of qualified practitioners. Because of this, the need to improve student recruitment and career marketing efforts is evident (Kosegi & Feeley, 1989). This recruitment must begin before and during high school, when students usually begin to investigate the possibility of college and explore career options (Mishoe, Valeri, and Beveridge, 1993; Buccelli, Hall, Johnston, Sherzer, and Kushner 1991).

Several studies have investigated the familiarity of high school students with allied health professions. Many of the studies demonstrated that high school students are not familiar with the allied health professions (Buccelli, et al., 1991; Grossman, Arnold, Sullivan, Cameron, and Munro, 1989; Mathews, Cole, and Rinas, 1984; Mishoe, et al.,
A lack of knowledge rather than a lack of interest was found to be the issue in the recruitment of high school students to allied health careers (Mishoe, et al., 1993). Finally, the high school students' knowledge about allied health professions is also hindered because they rarely have the opportunity to receive direct counseling from allied health faculty or practitioners. Their main counseling contacts are the career and academic school counselors hired to provide information about all career areas (Buccelli, et al., 1991).

The purpose of this research study was to discover exactly what eleventh and twelfth grade students know about physical therapy, occupational therapy, and nursing. Eleventh and twelfth grade students were chosen because this is when students actively consider the possibility of attending college and also examine different career options. It is in these grades that college entrance examinations are taken. The survey which was distributed investigated the eleventh and twelfth grade students' knowledge about the educational requirements, work settings, earning potential, primary responsibilities, and advancement opportunities of the physical therapy, occupational therapy, and nursing professions. We also explored whether there is a difference in knowledge of the above areas among eleventh and twelfth grade students who attend urban, suburban, rural, public, and private high schools. Finally, the students' insights of these health careers were compared based on gender and ethnic origin.

The results of this study may provide information regarding the type of people who may be interested in pursuing a career in physical therapy, occupational therapy, or nursing in the future. The results may also help direct recruitment strategies toward
populations who demonstrate a lack of knowledge regarding physical therapy, occupational therapy, and nursing as careers.
CHAPTER 2

LITERATURE REVIEW

In the review of the available literature, the authors found studies that present very interesting results concerning the knowledge of high school students about the allied health professions. Several studies surveyed the students' perceptions of the professions and the people who work within these professions. They addressed possible influences on the students' career choices, including the people who influenced their career choices and the aspects of a career they consider appealing. The studies also address general topics about the allied health professions including the students' familiarity with the professions.

Familiarity with Allied Health Professions

The students' familiarity with the allied health professions is important when considering effective recruitment plans. The types and amount of knowledge possessed by the students could direct the recruiters' efforts and increase the efficiency of such efforts.

The previous surveys showed that the students have a low level of familiarity with the allied health professions overall (Buccelli, et al., 1991; Grossman, et al., 1989; Mathews, et al., 1984; and Mishoe, et al., 1993). The responses revealed that the students had an especially low level of knowledge concerning aspects of the careers which are not directly related to patient care.
Mishoe et al. (1993) found in a survey of high school students that only 15% of the students felt that they were very familiar with allied health careers; 70% were vaguely familiar with them while 15% felt that they knew nothing about them at all. Students with grade point averages of “A” were less familiar with allied health professions than those with “B” or “C” averages. Students with a “D” average knew the least of all the students. Of those planning to attend college, 67% were vaguely familiar with allied health professions.

Buccelli et al. (1991) surveyed 914 eleventh grade students to determine the students' attitudes and knowledge about AIDS, and to determine if the risk of contracting AIDS may be a reason that students are not interested in health care fields as a career. The researchers also asked questions regarding the knowledge of the students regarding the health care professions. The students generally believed that people in business careers made more money than people in health careers, although less than half of the students knew the average salary of a health professional. They also incorrectly believed that tuition for health programs was higher than tuition for business or education programs. Less than a third of the students knew the minimum education level required to be a health professional. The differences in responses were analyzed according to the gender and ethnic origin of the students, and the type of school they attended whether public or parochial. The researchers found no significant difference between the mean scores between genders, among ethnic origins, or among types of schools.
Grossman et al. (1989) studied high school students and their knowledge about nursing duties, influential power of nurses, career opportunities in nursing and the opportunities of nurses to have financial success. This survey found that the students were aware of the "hands-on" caring aspects of nursing, but not about the other roles that nurses can have or about their opportunities for advancement. The majority perceived nursing as a career which offers the opportunity to care for people and help them live healthy lifestyles. However, there were misperceptions about nursing’s role in the areas of leadership in health policy and legislation, teaching in colleges or universities, holding executive positions, and involvement in research.

Mathews et al. (1984) surveyed third, sixth, ninth, and twelfth grade students attending school in a suburb of Kansas City, Kansas, about general aspects of allied health professions. Allied health professions included in the survey were: respiratory therapy, medical technology, biometry, speech pathology, physical therapy, radiology technology, anesthesiology, dietetics, medical record administration, and emergency medical technology. Less than half of the students were able to identify if each of the different types of professionals worked mostly with machines, people or both. Only thirty-four percent of the students were able to correctly identify whether the professionals worked inside hospitals, outside hospitals, or both. They found that as the grade level increased, so did the number of correct responses on the survey, but the increase in knowledge about allied health professions was not dramatic. The magnitude of the increase of the scores between grades was variable. As compared with lower grade levels, some grades had a decreased perception of understanding of some professions.
There was an insignificant difference between the scores of males and females in this study.

**Perceptions about Allied Health Professions**

The amount of knowledge about allied health professions influences the perceptions of the students regarding allied health professions, and these perceptions may be a critical factor to consider when organizing recruitment strategies. The effectiveness of recruiters may depend on dispelling incorrect negative perceptions and providing and reinforcing correct positive perceptions regarding the allied health professions. Efficient recruiters must first know what students are looking for in a career before they can decide the best means of recruitment. The results of two studies are discussed below.

The survey by Mishe et al. (1993) gathered information about what qualities the high school students were seeking in a career. When considering a career, the students in this study were looking for personal satisfaction, employment opportunities and high salaries.

Marriner-Tomey, Schwier, Maricke, and Austin (1990) surveyed sophomore high school students in three rural high schools. They asked questions about what they expected from an ideal career, and then asked questions about the students’ perceptions of a nursing career. The factors the students associated with an ideal career included: always having a job, being appreciated, knowing a great deal, making lots of money, working in a safe place, being a leader, making decisions, being powerful, and having respect. The factors they associated with a nursing career included: caring for people, working very hard, working with their hands, being very busy, and working with “high-
tech" equipment. Students in this survey wanted more of the "ideal career" attributes than they thought would be provided in a nursing career, and they wanted significantly less of the attributes they associated with a nursing career.

According to Mishoe et al. (1993) the perceptions regarding the social status of allied health professions depended on not only the gender of the respondent, but also on whether that student was considering an allied health profession for himself or herself. When questioned about the social status of allied health professionals, 65% of the females and 66% of the males thought that they belonged in the middle class. More females than males viewed allied health professionals as having high social status. All of the students who were planning to become health professionals viewed allied health professionals as being middle to upper class.

Grossman and his colleagues confirmed the results of Mishoe et al. were confirmed when they surveyed high school juniors about their perceptions of a nursing career. Among the students surveyed, 17% were considering a nursing career, and 81% said they were not. The group considering a nursing career had a higher mean opinion score than did the group who was not considering nursing. Males had a lower mean score than the females.

Buccelli et al. reported that the students they surveyed reported favorable impressions regarding the allied health professions (1991). Twenty-one to 38% of the students thought that working with sick people would be depressing, and 58 to 80% of the students answered that the satisfaction of helping sick people would make the health professions a good career choice. Most of the students disagreed that health
professionals work too hard for the salary they receive. The students thought that a career in the health field would be interesting because of the new discoveries constantly being made, and because they would be saving people's lives. Between 73 and 86% of the students did know that there were many jobs available for the health professionals and as well as many opportunities for advancement in these positions.

**Influences on Career Choice**

Recruiters must also consider who the people are that influence the students when they are making career choices. Including the people who could affect the students' choices in their recruitment strategies may increase the effectiveness of the recruitment strategies. A study done by Mishoe et al. (1993) found that the people who had the greatest influence on high school students' career choices were self, parents and other relatives. It also discovered that only 44% of these students had approached their high school counselor for career guidance.

The Grossman et al. (1989) study found that there is a significant relationship between having a nurse role model and the decision to consider nursing as a career. The students who had a nurse role model in their lives were much more likely to consider going into the nursing profession. Sixty-three percent of the students in a different survey conducted by Marriner-Tomey et al. (1990) knew a close relative or friend who was a nurse. Eighty-one percent had been a patient or had a hospitalized relative in the past year. The majority of the students in this study felt that nursing had many of the elements of an ideal career.
Because students spend greater than seven hours each week-day in school, counselors could be another potential significant influence on the students' career choices. Kosegi and Feeley (1989) gave a survey to high school and college counselors which attempted to identify present counseling resources, determine what the counselors need to better serve the students, and assess the counselors' perceptions of the allied health fields. Forty-six percent of the high school counselors and 42% of the college counselors felt that the interest in allied health was increasing. Of the schools surveyed, 37% of the high schools had allied health education courses, and 82% of the colleges had allied health programs. Over 90% of the high school and college counselors responded that they had detailed information about allied health careers. Eighty-one percent of the college counselors felt that the information they had on allied health careers was current, while almost 84% of the high school counselors felt that their information was current. Only 56% of the high school counselors responded that they have one-on-one counseling in allied health with their students, compared to almost 96% of the college counselors. These results show that high school students are not receiving information about allied health professions from counselors, even though it is current and available to them.

The same counselors were also asked about why they felt that more students were not interested in pursuing allied health careers. The most frequent reasons given were, in order: lack of adequate awareness of allied health careers and programs (63.5%), difficulty of pre-professional curriculum (63.5%), poor preparation for science curriculum (58.3), dislike of science (57.3%), more opportunities opening up in non-health fields (51.0%), salaries not high enough (46.9%), increased admission standards in
some programs (44.8%), lack of interest in service oriented fields (43.8%), dislike of being around sick people (42.7%), inadequate previous counseling (42.7%), and not financially competitive with non-health fields (40.6%) (Kosegi and Feeley, 1989). In the course of compiling their information for this survey, they discovered that principals and science instructors felt that students were not pursuing health careers because they were pursuing careers that they believed to be “less demanding and more lucrative” (Buccelli, et al., 1991). Over 50% of the students at these high schools felt that the high school staff did not offer enough information about the career opportunities in the health field.

The study by Mathews et al. (1984) which surveyed 3rd, 6th, 9th, and 12th grade students found that the 6th grade students had the highest expectation of attending college while the 12th grade students had the lowest expectation of attending college. The expectation of attending or not attending college is a great influence on which career a student chooses.

**Recommendations**

According to the results of the previous research, lack of knowledge and incorrect perceptions are major obstacles when trying to increase the number of physical therapy, occupational therapy, and nursing students. Mishoe et al. (1993) and Buccelli et al. (1991) had suggestions to offer regarding recruitment strategies aimed at increasing the students’ knowledge about the allied health professions. Mishoe et al. (1993) noted that lack of knowledge rather than lack of interest seems to be the problem in recruiting allied health students. High school counselors were shown not to be well utilized by the students, while parents have a crucial role in helping the students choose a career. The
marketing effort must be focused on the students and their parents instead of the schools and the counselors. Mishoe et al. (1993) also recommends that recruitment strategies begin before high school, when students are beginning to think seriously about their careers and their futures. Recruiters must target males, minorities and non-traditional students when they are encouraging students to explore allied health professions.

Effective ways of increasing the students’ level of knowledge regarding the allied health professions are through role models, and creating nurturing relationships between allied health professionals and high school students. Tours of health facilities, school demonstrations and career days must be included in the recruitment efforts. The amount of personal satisfaction, employment opportunities and income potential must be explained to the students, since these are important factors which influence their career choice.

The Buccelli et al. (1991) study concluded that a major reason that students are not choosing health careers is because of their “lack of knowledge, understanding, and appreciation of the health professions.” The authors of this study feel that the number of students interested in health careers would increase if a national advertising campaign was begun. This campaign would have to be directed not only toward high school students, but also toward non-traditional students, males, minorities, and parents of perspective students.

Implications for Our Study

Although there had been some research done which gives general information about the knowledge of students regarding the allied health professions, the survey that
we administered asked for more specific information about exactly what the high school students know about the physical therapy, occupational therapy, and nursing professions. The survey for this study asks specific questions about the education requirements, earning potential, places of employment, types of patients, equipment used, ease of finding employment, and advancement opportunities for these professions.

We have found little research that has compared the knowledge of students from different ethnic origins regarding the professions of physical therapy, occupational therapy, and nursing. Additionally, the difference of knowledge levels among students attending urban, suburban, rural, public, and private schools has not been addressed. Buccelli et al. (1991) addressed these topics in their research, but the majority of the questions were directed to obtain information about the students' knowledge of AIDS. The differences between genders, ethnic origin and public and private schools may be important aspects for recruiters to consider when trying to encourage students to look into these career and this information may indicate to the recruiters where their efforts may be best utilized.

**Hypotheses and Research Question**

The first hypothesis of the investigators was that eleventh and twelfth grade high school students in Kent County are not knowledgeable about the allied health professions. A survey created by the investigators asked specific questions regarding educational requirements, earning potential, places of employment, types of patients, use of “high-tech” equipment, ease of finding employment, and advancement opportunities for physical therapists, occupational therapists, and nurses. Through the administration
of the survey, we were able to discover the level of knowledge held by the high school students about physical therapy, occupational therapy, and nursing. Our second hypothesis was that students were more familiar with nursing when compared to physical therapy and occupational therapy.

Another purpose of our study was to discover if a difference existed in knowledge of the above areas between students attending urban, suburban, rural, public, and private high schools. Our hypothesis was that students in the rural areas would have less exposure to these professions, and therefore would score the lowest. Overall, we also believed that students in private high schools would score higher than those students in public high schools. We feel that programs in private high schools are generally more well-rounded than programs in public high schools.
CHAPTER 3

METHODS

Subjects

Eleventh and twelfth grade high school students in Kent County were the subjects in this study. High schools in Kent County were stratified into urban private, urban public, suburban private, suburban public, rural private, and rural public. Definitions of urban, suburban, and rural were obtained through the Kent County Intermediate School District. After stratification, eleven schools were selected randomly to participate in our study. Two schools in each of the following categories were chosen: urban private, urban public, suburban private, suburban public, and rural public. Since only one rural private high school exists in Kent County, it was automatically included in our study. Not all schools initially chosen agreed to participate, therefore additional schools were needed. Three additional schools were selected and contacted, in the same manner, until the final sample of ten schools was derived. Only one principal in the urban public category agreed to participate, causing the final sample size to include only ten schools. The survey form was distributed to two classrooms in each school consisting of students at various educational levels. Five hundred and eighty-eight students participated in the study, however only 545 completed surveys were used. Reasons for excluding the survey forms include responses left blank or unclearly marked, multiple responses circled when asked for only one response, or students not in the eleventh or twelfth grade.
Procedure

The research was conducted as a descriptive study using a survey methodology. Each school chosen to participate, initially received a mailed package containing a cover letter addressed to the principal (see Appendix A), a consent form (see Appendix B), a copy of the survey form (see Appendix C), and an addressed, stamped envelope for the return of the consent form. The purpose of the cover letter was to introduce the researchers and thesis project and to ask for participation in our study. The consent form was to provide the principal with a means of communicating the decision whether to or not to participate in the study. The consent form also provided the researchers with written verification of the principals’ decision.

Schools agreeing to participate then received in the mail, a package containing a thank-you letter addressed to the principal; two envelopes containing 40 survey forms each, with instruction forms for the distribution and collection of the questionnaires attached (see Appendix D); and an oversized, stamped envelope for the return of the completed questionnaires.

Each principal selected two classrooms in his/her school, according to our guidelines (see instruction sheet in Appendix D). The teacher was responsible for administering the surveys to the students in his/her classroom, according to an instruction form attached to the envelope containing the survey forms. Students were to follow the directions on the survey form, circling the appropriate number of responses in each section. Students were assured that all information was to remain confidential.
The survey form was designed by the researchers with questions adapted by Mishoe, et al. & Mathews, et al. Thirty one questions were included in the two-sided, three-page questionnaire form. The first 6 questions, both open and closed-ended, asked information regarding grade level, gender, grade point average, plans upon graduation and type of career desired in the future. Question 7 asked how familiar the student was with the allied health profession. The remaining 24 questions were related to educational level, salary, job responsibilities, places of employment, patient population, use of equipment, ease of finding employment and opportunities for advancement. The researchers discussed the questionnaire form in great detail with the thesis committee members to determine validity and reliability. The Human Research Review Committee at Grand Valley State University reviewed and approved our proposed study on July 19, 1994. Distribution of the initial package began October 3, 1994.

**Data Analysis**

Data was analyzed to compare gender, ethnic origin, knowledge of allied health professions, and characteristics of the school (i.e. urban, suburban, or rural; public or private). The members of the research team transferred the students' responses onto scannable, computerized answer sheets. (see Appendix E for sample of coded survey form.) School characteristics were coded in question 1 and 2, filling in the appropriate response to correspond to each characteristic (i.e. Question 1: A = urban, B = suburban, C = rural; Question 2: A = public, B = private). Each response to questions regarding type of career desired, job responsibilities, places of employment, and patient population, were each treated as a separate response on the answer sheet to allow better analysis of
each question. To decrease the likelihood of error in transferring data onto the answer sheets, each survey form was double-checked to guarantee error did not occur.

After coding of the forms was complete, the scannable, computerized sheets were computer read and compared to the key. Statistical Package for the Social Sciences (SPSS) was the software utilized to analyze the data. Overall score for each respondent was calculated as a percentage. Frequencies and cross tab analysis were also performed to compare the overall score between the following: 1) urban public and urban private, suburban public and suburban private, rural public and rural private, 2) females and males, 3) grade point averages, 4) ethnic origins, and 5) familiarity with the allied health professions, 6) career desired after graduation and, 7) grade level. Responses pertaining to physical therapy, occupational therapy, and nursing were grouped according to profession. The average percent of questions answered correctly for each profession was represented as the mean score for that category. Mean scores for professions were compared between students.
CHAPTER 4
RESULTS

Five hundred forty-five eleventh and twelfth grade Kent County high school students participated in our study. The sample consisted of 143 urban, 260 suburban, and 142 rural high school students. Two hundred fifty students attended public high schools, while 295 attended private high schools (See Table 1).

Table 1.
Number of Students in Each High School Based on School Classification

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>116</td>
</tr>
<tr>
<td>Public</td>
<td>27</td>
</tr>
<tr>
<td>Suburban</td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>134</td>
</tr>
<tr>
<td>Public</td>
<td>126</td>
</tr>
<tr>
<td>Rural</td>
<td></td>
</tr>
<tr>
<td>Private</td>
<td>45</td>
</tr>
<tr>
<td>Public</td>
<td>97</td>
</tr>
</tbody>
</table>

The sample consisted of 203 11th grade and 339 12th grade students: 283 of the students were female, while 261 were male; the majority of the respondents (87%) were Caucasian (Table 2); 51% of the respondents reported a “B” grade point average (Table 2); type of career desired upon graduation was variable (Figure 1); 81% of the subjects plan to attend college after graduation (Table 2); and 89% of the students reported that they were either somewhat or vaguely familiar with the allied health professions (Table 2).
Table 2.

Students' Characteristics

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnic Origin</td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>8</td>
</tr>
<tr>
<td>Asian</td>
<td>7</td>
</tr>
<tr>
<td>Caucasian</td>
<td>475</td>
</tr>
<tr>
<td>Hispanic</td>
<td>11</td>
</tr>
<tr>
<td>Native American</td>
<td>30</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>135</td>
</tr>
<tr>
<td>B</td>
<td>278</td>
</tr>
<tr>
<td>C</td>
<td>119</td>
</tr>
<tr>
<td>D</td>
<td>12</td>
</tr>
<tr>
<td>Plans After Graduation</td>
<td></td>
</tr>
<tr>
<td>Attend college</td>
<td>441</td>
</tr>
<tr>
<td>Attend vocational school</td>
<td>22</td>
</tr>
<tr>
<td>Enter military</td>
<td>24</td>
</tr>
<tr>
<td>Work full-time</td>
<td>35</td>
</tr>
<tr>
<td>No plans</td>
<td>23</td>
</tr>
<tr>
<td>Familiarity with Allied Health Professions</td>
<td></td>
</tr>
<tr>
<td>Very</td>
<td>36</td>
</tr>
<tr>
<td>Somewhat</td>
<td>226</td>
</tr>
<tr>
<td>Vaguely</td>
<td>259</td>
</tr>
<tr>
<td>Never heard of them</td>
<td>22</td>
</tr>
</tbody>
</table>
Results

Mean score was defined as the average percent of questions answered correctly by all students. For the purposes of this study, a difference in mean score ≥ 5% was considered significant. For some categories, a significance could not be determined due to an uneven distribution of subjects’ characteristics.

Mean Score For All Questions With a Correct Response Compared to School Classification

The average percent of questions answered correctly by all students was defined as the mean score. Significant differences in mean score did not exist between private and public, nor between urban, suburban, and rural high schools (Figure 2). Students attending private high schools scored slightly better than those enrolled in public schools,
64.6 and 63.2% respectively. Urban high school students scored slightly higher than suburban and rural students, 65.0, 64.0, and 62.9% respectively. When comparing each group of schools (urban private, urban public, suburban private, suburban public, rural private, rural public), urban private high school students reported the highest score (65.6%). However this difference was not considered to be significant (Figure 3).

Figure 2.
Percent of Questions Answered Correctly Compared to School Characteristic (as Evidenced by Mean Score)
Figure 3.

Percent of Questions Answered Correctly Compared to School Classification (as Evidenced by Mean Score)

Mean Score For All Questions With a Correct Response Compared to the Characteristics of All Students

Mean score was defined as the average percent of questions answered correctly by all students. The average mean score for all students was 63.4%. Significant differences did not exist when grade level, gender, grade point average, and plans after graduation were compared to mean score (Table 3). When comparing ethnic origins to mean score, African-Americans scored highest with an average mean of 71.9% (Figure 4). The sample consisted of a disproportionate number of students representing each ethnic origin, therefore we were unable to conclude that African-American students score significantly higher than those in other ethnic groups.

Students who reported being “somewhat familiar” or “vaguely familiar” with the allied health professions scored significantly higher when compared to those who
reported "never hearing of them," 65.0, 63.8, and 58.3% respectively (Figure 5). Those who reported being "very familiar" with the allied health professions scored 62.1% (Figure 5). When comparing type of future career desired to the mean score, students choosing careers in law (66.1%) or education (65.5%), scored significantly higher than those selecting religion (60.2%) or computer science (59.8%) as their career option (Figure 6). Those interested in a health field scored 63.8% (Figure 6).

Table 3.

Percent of Questions Answered Correctly Compared to Students’ Characteristics (as Evidenced by Mean Score)

<table>
<thead>
<tr>
<th>CHARACTERISTIC</th>
<th>MEAN SCORE (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Level</td>
<td></td>
</tr>
<tr>
<td>11th</td>
<td>62.4</td>
</tr>
<tr>
<td>12th</td>
<td>64.9</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>65.1</td>
</tr>
<tr>
<td>Male</td>
<td>62.6</td>
</tr>
<tr>
<td>Grade Point Average</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>65.1</td>
</tr>
<tr>
<td>B</td>
<td>64.1</td>
</tr>
<tr>
<td>C</td>
<td>62.0</td>
</tr>
<tr>
<td>D</td>
<td>63.8</td>
</tr>
<tr>
<td>Plans After Graduation</td>
<td></td>
</tr>
<tr>
<td>Attend college</td>
<td>64.5</td>
</tr>
<tr>
<td>Attend vocational school</td>
<td>57.4</td>
</tr>
<tr>
<td>Enter military</td>
<td>62.8</td>
</tr>
<tr>
<td>Work full-time</td>
<td>62.6</td>
</tr>
<tr>
<td>No plans</td>
<td>62.0</td>
</tr>
</tbody>
</table>
Figure 4.
Percent of Questions Answered Correctly Compared to Ethnic Origin (as Evidenced by Mean Score)

![Diagram showing mean scores for different ethnic origins.]

Figure 5.
Percent of Questions Answered Correctly Compared to Students' Familiarity With the Allied Health Professions (as Evidenced by Mean Score)

![Diagram showing mean scores for different levels of familiarity.]

Figure 6.

Percent of Questions Answered Correctly Compared to Type of Career Desired in the Future (as Evidenced by Mean Score)

Examining Knowledge of High School Students Concerning Physical Therapy, Occupational Therapy, and Nursing

Responses pertaining to physical therapy, occupational therapy, and nursing were grouped according to profession. The percent of questions answered correctly for each profession was represented by the mean score for that category. Scores showed students to be significantly more familiar with nursing (81.9%), than with physical therapy (70.5%) and occupational therapy (67.5%).

Students were asked questions pertaining to minimum educational level, average starting salary, job responsibilities, places of employment, types of patients seen, use of high-tech equipment, ease of finding employment upon graduation, and opportunities for advancement for each profession. For all professions, students scored highest in
questions relating to opportunities for advancement, types of patients seen, places of employment, and job responsibilities (Figure 7). Students scored the lowest in questions addressing educational level and average starting salary (Figure 7).

When comparing nursing, physical therapy, and occupational therapy, significance in mean score did not exist between professions when comparing questions relating to job responsibilities and salary (Figure 7). Students score significantly higher for nursing in areas concerning ease of finding employment, use of “high-tech” equipment, types of patients seen, and places of employment (Figure 7). For the question pertaining to opportunity for advancement, students scored significantly higher for physical therapy compared to nursing (Figure 7). However a significance between physical therapy and occupational therapy did not exist for this question. Students scored significantly higher in occupational therapy compared to nursing and physical therapy for the question regarding minimal educational level required (Figure 7).
Figure 7.

Percent of Questions Answered Correctly for Each Profession Compared to Profession (as Evidenced by Mean Score)
Support of Our Hypothesis

Mean score was defined as the average percent of questions answered correctly by all students. The average mean score for all students was 63.4%. This score supports the investigators’ hypothesis that eleventh and twelfth grade students in Kent County are not familiar with the allied health professions, particularly physical therapy, occupational therapy, and nursing.

Rural high school students scored slightly lower than students in urban and suburban districts, 62.9, 65.0, and 64.0 % respectively. Due to the insignificance in mean score, our hypothesis that rural students would score the lowest is not supported. There was twice the number of suburban students who participated in the study compared to the number of rural and urban students. This large difference makes the validity of this comparison questionable.

Our hypothesis that students in private schools would score higher than those in public schools also is not supported. Although students in private schools did score higher than students in public schools, 64.6 and 63.2% respectively, the difference is not significant and therefore does not support our hypothesis.

Our hypothesis that students were more familiar with nursing when compared to physical and occupational therapy was confirmed by our study. The overall mean score for questions pertaining to nursing was 81.9% as compared to 70.5% and 67.5% for physical therapy and occupational therapy, respectively.
CHAPTER 5

DISCUSSION

The results of this study and previous literature have shown that high school students have a low level of familiarity and knowledge with the allied health professions (Mishoe, et al., 1993; Buccelli, et al., 1991; Grossman, et al., 1989; Mathews, et al., 1984). Subjects in our study had an especially low level of knowledge in areas not directly related to patient care. Topics such as minimum level of education, salary, and ease of finding employment had scores below 56%. This is similar to previous studies which found that students had a low level of knowledge concerning aspects of allied health professions not specifically involving patient care (Grossman, et al., 1989; Mathews, et al., 1984).

Unlike other studies which found that students were unaware of opportunities for advancement, students in our study scored comparatively high in this area (Mathews, et al., 1984; Grossman, et al., 1989). The students may be aware of opportunities in the health care field if they have received information from parents, teachers, counselors, and/or health care providers.

Our hypothesis that the students would score higher in questions related to nursing was confirmed. The overall scores for the nursing questions was 81.9% as compared to 70.5% and 67.5% for physical therapy and occupational therapy, respectively. The greater familiarity with nursing may be due to television programs
which portray nurses, exposure by students' visitation of hospitals, and/or a family
member or a friend's family member may be a nurse.

Particular topics such as employment locations, types of patients, and
opportunities for advancement had significantly higher scores. This contrasts with a
study by Grossman, et al. which found that students were not aware of nurses'
opportunities for advancement (1991). For physical therapy, greater scores were found in
employment locations and opportunities for advancement. In occupational therapy, the
students scored notably well in opportunities for advancement.

When answering questions regarding the nursing profession, students were more
familiar with types of patients treated, locations of employment, and the job
responsibilities. They were significantly less familiar with beginning salaries and
minimum level of education, with most students underestimating these two areas. We
believe this reflects that nurses are not generally as highly respected as other health
professionals.

When comparing the percentage of questions answered correctly to students' intended careers as evidenced by mean scores, no significant difference was noted
between those students interested in health careers and those students interested in other
careers. Even though these students are interested in health careers, based on our results,
we believe inadequate information has been provided to them.

The hypothesis that rural high school students would score lower is not
substantiated because of the large number of suburban students who participated. There
was less than a five percent difference among mean scores of urban, suburban, and rural
high school students. The difference between urban and suburban high school students' scores was only one percent. A 1.4% difference in scores existed between private and public high schools. The uneven distribution of the number of students from each school classification and the insignificant differences in mean scores prevent generalizations.

**Limitations of Our Study**

Due to the uneven distribution of ethnic origins, this study cannot conclude that one ethnic origin did better than others. There were 475 Caucasians who participated in the study as compared with eight African-Americans, seven Asians, 11 Hispanics, 30 Native Americans, and 12 of other ethnic origins. The uneven numbers may be due to the fact that only one of the urban public schools selected to participate agreed to be part of the study. However, a previous study by Buccelli, et al. found no significant difference between mean scores among ethnic origins (1991).

Another limitation of this study is the geographic location chosen. Kent County is located in western Michigan. Western Michigan has two physical therapy schools, several nursing schools, and an occupational therapy school. Although the students scored low, the results of the study may be biased due to the possible accessibility of pertinent information at these schools.

Participants in this study were not evenly divided among school classifications. Conclusions regarding classifications of schools are not indicated because of the uneven distribution.

There was no pilot study conducted. Thus, a basic understanding of the survey's questions may not have occurred. Finally, there was a lack of control over which type of
academic class received the survey. Therefore, there may not have been a representative sample participating in the study.

**Suggestions for Future Research**

Further research about high school students' knowledge of physical therapy, occupational therapy, and nursing is indicated. Our results showed that a low level of knowledge exists among high school students. What needs to be addressed is why there is a low level of knowledge. This will enhance recruiting efforts for qualified individuals in the health care professions.

A suggested area to target includes ethnic origin. Although the study included this area, a proportionate sample of ethnic origins did not exist and therefore we could not generalize the findings. There is also an underrepresentation of various ethnic origins in the health care field. By focusing recruitment on specific ethnic origins indicated by the results of future research, perhaps less disparity would be present.

Further research may include choosing a different geographic location. The study's subjects attended high schools in a geographic region which boasts two physical therapy schools, an occupational therapy school, and several nursing schools. Although this did not have any notable influence on the results, it may be interesting to compare different places in the state. Thus, recruiters would know specifically where to target their efforts.

A suggestion for future research may include having the instructor who administers the survey record the type of academic class that received the survey. If the
academic backgrounds of the students are known, recruiters will be able to distribute information to the appropriate people.

Future studies may also want to target older populations who are returning to college. An increasing number of people attending college today are older, nontraditional students who are changing careers or advancing their education. Allied health recruiters must make sure that they focus marketing efforts on this population as well.

Another suggestion would be to give a modified form of this survey to high school and community college counselors. The results would be valuable to determine if the counselors have accurate information about allied health careers. Previously, high school counselors have been shown to be not well informed about health professions (Mishoe, et al., 1993). This affects students’ ability to obtain current information.

A question should be included in future surveys which will ascertain whether information was available to students about health careers. Allied health professionals as well as parents and counselors should be targeted to assist students in obtaining more information about health careers. This would be valuable knowledge because many people need more specific information to help them decide what they want to do in the future. Allied health professionals and parents have been shown to be influential in students’ career choices (Mishoe, et al., 1993).

People interested in health care careers need to have more information concerning the qualifications required to enter these fields. By giving these people specific, pertinent information, they will have a better idea of what will be expected of
them. If prospective health care students understand these expectations, there is a greater chance of successful completion of these allied health programs.
REFERENCES


APPENDIX A

COVER LETTER
Dear Mr./Ms. XXXXXXXXXX:

I am writing to you on behalf of three Physical Therapy students from Grand Valley State University. As a requirement for completion of a Masters of Science degree, these students are doing research which focuses on the degree of knowledge that eleventh and twelfth grade students in Kent County have regarding the physical therapy, occupational therapy and nursing professions. The research will center on comparing the results of public and private schools; urban, suburban, and rural schools; gender; and different ethnic origins. A copy of the survey to be used is enclosed. After the research is completed, the information gathered may be used to direct recruitment strategies toward those populations which demonstrate a lack of knowledge concerning these professions.

Your school has been chosen to participate in this study through a random selection process which included all the schools in Kent County. Two schools were randomly selected from each of the following categories: urban public, suburban public, rural public, urban private, suburban private, and rural private. Since only two schools were selected from each category, your participation and cooperation is essential to the students' research. The design of the study requires that the survey be administered to two classes consisting of eleventh and/or twelfth grade students at each school. We are requesting your help in administering these surveys to your students. The time commitment will be minimal on your part. The surveys will be mailed to you in advance. Subsequently you or someone you so designate will be responsible for administering the survey to the two classes in your school. Specific instructions will be included with the surveys regarding the administration of the questionnaire. The survey should take the students about ten to fifteen minutes to complete. After the surveys are completed, they should then promptly be mailed back to the student researchers to be analyzed. The return envelope will be provided by the student researchers for your convenience.

By signing and returning the enclosed consent form, you are committing yourself to participate in this research, and you are giving your consent to include the information provided by your students in their study. Any student may decline to participate in the study for any reason. The questionnaires will be numbered in order to identify the school classification. All the questionnaires will be kept strictly confidential, and will be referred to in the research only by the type of school, gender or ethnic origin of the student.

After the student researchers finish their research project, the results will be sent to you. Thank you in advance for your participation and cooperation in this study.

Thank you again for your help,
Sincerely,

Jane Toot, PT, Ph.D.
Director of Physical Therapy
Grand Valley State University

Any question or comments should be directed to the above address or to Karen Stob (Oorbeck) at (XXX) XXX-XXXX.
APPENDIX B

CONSENT FORM
CONSENT FORM

Godlewski, Spitzley, and Stob (Oorbeck) Research

Please return this form by Monday, January 16, 1995

☐ I agree to participate in this study. I understand that I am making a firm commitment to these student researchers to help carry out their research. Adequate information has been given to me by the student researchers, and I understand what will be required of me. I am also willing to allow the student researchers to use the information obtained by these questionnaires in their study. I understand that these surveys will be mailed to me prior to the week I indicate on this form.

The most convenient week (before February 16) for me to administer the surveys would be: ____________________________________________________________.

☐ I do not wish to participate in this study.
Please explain reasons for not participating:

Signature: ____________________________________________________________

Please Print Name: __________________________________________________

Name of School: _____________________________________________________

☐ My school uses the Michigan Model of Education.

☐ My school does not use the Michigan Model of Education.
APPENDIX C

SAMPLE OF SURVEY
For questions 1-13, please circle only one correct answer.

1. Grade Level
   A. 9th
   B. 10th
   C. 11th
   D. 12th

2. Gender
   A. Female
   B. Male

3. Ethnic Origin
   A. African-American
   B. Asian
   C. Caucasian
   D. Hispanic
   E. Native American
   F. __________________________

4. Grade Point Average
   A. Average
   B. B average
   C. C average
   D. D average

5. Upon graduation, what are your plans?
   A. Attend college
   B. Attend vocational school
   C. Enter the military
   D. Work full-time
   E. No plans
6. What type of career do you want in the future?
   A. Business
   B. Computer Science
   C. Education
   D. Engineering
   E. Health related
   F. Law
   G. Religion
   H. Science
   I. Undecided
   J. ______________________

7. How familiar are you with the Allied Health Professions? (Examples: X-ray Technicians, Physical Therapists, Nurses, Respiratory Therapists, Speech Pathologists, Occupational Therapists)
   A. Very familiar
   B. Somewhat familiar
   C. Vaguely familiar
   D. Never heard of them

Questions 8-10. What do you think is the minimum level of education required for the following professions?

8. Physical Therapist
   A. High School Diploma
   B. Associate’s Degree
   C. Bachelor’s Degree
   D. Master’s Degree
   E. Doctorate (Ph.D.)

9. Occupational Therapist
   A. High School Diploma
   B. Associate’s Degree
   C. Bachelor’s Degree
   D. Master’s Degree
   E. Doctorate (Ph.D.)

10. Nurse
    A. High School Diploma
    B. Associate’s Degree
    C. Bachelor’s Degree
    D. Master’s Degree
    E. Doctorate (Ph.D.)
Questions 11-13. What do you think is the average beginning salary for the following professionals?

11. Physical Therapist
   A. $10,000.00 to $19,000.00
   B. $20,000.00 to $29,000.00
   C. $30,000.00 to $39,000.00
   D. $40,000.00 to $49,000.00
   E. $50,000.00 to $59,000.00
   F. over $60,000.00

12. Occupational Therapist
   A. $10,000.00 to $19,000.00
   B. $20,000.00 to $29,000.00
   C. $30,000.00 to $39,000.00
   D. $40,000.00 to $49,000.00
   E. $50,000.00 to $59,000.00
   F. over $60,000.00

13. Nurse
   A. $10,000.00 to $19,000.00
   B. $20,000.00 to $29,000.00
   C. $30,000.00 to $39,000.00
   D. $40,000.00 to $49,000.00
   E. $50,000.00 to $59,000.00
   F. over $60,000.00

For questions 14-22, please circle all of the correct answers.

Questions 14-16. What do you think are the job responsibilities of the following professionals? (Circle all correct answers.)

14. Physical Therapist
   A. Treating patients
   B. Conducting research
   C. Educating the patients and their families
   D. Billing insurance companies
   E. Distributing medications to patients
   F. Teaching in colleges or universities
   G. Completing paperwork
   H. Communicating with doctors regarding patients
15. Occupational Therapist
   A. Treating patients
   B. Conducting research
   C. Educating the patients and their families
   D. Billing insurance companies
   E. Distributing medications to patients
   F. Teaching in colleges or universities
   G. Completing paperwork
   H. Communicating with doctors regarding patients

16. Nurse
   A. Treating patients
   B. Conducting research
   C. Educating the patients and their families
   D. Billing insurance companies
   E. Distributing medications to patients
   F. Teaching in colleges or universities
   G. Completing paperwork
   H. Communicating with doctors regarding patients

Questions 17-19. Where do you think the following professionals can work? (Circle all correct answers.)

17. Physical Therapist
   A. Hospitals
   B. Private clinics
   C. People's homes
   D. Nursing homes
   E. Schools
   F. Athletic teams
   G. Doctors' offices
   H. Public Health Department
   I. Corporations / Businesses

18. Occupational Therapist
   A. Hospitals
   B. Private clinics
   C. People's homes
   D. Nursing homes
   E. Schools
   F. Athletic teams
   G. Doctors' offices
   H. Public Health Department
   I. Corporations / Businesses
19. Nurse
A. Hospitals
B. Private clinics
C. People's homes
D. Nursing homes
E. Schools
F. Athletic teams
G. Doctors' offices
H. Public Health Department
I. Corporations / Businesses

Questions 20-22. What types of patients do you think the following professionals work with? (Circle all correct answers.)

20. Physical Therapist
A. Elderly
B. Children
C. Brain Injured Patients
D. Athletes
E. Pregnant Women
F. Spinal Cord Injured Patients
G. Back Injured Patients
H. Burn Patients
I. Joint Replacement Patients
J. Stroke Patients
K. Heart Patients
L. AIDS Patients
M. Cancer Patients

21. Occupational Therapist
A. Elderly
B. Children
C. Brain Injured Patients
D. Athletes
E. Pregnant Women
F. Spinal Cord Injured Patients
G. Back Injured Patients
H. Burn Patients
I. Joint Replacement Patients
J. Stroke Patients
K. Heart Patients
L. AIDS Patients
M. Cancer Patients
22. Nurse
A. Elderly
B. Children
C. Brain Injured Patients
D. Athletes
E. Pregnant Women
F. Spinal Cord Injured Patients
G. Back Injured Patients
H. Burn Patients
I. Joint Replacement Patients
J. Stroke Patients
K. Heart Patients
L. AIDS Patients
M. Cancer Patients

For questions 23-31, please circle only one correct answer.

Questions 23-25. How often do you think the following professionals work with high-tech equipment? (Examples: X-ray machines, treadmills, blood pressure monitors, biofeedback, electrical stimulation, suctioning machines, heart monitors, etc.)

23. Physical Therapist
A. Constantly
B. Frequently
C. Occasionally
D. Never

24. Occupational Therapist
A. Constantly
B. Frequently
C. Occasionally
D. Never

25. Nurse
A. Constantly
B. Frequently
C. Occasionally
D. Never
Questions 26-28. How easy do you think it is for the following professionals to find employment in their field?

26. Physical Therapist
   A. Easy
   B. About Average
   C. Difficult

27. Occupational Therapist
   A. Easy
   B. About Average
   C. Difficult

28. Nurse
   A. Easy
   B. About Average
   C. Difficult

Questions 29-31. Do you think the following professionals have sufficient opportunities to advance their careers?

29. Physical Therapist
   A. Yes
   B. No

30. Occupational Therapist
   A. Yes
   B. No

31. Nurse
   A. Yes
   B. No
APPENDIX D

INSTRUCTION FORM
INSTRUCTIONS FOR THE DISTRIBUTION OF THE SURVEY FORMS

INSTRUCTIONS FOR THE PRINCIPAL:

Please choose two classes consisting of eleventh and/or twelfth grade students at random. Do not choose a class consisting of a specific category of students (i.e. all college-bound students). Each class should consist of students at various educational levels to increase the likelihood of receiving results that will be representative of all eleventh and twelfth grade students. We recommend choosing a class which is required by all students before graduation, such as history or government. Please distribute the survey forms to the two appropriate teachers as soon as possible. Any student not wishing to participate is not required to do so. The estimated time to complete the survey form is 10-15 minutes. Please collect the survey forms from each teacher immediately after distribution, as the completed surveys will be picked up at the school’s office by one of the student researchers on Thursday, February 9, 1995. Thank-you once again for your participation.

INSTRUCTIONS FOR THE TEACHER:

The estimated time to complete the survey is 10-15 minutes. Please do not define any words for the students. If a student objects to completing the survey, he/she is not required to do so. If this situation should arise, please strongly encourage the student to participate before giving him/her the option not to complete the survey. Please return all survey forms to your principal immediately after distribution. Thank-you for your participation.

Please read only the following to the students prior to distribution:

Three students from Grand Valley State University are conducting a study to determine the level of knowledge and perceptions of eleventh and twelfth grade students regarding physical therapy, occupational therapy, and nursing. Your class has been chosen at random to participate in the study and your participation is very much appreciated. Do not write your name anywhere on the survey form. All information which you provide will remain confidential and will be used for information purposes only. Follow the directions carefully and answer each question to the best of your ability. If you are not sure of an answer, guess. Do not leave a question unanswered. Make sure to read both sides of each page. It will take about 10-15 minutes to complete the survey. Thank-you for your help, and your participation.
APPENDIX E

SAMPLE OF CODED SURVEY
(1) School Classification
   A. Urban
   B. Suburban
   C. Rural

(2) School Classification
   A. Public
   B. Private

For questions 1-13, please circle only one correct answer.

(3) 1. Grade Level
   A. 9th
   B. 10th
   C. 11th
   D. 12th

(4) 2. Gender
   A. Female
   B. Male

(5) 3. Ethnic Origin
   A. African-American
   B. Asian
   C. Caucasian
   D. Hispanic
   E. Native American
   F. ______________________

(6) 4. Grade Point Average
   A. A average
   B. B average
   C. C average
   D. D average
5. Upon graduation, what are your plans?
A. Attend college
B. Attend vocational school
C. Enter the military
D. Work full-time
E. No plans

6. What type of career do you want in the future?
(8) A. Business
(9) B. Computer Science
(10) C. Education
(11) D. Engineering
(12) E. Health related
(13) F. Law
(14) G. Religion
(15) H. Science
(16) I. Undecided
(17) J. __________________________

7. How familiar are you with the Allied Health Professions? (Examples: X-ray Technicians, Physical Therapists, Nurses, Respiratory Therapists, Speech Pathologists, Occupational Therapists)
A. Very familiar
B. Somewhat familiar
C. Vaguely familiar
D. Never heard of them

Questions 8-10. What do you think is the minimum level of education required for the following professions?

(19) 8. Physical Therapist
A. High School Diploma
B. Associate's Degree
C. Bachelor's Degree
D. Master's Degree
E. Doctorate (Ph.D.)

(20) 9. Occupational Therapist
A. High School Diploma
B. Associate's Degree
C. Bachelor's Degree
D. Master's Degree
E. Doctorate (Ph.D.)
(21)10. Nurse
   A. High School Diploma
   B. Associate’s Degree
   C. Bachelor’s Degree
   D. Master’s Degree
   E. Doctorate (Ph.D.)

Questions 11-13. What do you think is the average beginning salary for the following professionals?

(22)11. Physical Therapist
   A. $10,000.00 to $19,000.00
   B. $20,000.00 to $29,000.00
   C. $30,000.00 to $39,000.00
   D. $40,000.00 to $49,000.00
   E. $50,000.00 to $59,000.00
   F. over $60,000.00

(23)12. Occupational Therapist
   A. $10,000.00 to $19,000.00
   B. $20,000.00 to $29,000.00
   C. $30,000.00 to $39,000.00
   D. $40,000.00 to $49,000.00
   E. $50,000.00 to $59,000.00
   F. over $60,000.00

(24)13. Nurse
   A. $10,000.00 to $19,000.00
   B. $20,000.00 to $29,000.00
   C. $30,000.00 to $39,000.00
   D. $40,000.00 to $49,000.00
   E. $50,000.00 to $59,000.00
   F. over $60,000.00
Questions 14-16. What do you think are the job responsibilities of the following professionals? (Circle all correct answers.)

14. Physical Therapist
   (25) A. Treating patients
   (26) B. Conducting research
   (27) C. Educating the patients and their families
   (28) D. Billing insurance companies
   (29) E. Distributing medications to patients
   (30) F. Teaching in colleges or universities
   (31) G. Completing paperwork
   (32) H. Communicating with doctors regarding patients

15. Occupational Therapist
   (33) A. Treating patients
   (34) B. Conducting research
   (35) C. Educating the patients and their families
   (36) D. Billing insurance companies
   (37) E. Distributing medications to patients
   (38) F. Teaching in colleges or universities
   (39) G. Completing paperwork
   (40) H. Communicating with doctors regarding patients

16. Nurse
   (41) A. Treating patients
   (42) B. Conducting research
   (43) C. Educating the patients and their families
   (44) D. Billing insurance companies
   (45) E. Distributing medications to patients
   (46) F. Teaching in colleges or universities
   (47) G. Completing paperwork
   (48) H. Communicating with doctors regarding patients
Questions 17-19. Where do you think the following professionals can work? (Circle all correct answers.)

17. Physical Therapist
   (49) A. Hospitals
   (50) B. Private clinics
   (51) C. People's homes
   (52) D. Nursing homes
   (53) E. Schools
   (54) F. Athletic teams
   (55) G. Doctors' offices
   (56) H. Public Health Department
   (57) I. Corporations / Businesses

18. Occupational Therapist
   (58) A. Hospitals
   (59) B. Private clinics
   (60) C. People's homes
   (61) D. Nursing homes
   (62) E. Schools
   (63) F. Athletic teams
   (64) G. Doctors' offices
   (65) H. Public Health Department
   (66) I. Corporations / Businesses

19. Nurse
   (67) A. Hospitals
   (68) B. Private clinics
   (69) C. People's homes
   (70) D. Nursing homes
   (71) E. Schools
   (72) F. Athletic teams
   (73) G. Doctors' offices
   (74) H. Public Health Department
   (75) I. Corporations / Businesses
Questions 20-22. What types of patients do you think the following professionals work with? (Circle all correct answers.)

20. Physical Therapist
   (76) A. Elderly
   (77) B. Children
   (78) C. Brain Injured Patients
   (79) D. Athletes
   (80) E. Pregnant Women
   (81) F. Spinal Cord Injured Patients
   (82) G. Back Injured Patients
   (83) H. Burn Patients
   (84) I. Joint Replacement Patients
   (85) J. Stroke Patients
   (86) K. Heart Patients
   (87) L. AIDS Patients
   (88) M. Cancer Patients

21. Occupational Therapist
   (89) A. Elderly
   (90) B. Children
   (91) C. Brain Injured Patients
   (92) D. Athletes
   (93) E. Pregnant Women
   (94) F. Spinal Cord Injured Patients
   (95) G. Back Injured Patients
   (96) H. Burn Patients
   (97) I. Joint Replacement Patients
   (98) J. Stroke Patients
   (99) K. Heart Patients
   (100) L. AIDS Patients
   (101) M. Cancer Patients

22. Nurse
   (102) A. Elderly
   (103) B. Children
   (104) C. Brain Injured Patients
   (105) D. Athletes
   (106) E. Pregnant Women
   (107) F. Spinal Cord Injured Patients
   (108) G. Back Injured Patients
   (109) H. Burn Patients
   (110) I. Joint Replacement Patients
   (111) J. Stroke Patients
   (112) K. Heart Patients
   (113) L. AIDS Patients
   (114) M. Cancer Patients
Questions 23-25. How often do you think the following professionals work with high-tech equipment? (Examples: X-ray machines, treadmills, blood pressure monitors, biofeedback, electrical stimulation, suctioning machines, heart monitors, etc.)

(115) 23. Physical Therapist
   A. Constantly
   B. Frequently
   C. Occasionally
   D. Never

(116) 24. Occupational Therapist
   A. Constantly
   B. Frequently
   C. Occasionally
   D. Never

(117) 25. Nurse
   A. Constantly
   B. Frequently
   C. Occasionally
   D. Never

Questions 26-28. How easy do you think it is for the following professionals to find employment in their field?

(118) 26. Physical Therapist
   A. Easy
   B. About Average
   C. Difficult

(119) 27. Occupational Therapist
   A. Easy
   B. About Average
   C. Difficult

(120) 28. Nurse
   A. Easy
   B. About Average
   C. Difficult
Questions 29-31. Do you think the following professionals have sufficient opportunities to advance their careers?

(121) 29. Physical Therapist
   A. Yes
   B. No

(122) 30. Occupational Therapist
   A. Yes
   B. No

(123) 31. Nurse
   A. Yes
   B. No