DOCUMENT RESUME

ED 070 817 VT 017 823

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TITLE	Effects of Participation in a Health Careers Orientation Program and Family Support for a Health Career Choice on Health Career Interests of Young People.
INSTITUTION	Pennsylvania Health Council, Inc., Harrisburg.; Pennsylvania State Dept. of Health, Harrisburg.
SPONS AGENCY	Association of American Medical Colleges, Washington, D. C.; Office of Economic Opportunity, Washington, D.C.
PUB DATE	Jan 71
NOTE	76p.
EDRS PRICE	MF-$0.65 HC-$3.29
DESCRIPTORS	Career Choice; Disadvantaged Youth; *Family Influence; *Health Occupations; Health Occupations Education; Manpower Development; Occupational Guidance; Parent Student Relationship; *Participant Characteristics; Program Descriptions; *Program Effectiveness; Statistical Data; Vocational Development; Vocational Education; *Vocational Interests

ABSTRACT

The effects of two factors which may influence the interests of young people in a health career are examined--family support and participation in a careers orientation program. An experimental group of 27 Grade 8 students was matched with a control group of 27 students according to parental education, color, and sex. The experimental group attended a 15-week program in a hospital setting to observe the task performances of health personnel. Field interviews were held for parents and older siblings. Data analysis was presented in tables, revealing that those who had strong family support were more than twice as likely to show interest in an allied health career as those without such encouragement. The same ratio applied for program participants, whose family support was much greater than for non-participants. Students in a coal mining community and in a Puerto Rican community were also included. Limitations to this study include lack of information about student selection, lack of knowledge about relationships among variables, and the necessity for further longitudinal studies. (AG)

HEALTH CAREERS PROGRAM, FAMILY SUPPORT, AND HEALTH CAREER INTERESTS OF YOUNG PEOPLE

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in cooperation with
THE U. S. OFFICE OF ECONOMIC OPPORTUNITY
and
THE ASSOCIATION OF AMERICAN MEDICAL COLLEGES

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Office of Economic Opportunity Project No. 8060
administered through
The Association of American Medical Colleges

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ACKNOWLEDGMENTS

Many persons assisted us with this project. Without their interest and help, it would never have been completed.

Mr. Vincent T. Goble, Project Coordinator, collected all the information from school records needed for sampling as well as supervising field operations and preparing data for machine tabulation.

Mrs. Betty Matter, Mr. Carlos Ponce, Miss Ruth Werley and Mr. Earl Douglas conducted nearly all of the interviews with students and other family members.

Dr. John R. Bonfield, Coordinator of Pupil Services, Lancaster City Schools, Mr. Andrew J. Mihalik, Jr., Principal of West Junior High School in Shamokin, Mr. William Reindel, Principal of Edison Junior High School, and Mr. John W. Maloney, III, Principal of Camp Curtin Junior High School all were extremely helpful in making available those records and manpower which they provided us for the beginning phases of the study.

Mrs. Grace White, Mr. Wayne Smitz, and Miss Frances Rowe, counsellors at Edison, Camp Curtin and West Junior High Schools, respectively, provided considerable help in identifying and selecting students to be interviewed.

No project of this type could be conducted without administrative and secretarial assistance. Mr. Raymond Clugh, Executive Director, Pennsylvania Health Council, Inc. served as administrator

for the project and Miss Helene Hlushak and Mrs. Roberta Ludwig provided secretarial assistance.

Deep appreciation is also expressed to George W. Schelzel, Research Associate, Division of Behavioral Science, Pennsylvania Department of Health, for his assistance in standardizing the coding instructions and in the computer programming phases of the projects.

Mrs. Virginia Parkum provided assistance in the coding of the data.

Lest we forget the basic purpose of the project, we certainly want to express thanks to the students and the members of their families for giving us time from their busy schedules for the interviews.

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EFFECT OF FAMILY SUPPORT AND PARTICIPATION IN AN ORIENTATION PROGRAM ON INTEREST IN HEALTH CAREERS

by

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Background and Rationale - Need for Allied Health Manpower

To say that there is a "health manpower shortage" is to repeat a phrase used too much already. Statistics of all types portray a picture of the supply of physicians, dentists and other highly trained manpower increasing at a slower rate of growth than population. This is occuring and will occur at a time when people are demanding more and higher quality health care.

Increasing the number of workers in the allied health professions has been suggested as one of the more realistic solutions to decreasing the shortage of health manpower.[1] Underlying this approach is the notion that rather than continually wrestle with the more expensive and more difficult problem of increasing the supply of physicians, dentists and other highly trained and very scarce personnel, perhaps greater attention should be given to having less highly trained persons perform the tasks in health care which require less complex skills. This would free more

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[1]The reader is referred to Harry I. Greenfield, Allied Health Manpower: Trends and Prospects (New York: Columbia U. Press, 1969) esp. pp. 19-20; Thomas D. Hatch, "Allied Health Manpower: "An Answer to the Manpower Crisis," Hospital Progress, June 1970, pp. 69-71. Rashi Fein, The Doctor Shortage: An Economic Diagnosis (Washington, D. C.: The Brookings Institution, 1967) pp. 145-147.

highly trained persons for the tasks for which they are specifically trained. An increased supply of allied health manpower can help to fill this gap. Greenfield suggests that we use the term "allied health personnel" to denote all of the health occupations below the (autonomous) doctoral level (M.D., D.O., D.D.S.)[2] He further comments that:

> "The allied health professionals are those who have attained a minimum of a baccalaureate degree and who, in some cases, hold master's and doctoral degrees. The allied health technicians are those who are trained mainly on the vocational school levels. The third segment of this group, the allied health assistants, are all of the other personnel who are employed in the direct or indirect provision of health services and who have attained various educational levels up to and including high-school graduation."[3]

He uses three categories for classifying allied health personnel. These are: (1) allied health professionals, (2) allied health technicians and (3) allied health assistants.

If we assume that a realistic and effective solution to the health manpower crisis is to increase the supply of allied health personnel, then an important question arises as to what are ways by which this supply can be increased. Alternatives here would include examination of: the training process,[4]

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[2]Greenfield, op. cit., p. 23.
[3]Greenfield, op. cit., pp. 25-26.
[4]Problems in the training and advancement of allied health workers are portrayed quite well in: Sally Greisdorf Halloway, "Barriers to Developing Career Ladders in Hospitals," paper presented at the annual meeting of the Rural Sociological Society, Washington, D. C., August 27-30, 1970.

The following objectives guided the study:

(1) To determine what kinds of support or nonsupport family members provide to disadvantaged young persons in considering health careers, and whether this support or nonsupport makes any difference in choosing such a career.

(2) To determine if involvement of a young person in a health careers orientation program has any effect on his interest in a health career.

(3) To determine if family support to enter a health career is of a different nature and intensity when the young person is in a health careers orientation program than if he is not in this program.

Hypotheses

The following four hypotheses, developed in line with the objectives, were tested in the study:

(1) Students receiving family encouragement to choose an allied health career were more likely to have an interest in a health career than those not receiving such support.

(2) Students participating in the health careers orientation program were more likely to have an interest in a health career than those not participating.

(3) Students who participated in the health careers orientation program were more likely to receive family encouragement to choose a health career than those who did not participate.

the communication processes between applicant and training agency,[5] the dynamics of counseling and guidance in high schools,[6] and knowledge of such careers and their requirements. Yet another question to be asked is what are some of the factors which influence a young person's decision to become interested in a health career. The study reported here examined the effect of two possible influences. These are family support and participation in a careers orientation program.

In emphasizing the importance of allied health careers, we do not at all intend to convey the notion that only a select few should be counseled or recruited for the doctorate level professions. What we are emphasizing is that in terms of the desperate need, and the alternative methods for meeting this need, relatively more emphasis needs to be placed on increasing the supply of allied health manpower.

Objectives

This present report is a report of a study which attempted to determine if: (1) participation in a program designed to orient young people to allied health careers, and (2) family encouragement to choose an allied health career have an influence on becoming interested in a health career.

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[5]The problem of breakdown in communications between applicant and the training center is nicely documented in Can They Be Salvaged? A Report of the Health Careers Project (Providence, R.I.: Rhode Island Council of Community Services, Inc., 1970).

[6]The relationship of counseling to health career choice was pointed out to the Director of the present proposed project by a site visitor on a previous manpower project. High school counsellors, he pointed out, will often tend to steer only "better" students to health careers.

The rationale for the hypothesis on family effect on health career interest was that in spite of peer group influences, the family has been shown to have an influence on the young person's decision about matters related to career plans.[7]

The rationale for the hypothesis on participation in a health careers orientation program was the assumption that exposure to health careers operation, in a day-to-day setting, will increase interest in a health career. By watching technicians, clerks and other allied health personnel in their everyday tasks, it was felt that the students would have a greater awareness and understanding of these health careers and therefore be more interested in them than those who did not have this opportunity. These allied health occupations are usually less visible to the public and receive less "glory" and attention than those of nurse, physician and dentist.

The rationale for the third hypothesis was that the participation would increase family interest in health careers.

Study Design

The study design is cross-sectional. No measures were taken of participants' and non-participants' interest in health careers before the orientation program.

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[7]See: Crawford, Charles O. "Family Attachment, Family Support to Migrate and Migration Plans of Young People," Rural Sociology, Vol. 31, No. 3, September, 1966; Family Encouragement Does Make A Difference in Migration Plans, Department of Rural Sociology Research Summary Report No. 1, N.Y.S. College of Agriculture, Cornell University, 1964; Family Factors in The Migration Plans of Youth: High School Seniors in St. Lawrence County, New York, Department of Rural Sociology, Mimeo. Bulletin No. 65, N.Y.S. College of Agriculture, Cornell University, 1964: Facilitating Functions of the Family in The Migration Plans of High School Seniors, St. Lawrence County, New York, 1962, Ph.D. Dissertation, Cornell University, 1963. An extensive bibliography on The Family and Occupational Choice has been compiled by Jacobsen et al. See: Jacobsen, R.B.; A.L. Flygstad; and R.H. Rodgers, The Family and Occupational Choice: An Annotated Bibliography (Eugene, Oregon: University of Oregon, Center for Research in Occupational Planning, 1966). Other more recent literature on this topic would include: Bennett, William S., Jr. and Noel P. Gist "Class and Family Influences on Student Aspirations" Social Forces, 1970.

Definition of Variables

The dependent variable of central focus in the study was interest in a health career. It should be made explicit that the dependent variable was not choice of but interest in a health career. This interest was measured by means of a number of questions in the interview schedule inquiring of students' career interests. A copy of the interview schedule for students is presented in Appendix A. In some instances the focus was on allied health careers; in others on any health career and in yet others, on occupational plans in general.

There were two primary independent variables in the study. One was participation in a health careers orientation program. The description of this program is presented in Appendix B. Suffice it to say here that this program enabled students to be in a hospital setting once a week for fifteen weeks during the 1969-70 school year to observe the performance of tasks by many types of hospital personnel.

The second main independent variable was family encouragement to enter a health career. This was measured by several questions inquiring of suggestions, advice and other forms of encouragement or support offered by parents, siblings and other relatives. A copy of the interview schedule for parents and siblings is presented in Appendix C.

Selection of Subjects

Since one of the primary objectives of the study was to evaluate the effects of participation in the Pennsylvania Health Council's health careers program, students in this program were included as the "experimental"group. There were fourteen eighth grade students from each of two schools, Edison and Camp Curtin

Junior High Schools in Harrisburg, who were enrolled in the fifteen week program.

Selection of "control" students was done in such a way so as to obtain a matching with the "experimental" students, those participating in the Council's program. The first step in selecting the control students was to determine the distribution of the experimental students with regard to sex, parental education and color -- three factors thought to have an important bearing on career choice and on which it was believed important to match the two groups.

The characteristics of sex and color were dichotomous and relatively easy to consider as matching variables. Parental education, however, posed some problems. Should we consider only the father's education? The mother's? Or both? For either of the alternatives chosen, there was the additional problem of what to do if one of the two parents was not present or if the educational level of one or both was not known. Once that decision was made, the question then arose as to what cutting points should be used.

After much deliberation and discussion it was decided to consider educational levels of both the mother and father, and to choose cutting points that seemed reasonable in terms of the distribution of participating students at each school, rather than attempt to establish cutting points which would apply to both schools. Four categories of parental education were developed at each school.

Once the fourteen participants at each of the two schools were placed into sixteen categories according to sex, color and parental education, (2x2x4 categories) the next step was to match another group at each school with the participants. These two additional groups would serve as control groups with regard to examining the

effects of participation in career choice.

To select the matched control group at Camp Curtin Junior High, all 326 eighth grade students not participating in the health careers program were identified by color, sex, and parental education, and placed into one of the same sixteen categories earlier derived for the experimental students at that school. Since the categories developed earlier were done in terms of the parental educational level of the participants only, rather than as a general set of categories developed for classifying all students, there were some students not classified into the sixteen categories. After alphabetically listing the students in each of the categories, the students were numbered from 1 to n in each group and a table of random numbers was used to select the students.

The number of eighth grade students at Edison Junior High School was 610. School personnel indicated that if at all possible, they would prefer, because of staff limitations, not being asked to prepare or assist in the preparation of lists of all students. This preparation or assistance meant helping to interpret data on color, sex and parental education. After discussing possible alternatives, it was decided that within each of the eighteen sections of eighth graders (divided according to rooms), students would be listed alphabetically and every fifth name would be selected for further consideration in control group selection. The procedure was to choose, in Section 1, the first student listed as the starting point for selecting every fifth student in Section 1. In the second section, the second name was chosen. In the sixth, eleventh and sixteenth sections, the cycle was repeated with the first student being chosen in Sections six, eleven and sixteen, the second being chosen as the starting points in Section seven, twelve and seventeen, and so on.

Using the procedure outlined above a list of 168 names (82 females and 86 males) was obtained. Work was then done to identify students on the list who could be placed into the same sex, color and parental educational categories as were used to classify the experimental students at Edison. Following the placement of students into the respective categories, alphabetical lists for each category were prepared and the student were assigned numbers. A table of random numbers was then used to select the needed number of students in each category.

The sponsoring agency for the project, The Association of American Medical Colleges, had requested that the project include other disadvantaged students. In particular, they suggested Puerto Rican students and students from a coal mining community. Many coal mining towns in Pennsylvania have been on the economic decline because of decreased production of coal.

To obtain a sample of students from a coal mining community, the Principal of West Junior High School in Shamokin was contacted and agreed to cooperate with the study. Shamokin is a town which has felt some impact of the decline of use of coal. Fourteen eighth grade students were selected who were matched with the sex and parental educational characteristics of the fourteen students from Edison Junior High School. (There were no black students in the eighth grade at West Junior High) The procedure used in selecting students in Shamokin was the same as that used in selecting the control group of students at Edison. Any students having same sex and parental educational characteristics of those students in the categories used at Edison were placed in the appropriate categories. Then, students within each category, were listed alphabetically,

assigned numbers, and the appropriate number was selected using a table of random numbers.

To obtain a group of Puerto Rican students, the Superintendent of the Lancaster School System was contacted. It was found that Puerto Rican students were in attendance at three junior high schools in Lancaster.

The original plan was to match fourteen Puerto Rican eighth grade students with the fourteen experimental students at Camp Curtin Junior High School. However, the data on the Puerto Rican students revealed that the educational levels of the parents was so much lower than those of the experimental group at Camp Curtin that complete matching was impossible. As a result of this discovery, the Puerto Rican students with the highest parental educational level were selected in such a way as to provide the same ratio of males and females existing in the Camp Curtin group.

It is recognized that although the students in Shamokin and Lancaster schools are somewhat matched to the Edison and Curtin groups respectively, they still do not strictly compare to the groups because they are in different types of communities.

The number of students in the various parental education - color - sex categories for the experimental and control groups at Camp Curtin are presented in Table 1. The distribution for the Puerto Rican students is given in Table 2. In Table 3 are distributions for the students at the Edison and West Junior High Schools.

Table 1 Distribution of "Experimental" and "Control" Students at Camp Curtin Junior High School According to Parental Education, Color, and Sex.

Parental Education, Color and Sex	Experimental	Control
Both parents completed 12 or more years		
Black - Male	1	1
Female	5	5
White - Male	-	-
Female	-	1
One parent completed 12 years, one did not		
Black - Male	1	1
Female	-	-
White - Male	-	-
Female	-	-
Neither parent completed 12 years		
Black - Male	1	1
Female	2	2
White - Male	-	-
Female	-	-
Education of one or both parents unknown		
Black - Male	-	-
Female	2	1
White - Male	-	-
Female	1	1
Total	13	13

Table 2 Distribution of Puerto Rican Students in Lancaster Schools by Parents' Educational Level

Parental Education and Sex	Number of Students
Both completed 12 or more years	
Male	-
Female	-
One completed 12, one did not	
Male	2
Female	2
Neither completed 12	
Male	1
Female	8
Education of one or both parents unknown	
Male	-
Female	1
Total	14

Table 3 Distribution of "Experimental" and "Control" Students at Edison Junior High School, and Selected Students at West Junior High School, According to Parental Education, Color, and Sex.

Parental Education, Color, Sex	Experimental	Control	West Junior High
Both completed 12, or Mother more than 12 years			
Black - Male	1	1	-
Female	1	1	-
White - Male	2	2	3
Female	3	3	4
Father 9 years, Mother 12 or 12+ years			
Black - Male	-	-	-
Female	-	-	-
White - Male	1	1	1
Female	2	2	2
Father more than 12, Mother 12			
Black - Male	1	1	-
Female	-	-	-
White - Male	-	-	1
Female	-	-	-
Father unknown, mother 12 or 12+			
Black - Male	-	-	-
Female	-	-	-
White - Male	1	1	1
Female	2	2	2
Total	14	14	14

It will be noted that for Camp Curtin (Table 1) there was not perfect matching in two categories. In the category "Both parents completed 12 or more years, white, female," there is one more person in the control than in the experimental group. The student in the experimental group had moved before the interviewer was able to interview her. Rather than eliminate the data on her matched partner, it was decided to keep the partner in the control group for data analysis purposes.

In the category "Parent education unknown, black, female," the additional person selected in the control group could not be located and interviewed in spite of several attempts. No attempt was made to obtain and interview a replacement and her family.

Interviewing and Field Procedure

At the same time the students for the study were being selected, the interview schedules were being designed and the interviewers recruited. Initially, four interviewers were hired. Three were seniors at the Capitol Campus of the Pennsylvania State University and one was Director of the Migrant Program of the Reading Y.M.C.A. Two of the seniors were female and white, one was a black male. The fourth interviewer was Puerto Rican by birth and able to speak Spanish very fluently. The Puerto Rican interviewer was hired to interview the Puerto Rican students and families in Lancaster. One of the females was hired to conduct interviews among students and families at Edison and the other to conduct the interviews in Shamokin. The black male was hired to conduct the interviews among students and families at the Camp Curtin school.

There were two interview schedules, one of which was divided into what amounted to two sub-interview schedules. The one interview schedule was designed for the participating students at Edison and Camp Curtin, and their control counterparts, and for the students at the Shamokin and Lancaster schools. A copy of the student interview schedule is presented in Appendix A. The other interview schedule consisted of two parts. The first section of this interview schedule was designed for the parents or guardians of the students, and older siblings not in school. The second part was designed for the older siblings of the participating students in school. A copy of this schedule is presented in Appendix C.

After the interviewers were hired, the student interview schedule was pretested by each of the four interviewers. The subjects for pretesting were students from the schools and communities in which the respective interviewers were to conduct their interviews, excluding those students that had been selected for the study. Some preliminary training had been given to the interviewers before pretesting.

Once the student interview schedule was pretested, the comments of the interviewers were considered and a final draft was prepared. More formal and detailed training was then given to interviewers and the interviewing of students began.

The interview schedule for parents and older siblings (henceforth called the "adult interview schedule") was pretested by the interviewers in the same manner as that for the students. This was carried out before all student interviews were completed. Once the pretesting was completed the final draft of the schedule was designed.

The interviewers completed the student interviews at their respective schools before the adult interviews were started. This meant that adult interviews began at different times for each of the four schools since the interviewers did not all complete student interviews at the same time. Individual training for adult interviews was given to interviewers.

Before all interviewing was completed, one additicnal black male interviewer had to be hired to complete interviews with the black families as the black male interviewer originally hired resigned before the interviewing of adults was completed.

Data Processing

The responses from both student and adult interviews were coded and code-checked and made ready for data analysis. The coded information was then used as input for data analysis by computer. The analysis were made through the General Electric Time Sharing Computer System.

Summary of Characteristics of Students and Families

Table 4 contains a summary of characteristics of the students and the families from which they came. The findings presented in the table are based on results of interviews with students and parents.

In many instances there were discrepancies in family information between student interviews and parent interviews. When there were discrepancies, the case was that students tended to list more family members than parents and other adults listed. Comments by interviewers indicated that some adults feared that the study results might affect their welfare status and as a consequence were reluctant to list certain family members. Whenever there was a discrepancy on family size, student responses were taken as talks with interviewers revealed this was a more realistic measure.

Table 4 indicates that there was a predominance of females in the study. Females outnumbered males two to one. Final matching between the experimental and control groups at Camp Curtin and Edison Schools with regard to sex was very close.

With regard to family composition, it will be noted from Table 4 that 64 of the 82 student families (78 percent) were identified as "complete" families in which husband and wife were both listed as present. The E-C (experimental-control) match on this factor was good at Edison but poor at Camp Curtin.

Most of the "other" family situations consisted of mother-children families.

The third analysis presented in Table 4, whether students were living with step-parents, reveals that nearly all students were not living with step-parents.

In terms of number of siblings, 46 of the 82 students (56 percent) had two or more brothers or sisters. Again, the E-C match was "good" for Edison but poor for Camp Curtin. Only 3 of the control students at Camp Curtin had less than three siblings. The remaining ten had three or more.

As might be expected, the number of persons in the household followed approximately the same pattern as number of siblings. That is, forty-nine students lived in families with five or more persons. Again, a "poor" E-C match was obtained at Camp Curtin.

The analysis in Table 4, regarding color/race reveals that 39 of the students (48 percent) were white, 29 (35 percent) were black and the remaining 14 (17 percent) were Puerto Rican. Since this was one of the original matching factors, the good E-C match was expected.

To classify occupation of the head of household, the occupation of the father was used when a father was present. Otherwise, the occupation of the mother or some other person serving as head of the household was used. A slightly modified

version of the standard census classification was used to classify occupation into eight categories. Combining was then performed for analysis purposes. This combining was done in such a way as to provide a white collar - blue collar dichotomy.

Of the 68 household heads in the student families, on whom there was information from interview schedules, 48 or 71 percent were classified as holding blue collar occupations.

In terms of educational level of the household head, a significant point is that a rather high level of no information was obtained. No attempt was made to put into analysis for Table 4 the parents educational level obtained from school records as it was felt that meaningful comparisons could not then be made among all groups with regard to household head since identification of household head could not be made from school records.

Table 4 - Selected Characteristics of Study Students, by School

Characteristic	School						Total
	Edison		Camp Curtin		Shamokin	Lancaster	
	Exp.	Control	Exp.	Control			
Sex							
Male	6	6	2	3	6	3	26
Female	8	8	11	10	8	11	56
Family Comp.							
Husband, Wife	11	10	5	12	14	12	64
Other	3	4	8	1	-	2	18
Living with Step parents							
yes	-	-	1	1	0	3	5
no	14	14	12	12	14	11	77
Number of Siblings							
0	4	3	2	1	3	0	13
1	4	3	4	1	6	5	23
2	2	6	2	1	3	1	15
3 or more	4	2	5	10	2	8	31
No. persons in household							
2-4	8	6	6	2	7	4	33
5+	6	8	7	11	7	10	49

Table 4 - Selected Characteristics of Study Students, by School

Characteristic	School						
	Edison		Camp Curtin		Shamokin	Lancaster	Total
	Exp.	Control	Exp.	Control			
Color/race							
Black	3	3	12	11	-	-	29
White	11	11	1	2	14	-	39
Puerto Rican	-	-	-	-	-	14	14
Occupation of household head							
No information	-	1	5	-	-	8	14
Disabled, retired, unemployed	-	-	-	-	3	-	3
Housewife	-	1	1	1	-	1	4
White Collar	4	3	2	2	2	-	13
Blue Collar	10	9	5	10	9	5	48
Education of household head							
No information	3	6	9	2	1	7	28
Less than 12	5	4	4	4	9	7	33
12+	6	4	-	7	4	-	21

Measures of Health Career Interest and Family Support Used In Analysis

Interest in health careers, the dependent variable, was indexed in two ways. First, using responses to question No. 4 on the student interview schedule ("What kind of work do you think you would like to do when you are ready to start working someday"), responses were coded as (1) directly or indirectly related to health or (2) not related to health or undecided.

Three persons independently coded student responses and a consensus was arrived at on this point so that one valid response could be coded. A directly related health career was an identifiable career in the health field. An indirectly related career was one not strictly in the health field but somewhat related. Thus, interest in a health related career was one measure of the dependent variable.

A second dimension of the dependent variable was tapped in question No. 5 - "Have you ever thought about taking a job in some field related to health--like being a doctor, a nurse, a dentist, a medical technician or anything like this?" Students could respond "yes" or "no" and if they answered "yes," the particular health career mentioned was coded. For analysis purposes it was necessary to combine responses into two categories. Since the aim of the project was to focus on interest in allied health careers, it was decided to separate, as one category,

expressed interest in an allied health career. Into the other category were placed responses of "doctor," dentist and those indicating no interest in a health career. Only 7 of the 82 students expressed an interest in being a physician or a dentist. Thirty-nine of the 82 (48 percent selected an allied health career. Of the 39, 23 were interested in nursing, 8 were interested in medical technology, 1 in a nursing aide, 2 in medical secretary work and 5 were interested in other allied health careers.

Family encouragement or support for a health career was measured in two ways. The first was to use responses to question No. 8 in which students were asked if their parents had ever indicated the type of work they would like to see them enter someday. If a student indicated his parents had offered suggestions, he was asked what they were. These responses were coded as health - nonhealth.

Three categories are used for analyzing responses to question No 8. The categories were: (1) no suggestion for any type of work, (2) suggestion for health work and (3) suggestion for nonhealth work.

The second measure for family support was based on a summation of responses to questions 7, 8 and 9. Number 7 inquired whether siblings had suggested work, number 9 asked about suggestions from other persons in the family. Whenever a health related career was mentioned in each question, a

score of 1 was assigned. If a nonhealth occupation was suggested, or if no occupational suggestions were made, a score of 0 was assigned. This meant that scores could range from 0 to 3 for each student.

The suggestions from siblings and other family persons were not large enough to merit separate analysis and this is why responses in these two cases were used along with parental support to arrive at a summary score. Siblings made suggestions for future work in eleven cases. Two of these were for health occupations and nine were for nonhealth occupations. In the case of suggestions from other family members, a total of 23 suggestions were made -- four for health and 19 for nonhealth.

Twenty-six students had a support score of 1 while three had a support score of 2. The remaining 53 had a score of 0 on one or more of the three items.

Results - Hypothesis on Family Support

One of the three main hypotheses of the study was that students receiving family encouragement to choose an allied health career were more likely to have an interest in a health career than those not receiving such support.

The analyses used in testing this hypothesis are presented in Tables 5, 6, 7 and 8. (It will be recalled from the preceeding section that two dimensions of health career choice and two dimensions of family support were developed for analysis. Thus, four analyses are needed. These are presented in Tables 5, 6, 7 and 8 and are for all 82 students).

An inspection of Table 5 reveals that parental suggestions for choice of a health career made a significant difference in whether students expressed an interest in a health career.

Table 5 - Interest in Related Health Work and Parental Support for Health Work

Interest	Parental Support: No support for any work	Support for health work	Support for nonhealth work	Total
	------ percent ------			
Health related	27	58	17	33
Not health related	73	42	83	67
Total	100	100	100	100
N=	26	26	30	82

$X^2 = 11.23$ $p = .004$ $V^2 = .137$

The obtained X^2 value had a chance probability of .004.[8]

Students receiving suggestions from parents for a health occupation were three times as likely to choose a health occupation as those receiving support for a nonhealth occupation (58 percent vs. 17 percent). They were about twice as likely to be interested in a health career as those not receiving suggestions for any kind of future work (58 percent vs. 27 percent). The statistic V^2 reveals the amount of variation in occupational choice which can be accounted for by variation in parental support. It is computed by the formula $V^2 = \frac{X^2}{N \text{ Min } (r-1, c-1)}$ In the case of a 2 x 2 or 2 x 3 table the formula becomes $\frac{X^2}{(N)(2)}$[9]

V^2 can have values ranging from 0 to 1. It will be noted in Table 5 that the obtained V^2 has a value of .137 This means that approximately 14 percent of the variation in occupation interest is accounted for by parental support.

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[8] X^2 is the test of significance used in this report where possible. If more than one cell in a table had an expected frequency of less than 5, a Fishers Exact Probability was computed according to Sidney Siegel, Nonparametric Statistics (New York: McGraw-Hill Book Co., 1956), pp. 96-104. The statistical level of significance used throughout this report will be .05. Any probability larger than this value will render a finding statistically insignificant. Any value of .05 or smaller will be taken as an indication of statistical significance.

[9] For a discussion of V^2 see: Hubert M. Blalock, Social Statistics (New York: McGraw-Hill Book Co., 1960), p. 230.

Table 6 reveals that persons with family support scores of 1 or more were about 2 1/2 times as likely to express an interest in a health career as those with scores of 0 or those receiving no suggestions for future work. The obtained X^2 value of 10.05 has a chance probability of .002, making the finding a statistically significant one. $V^2 = .123$ which means that about 12 percent of the variation in occupational interest was accounted for.

Table 6 - Interest in Related Health Work and Family Support Score

Interest	Support Score		Total
	0	1+	
	percent		
Health Related	21	55	33
Not Health Related	79	45	67
Total	100	100	100
N	53	29	82

$X^2 = 10.05$ $p = .002$ $V^2 = .123$

Both tables, then, reveal that family support does make a difference in whether or not a young person expresses an interest in a health related career.

Table 7 presents data on the relationship between parental support and interest in an allied health career. Students receiving parental support were between 1 1/2 and 2 times as likely to be interested in an allied health related career compared with those receiving support for a nonhealth career. They were almost three times as likely to be interested in a health career as were those who received no suggestions for any type of work. The obtained differences were statistically significant since the obtained X^2 value of 11.44 has a chance probability of .003. V^2 was .140, signifying that 14 percent of the variation occupational interest was explained.

In Table 8 it can be seen that students receiving family support scores of 1 or more were slightly more than twice as likely to be interested in an allied health career than those receiving no suggestions for any future work or receiving support for nonhealth work. The chance probability of the X^2 value in Table 8 is .001 indicating a significant difference did exist. Again, a similar proportion of the Variation in interest in allied health careers is explained by total family support (13.6 percent).

Table 7 - Interest in Allied Health Career and Parental Support for Health Work

Interest	Parental Support: No support for any work	Support for health work	Support for Nonhealth work	Total
	percent			
Allied Health	27	73	43	48
Not Allied Health	73	27	57	52
Total	100	100	100	100
N =	26	26	30	82

$X^2 = 11.44$ $p = .003$ $V^2 = .140$

Table 8 - Interest in Allied Health Career and Family Support Score

Interest	Support Score: 0	1+	Total
	-percent		
Allied Health	34	72	48
Not Allied Health	66	28	52
Total	100	100	100
N =	53	29	82

$X^2 = 11.11$ $p = .001$ $V^2 = .136$

Results - Hypothesis on Participation in Health Career Orientation Program

A second major hypothesis in the project was that participation in the health careers orientation program administered by the Pennsylvania Health Council would increase chances of choosing a health career. In a sense this is an evaluation as the program goal was to interest young people in health careers. A description of the program can be found in Appendix B.

This section of analysis considers the 54 students who were either in a control group or an experimental group in the two Harrisburg schools. The preceeding section considered all 82 students. The experimental group consisted of students who, had participated in the Council's orientation program while the control group was a matched set of students who did not participate.

The data in Table 9 indicate that participants in the

Table 9 - Interest in Related Health Work and Participation in Orientation Program

Interest	Participation		
	Participant	Non-Participant	Total
	- - - - percent - - - - - - - - - - - -		
Health Related	59	19	39
Not Health Related	41	81	61
Total	100	100	100
N =	27	27	54

$X^2 = 9.43$ $p = .002$ $V^2 = .175$

Health Council's program were significantly more likely to be interested in a health related career than nonparticipants.

Fifty-nine percent of the participants expressed an interest in a health related occupation while 19 percent of the nonparticipants express such an interest. The ratio between these percentages is slightly more than 3:1. That the relationship between participation and interest is significant is exemplified by the chance probability of the obtained X^2 value (9.43) being .002. The V^2 value obtained in this case was the largest obtained in these first two sections of results. Participation accounted for 18 percent or almost one fifth of the variation in occupational interest. This is still low, but yet higher than any obtained thus far.

When participation was related to interest in a specific allied health career, we again find a significant relationship (Table 10). In this case the relative value of the important

Table 10 - Interest in Allied Health Career and Participation in Orientation Program

Interest	Participation		
	Participant	Non-participant	Total
	- - - - - percent - - - - - - - - - - - - -		
Allied Health	70	33	52
Not Allied Health	30	67	48
Total	100	100	100
N =	27	27	54

$X^2 = 7.42$ $p = .006$ $V^2 = .137$

percentages are 70 and 33 percent, a ratio of better than 2:1. Participants were slightly more than twice as likely to show interest in an allied health career than nonparticipants.

The analyses presented in Tables 9 and 10 make it quite clear that for the 54 eighth grade students being considered here, participation in the Pennsylvania Health Council's health career orientation program appears to contribute substantially to a young person's interest in a health career in general and an allied health career in particular.

Strengthening these findings is the fact that previous matching had eliminated variations in sex, color and, to some extent, in parental education.

Whether the effects of participation will continue or disappear over time is an open question and one which can be answered by a longitudinal type study.

Results - Participation and Career Interest with Family Support Contrclled.

Since the preceding two sections of analysis revealed that both family support and participation in a health careers orientation program are related to occupational interest, it obviously is important to determine if the participation interest relationship remains when family support is held constant. The results of such an analysis will tell us whether the effect of participation in the orientation programs are strong enough to be unaffected by family support.

Table 11 contains the results of the analysis of the relationship of participation when parental support is held constant.

It will be noted in Table 11 A that the participation-interest relationship is not significant for students receiving no suggestions for any work and for students receiving parental support. For students receiving suggestions for work, but for nonhealth related work, the relationship remains significant.

One interpretation of this finding is that for students who received suggestions for nonhealth work from parents, the orientation program influenced them to choose a health career. In Table 11 C, 67 percent of participants chose a health career while none of the nonparticipants did. For

Table 11 - Interest in Health Related Career and Participation in Orientation Program with Parental Support Held Constant

Table 11 A - Interest and Participation, No Parental Suggestions for Any Work

Interest	Participation		
	Participant	Non-participant	Total
	- - - - percent - - - -		
Health Related	50	30	39
Not Health Related	50	70	61
Total	100	100	100
N =	8	10	18

Fishers exact p = .264

Table 11 B - Interest and Participation, Parental Suggestions for Health Work

Interest	Participation		
	Participant	Non-participant	Total
	- - - - percent - - - -		
Health Related	62	50	59
Not Health Related	38	50	41
Total	100	100	100
N =	13	4	17

Fishers exact p = .397

Table 11 C - Interest and Participation, Parental Suggestions for Nonhealth Work

Interest	Participation		
	Participant	Non-participant	Total
	- - - - percent - - - -		
Health Related	67	0	21
Not Health Related	33	100	79
Total	100	100	100
N =	6	13	19

Fishers exact p = .004

those who had received parental support for a health career (Table 11 B), participation had no significant impact. Thus, between parental support and the program, a considerable impact on health career interest is had on student who had given thought to future work.

A parallel to the above trends is found when we consider controlled analysis of the relationship between participation and interest in a specific allied health career. This relationship is presented in Table 12. Parental suggestions is again introduced as the control variable. The participation-interest relationship holds significant for those students receiving suggestions for nonhealth work (Table 12 C) but not for the other two groups.

When we move to considerations of the effect of controls for family support scores, rather than parental support, we find that the participation interest relationship approximately follows the pattern found when parent support controls were imposed. The results are presented in Tables 13 and 14. For both general interest in health related work and in specific allied health careers, the participation-interest relationship holds significant for students with family support scores of 0 but does not hold significant for students with support scores of 1 or more. It should be kept in mind that the "0" score group includes those students who received no suggestions for any work and those who received suggestions for any work and those who received suggestions but for nonhealth work.

Table 12 - Interest in Allied Health Careers and Participation in Orientation Program with Parental Support Held Constant

Table 12 A - Interest and Participation, No Parental Suggestions for Any Work

Interest	Participation		
	Participant	Non-participant	Total
	-percent-		
Allied Health	50	20	33
Not Allied Health	50	80	67
Total	100	100	100
N =	8	10	18

Fishers exact p = .17

Table 12 B - Interest and Participation, Parental Suggestions for Health Work

Interest	Participation		
	Participant	Non-participant	Total
	-percent-		
Allied Health	69	100	76
Not Allied Health	31	0	24
Total	100	100	100
N =	13	4	17

Fishers exact p = .30

Table 12 C - Interest and Participation, Parental Suggestions for Nonhealth Work

Interest	Participation		
	Participant	Non-participant	Total
	-percent-		
Allied Health	100	23	47
Not Allied Health	0	77	53
Total	100	100	100
N =	6	13	19

Fishers exact p = .003

Table 13 - Interest in Health Related Careers and Participation in Orientation Program, With Family Support Scores Held Constant

Table 13 A - Interest and Participation, 0 Support Score

Interest	Participation		
	Participant	Non-participant	Total
	- - - - percent - - - - - - - - - - - - - -		
Health Related	58	13	29
Not Health Related	42	87	71
Total	100	100	100
N =	12	23	35

Fishers exact p = .01

Table 13 B - Interest and Participation, Support Scores of 1†

Interest	Participation		
	Participant	Non-participant	Total
	- - - - percent - - - - - - - - - - - - - -		
Health Related	60	50	58
Not Health Related	40	50	42
Total	100	100	100
N =	15	4	19

Fishers exact p = .40

Table 14 - Interest in Allied Health Careers and Participation in Orientation Program with Family Support Score Held Constant

Table 14 A - Interest and Participation, 0 Support Score

	Participation		
Interest	Participant	Nonparticipant	Total
	----percent----		
Allied Health	75	22	40
Not Allied Health	25	78	60
Total	100	100	100
N =	12	23	35

Fishers exact p = .03

Table 14 B - Interest and Participation, Support Score of 1+

	Participation		
Interest	Participant	Nonparticipant	Total
	----percent----		
Allied Health	67	100	74
Not Allied Health	33	0	26
Total	100	100	100
N =	15	4	19

Fishers exact p = .26

The preceding controlled analyses demonstrates, in a sense, that the Health Council's orientation program "picks up where the family leaves off." Participation was not significantly related to interest when family support was present. But when family support was not present, participation did have a significant effect.

Results - Participation and Family Support

The third major hypothesis of the study was stated in terms of the relationship between participation and family support. One of the interests in the project was to determine if student involvement in the program leads to greater family support. Through the program, families come to know more about health careers and it seemed important to ascertain if families show greater support when students are involved, or whether there is a more negative reaction which would be displayed in terms of nonsupport.

Tables 15 and 16 contain the data used in testing the support - participation relationship. In both instances, one can see that family support is significantly related to participation in the program.

In Table 15, 48 percent, or almost one half, of the participants reported family support whereas 15 percent of the nonparticipants reported support. Nonparticipants reported nonsupport at a higher rate than participants (37 percent vs. 3 percent and 48 percent vs. 22 percent). The X^2 value is significant with a chance probability of .02.

Table 15 - Parental Support for Health Career and Participation in Orientation Program

Parental Support	Participation		
	Participant	Nonparticipant	Total
	- - - - percent - - - - - - - - - - - - - - -		
No support for any work	30	37	33
Support for health work	48	15	31
Support for nonhealth work	22	48	35
Total	100	100	100
N =	27	27	54

$X^2 = 7.57$ $p = .022$ $V^2 = .140$

In Table 16 it can be observed that more than one-half (56 percent) of the participants reported support (higher family support scores) compared to only 15 percent of nonparticipants reporting such support. The chance probability of the obtained X^2 value is .002. Almost 20 percent of the variance in family support score (18 percent) is accounted for by participation.

Table 16 - Family Support Score and Participation in Orientation Program

Support Score	Participation		
	Participant	Nonparticipant	Total
	- - - - -percent - - - - - - - - - - - - - - -		
0	44	85	65
1+	56	15	35
Total	100	100	100
N =	27	27	54

$X^2 = 9.83$ $p = .002$ $V^2 = .182$

students at Shamokin or those in the control group.

Table 17 - Interest in Health Related Work for Experimental, Control, Shamokin and Lancaster Students

Interest	Student group			
	Experimental	Control	Shamokin	Lancaster
	- - - - percent- - - - - - - - - - - - - -			
Health Related	59	19	14	29
Not Health Related	41	81	86	71
Total	100	100	100	100
N =	27	27	14	14

The same general pattern as held for parental support also held for family support scores (Table 18). That is, the experimental group had the highest interest, Lancaster the next highest and Shamokin and the control group the two lowest percentages.

Table 18 - Interest in Allied Health Career for Experimental, Control, Shamokin and Lancaster Students

Interest	Student group			
	Experimental	Control	Shamokin	Lancaster
	- - - - percent - - - - - - - - - - - - - -			
Allied Health	70	33	29	50
Not Allied Health	30	67	71	50
Total	100	100	100	100
N =	27	27	14	14

A very interesting point emerges when both Tables 17 and 18 are compared. For all four groups, the career-interest-level percentages are higher in Table 18 than in Table 17. This would indicate that when students are asked about their interest in health careers in particular, rather than being asked about future work in general, the interest in health careers is higher. Part of this general increase is probably

The Council's orientation program, then, does appear to lead to increased support from families for a health career. This finding lends greater strength to the Council's program. Not only are students directly affected in an affirmative way by it, parents also (as perceived by students) provide greater support.

Results - Health Interest Among Students At Nonprogram Schools

Two additional requests were made by the contractor of this project. One was to examine career interests of students in a coal mining community and the career interests of Puerto Rican students. The second request was to examine responses from older siblings of students.

As was noted earlier in the methodology section, students at Shamokin were selected as representatives of a coal mining community and students from three Lancaster city schools were chosen to reflect interests of Puerto Rican students. Students in both of these additional groups were administered the same interview schedule as that used for the experimental and control groups.

In Table 17 it can be seen that in terms of parental support, the students at Shamokin and Lancaster schools were less likely to express an interest in a health career than

due to the "loading" effect of the question which results the focus of careers is narrowed.

Results - Health Career Interest of Older Siblings In School

A second special request made by the contractor was an analysis of the health career interests of the students' siblings who were 14 years old or older and still in school. There were a total of 40 student-siblings who met these criteria. These older siblings were administered the same interview schedule as the students analyzed earlier.

The interest of older siblings was analyzed in terms of interest in work related to health, and in terms allied health careers in particular. In Table 19 it can be observed that 18 percent of the older siblings expressed an interest in a health related career when they are ready to go to work someday, while 82 percent did not. When interest in an allied health career was considered, 30 percent expressed such an interest and 70 percent did not. Compared to the interest levels of the four groups of study students (Tables 17 and 18),

Table 19 - Health Career Interests of Older Siblings of Students

Type of work would like	Percent	N
Related to health	18	7
Not Related to health	82	33
	100	40
Whether work allied career		
Allied health career	30	12
Other	70	28
	100	40

for both measures of health career interest, the interest levels of these older siblings is slightly higher than the Shamokin students but lower than the interest levels of the experimental and control groups and the Lancaster group.

Other Possible Independent Variables

A final set of relationships analyzed for this report were the relationships of other possible factors or independent variables to health career interest. In Appendix D there are listed seventeen variables and whether or not they were found to be significantly related to either or both of the health career interest dimensions used in the study. Three variables stand out as being significantly related to both dimensions. These are "whether health related work was suggested by an extra - family person"; "whether acquainted with persons in health field,"; and "whether know any persons in health field real well." Any future study of effects of health career work should consider these factors. Health career programs and health personnel in general could well capitalize on the importance of these personal influence factors, by providing opportunities for personal conversations and other personal contacts.

Nonstatistical results - Possible Thematic Explanations of Health Career Interest

At a group meeting of interviewers in which results and findings of the study were reviewed, there emerged a thematic explanation theory of health career interest which merits reporting in this summary section. Although no statistical or other data are available to document the point, there seemed to be different explanations for health career interests among blacks, Harrisburg whites, Shamokin whites and Puerto Rican students.

Among black students, money seemed to be a motivator. Health careers were considered because it was thought this was one of the better ways to earn money. Among the white students in Harrisburg, health careers were seen as a way to be of help or service to people. Puerto Rican students seemed to choose health careers because this was a way to achieve status in the family and community. In Shamokin, a pessimistic view seemed to prevail in the sense that the interviewer received comments that there were not many work opportunities for young people. Here, an escape theme seemed to enter into choice of a health career.

Obviously these impressions, based on observation of students and parents, deserve a much more analysis and documentation, but they are reported here for the purpose of stimulating thought and possible directions for future work. One would expect that the four themes, if they exist, would affect any occupational interest or choice, not just health interest.

Summary and Conclusions

This report has presented an analysis of the effects of two factors on health career interest of eighth grade students and their older siblings in several schools in central Pennsylvania. One of the factors was participation in a health careers orientation program conducted by the Pennsylvania Health Council during the 1969-70 school year. The second major factor hypothesized as having an effect on health career interest was family support for a health career choice.

To test the effect of participation in the orientation program, a group of 27 control students was matched with the 27 participating students on sex, color and parental education. Two additional groups of students were included in order to examine career interests of students in a coal mining community and of Puerto Rican students. A total of 82 students were included in the study.

Two operational measures of family support were developed -- parental support and a total family support score. Measures of the dependent variable, career interest, was measured in terms of interest in a health related career and allied health careers in particular. Data on these and other relevant variables were collected by means of an interview schedule.

The coded data were analyzed by means of a time sharing computer process in which General Electric's Mark II computer was used.

Results of the study clearly indicated that both family support for health work and participation in the orientation program had statistically significant relationships to health career interest. When family support was held constant through tabular controls, and the participation - interest relationship examined, it was found that for students receiving family support for health work the relationship was nonsignificant. For students who received family support for nonhealth work, however, the participation-interest relationship remained significant. The findings from the controlled analyses were interpreted as an indication that the Health Council's program "picks up where the family leaves off." If the family doesn't lead young people to become interested in a health career, then the orientation program does.

The value of the Council's program was also enhanced by the finding that family support (as perceived by students) was significantly higher among students participating in the orientation program than among those not participating. One interpretation of this finding was that participation in the program makes families more favorably disposed to health careers for their children. The reverse argument, that greater family disposition towards health careers leads to participation, is not a very plausible one since high school counsellors

make the selection of participating students.

Interest of Puerto Rican students and those in the coal mining community were analyzed and compared to interest of the experimental and control students. Those students in the coal mining community had the lowest level of interest in health careers. This was true for both measures of health career interest. Also true for both measures was the tendency for Puerto Rican students to have levels between the control and experimental groups.

Older siblings of the study students who were still in school had levels of interest roughly equal to those of the control students.

All analyses performed for the five student groups revealed that students participating in the Council's program had a much higher interest in health careers than students in the other four nonparticipating groups.

Implications

This study has shown that the family plays a key role in health career interests of young people. It has also demonstrated that young people are affected in a positive way by participating in a health careers orientation program.

Not enough is known about the initial selection of students to enter the program. What criteria did counsellors at the Harrisburg schools either explicityly or implicitly use for selecting the program participants?

A third limitation is, in actuality, a caution to readers. It was emphasized once before in the report that only a longitudinal study, researching to the point of the students' actual occupation choice after schooling, would reveal the long term and most important effect of the Council's program. The present study was only able to inquire of interest immediately after participation and four years before actual choice behavior becomes manifest.

The two dimensions of family support had some degree of overlap since the family support scores included responses to the question of parental support, which itself was the other measure of family support. Although there appeared to be enough differences to warrant separate treatment, no thorough analysis was made of the relationships between these two measures. This poses a limitation.

In spite of the above limitations and cautions, the report does hold forth some very strong support for the importance of considering family life and participation in the "real world" of health care as these affect young people's interest in health careers.

Based on the findings of the study, it seems logical to recommend that any attempt to recruit young people into the health field should involve parents. Also, if any group of persons is seriously interested in recruiting more young people into the health field, serious consideration should be given to developing a program whereby young people have the opportunity to see health workers in action. In the program evaluated in this study, the focus was placed on the hospital. What differences in interest, if any, would result if nursing homes, rehabilitation centers, doctors' offices, neighborhood health centers, or other health facilities were included? Are any of these more effective than others in recruiting young people into the health field?

In view of the health manpower needs of the future, different alternatives of recruiting young people should be experimented with and evaluated. For without evaluation, the most effective routes cannot be uncovered.

Some Limitations of Findings

Since this project involved an assessment of the views of only 82 students, the results of the analysis are somewhat limited. Even more limited are the findings of the 27 control and 27 experimental students. However, the matching carried out on three variables does minimize this limitation.

FOR CONFIDENTIAL
RESEARCH PURPOSES ONLY

Appendix A - Student Interview Schedule
Study of Young Person's Interest
in Health Careers
Pennsylvania Health Council, Inc.

Record No._____

Name of School_____

Interviewer's Name_____

Name of Student_____

Date of Interview_____

Length of Interview: Start___:____Finish___:___Total Time, Minutes_____

1. What are the names of the parents or guardians you live with?

_____

2. Do any brothers, sisters or other persons, live in the house where you live? How old are they? Are they in school?
(Do all three questions for one person at a time)

NAME	RELATIONSHIP	AGE	IN SCHOOL OR WORKING
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

3. Do you have any brothers or sisters living away from the home where you live?

Yes_____. No_____.

IF YES:

NAME	RELATIONSHIP	AGE	IN SCHOOL OR WORKING
1.			
2.			
3.			

4. What kind of work do you think you would like to do when you are ready to start working someday? (Probe if general response--work in factory, plant, etc.)_____

_____

5. Have you ever thought about taking a job in some field related to health--like being a doctor, a nurse, a dentist, a medical technician or anything like this? Yes_____. No._____.

IF YES:

(a) What kind of work do you have in mind?_____

_____

(b) How good do you think the chances are that you will actually go into this work? Would you say:

Excellent_____Good_____Fair_____Poor_____

Why?_____

_____

6. If respondent has any <u>brothers and sisters older</u> than he or she, and in school--ASK:

(a) Do any of your brothers and sisters who are still in school ever talk about what kind of work they want to do when they go to work? Yes_____. No_____.

(b) What kind of work do they talk about getting?_____

_____

7. If any brothers and sisters at all--ASK:

   (a) Have any of your brothers and sisters ever said what kind of work they would like for you to do when you graduate?

   Yes____. No _____.

   IF YES:

   (a) What kind?_____

8. Have your parents or guardians ever said anything as to what they would like to see you do when you start work someday? Yes_____. No_____. Don't know_____.

   IF YES:

   (a) What do they suggest?_____

   _____

   _____

9. Have any other family members or relatives besides brothers, sisters or parents or guardians ever talked with you about taking up any particular kind of work someday? For example: In-laws, aunts, uncles, cousins or grandparents. Yes_____. No_____.

   IF YES:

   (a) Who suggested? (Relationship only)_____

   (b) What kind of work_____

   _____

10. Have any friends or other persons outside the family and relatives ever talked to you about what kind of work you might do when you are ready to start work?
Yes_____. No_____.

   IF YES:

   (a) Who suggested? (Relationship or title)_____

   (b) What type of work do they suggest?_____

   _____

11. Of all your family people and relatives, which one would you say you look up to the most? (Which one do you think the most of for advice?)

_____

12. Have you ever talked to any people in the health field--like nurses, doctors, dentists, technicians or any others, about the kind of work they do, or have you had a chance to watch what they do? Yes_____. No_____.

IF YES:

(a) Relationship or title_____(b) Type of work_____

(c) Where_____

13. Are there any persons you know real well who are dentists, nurses, doctors, health techniciens or in some other phase of health? Yes_____. No_____.

IF YES:

(a) Relationship or title_____(b) Type of work_____

14. If a person from this area wanted to go into a health job--like being a nurse, a doctor, a dentist or a health technician, do you know of any places where a person could get some training after high school to help get him ready? Yes_____. No____.

IF YES:

(a) Name of training place_____(b) Town_____

(c) For what?_____

15. If a young person in this area like yourself wanted to get some training in any kind of a health field after high school, do you think he would have any problem? Yes_____. No_____.

Why?_____

16. Do you know of anyone in this area who has gotten some training to go into health work of any kind? Yes_____. No_____.

IF YES:

(a) Relationship and/or title_____

17. If you had to make a big and important decision about something, or if you had a big problem you were worried about, which family member or relative do you think would you most like to go to to talk things over?_____

_____

(a) Where does this person live? Home_____. Not home, but this community or area_____

Outside this community or area_____

18. After you graduate from high school, complete military service or go to school, what is the greatest distance you would care to live from your home community? (Do not read categories--only check appropriate answer)

Less than 10 miles	_____
" " 10-19 "	_____
" " 20-50 "	_____
" " 50-100 "	_____
100 miles or more	_____
No limit	_____

19. What is the greatest amount of travel time you would care to live away from your home community when you settle down someday?
(Do not read categories--only check appropriate answer)

Less than 15 minutes	_____
15 minutes to an hour	_____
1 to 4 hours	_____
More than 4 hours	_____
No limit	_____

20. When you are ready to start work, how seriously do you think you would consider a good paying job of your choice away from home if it meant that you could see your parents, and brothers and sisters only once or twice a year?

Would you consider it:

_____ Very seriously
_____ Pretty seriously
_____ Hardly consider it
_____ Not consider it at all

21. Have you ever gone to a dentist? Yes_____. No_____.

IF YES, ASK:

(a) Did you like or not like the visit and why?

Like_____ Not like_____Not sure_____ Reason_____

_____

(b) Do you think you would like to do that kind of work someday?

Yes_____. No_____. Maybe_____.

Why?_____

_____

22. Have you ever gone to a doctor? Yes_____. No_____.

IF YES, ASK:

(a) Did you like or not like the visit and why?

Like_____Not like_____Not sure_____Reason_____

_____

(b) Do you think you would like to do that kind of work someday?

Yes_____. No_____. Maybe_____.

Why?_____

_____

23. If respondent answered "yes" to either or both Nos. 21 and 22--ASK:

(a) Did you see any persons helping the dentist, or doctor?
Yes_____. No_____.

IF YES:

(a) What was their job? Would you like to do that kind of work someday?

Doctor

1. Title_____Job_____Yes_____No_____

Why?_____

2. Title_____Job_____Yes_____No_____

Why?_____

Dentist

1. Title_____Job_____Yes_____No_____

Why?_____

2. Title_____Job_____Yes_____No_____

Why?_____

24. Have you ever been in or visited a hospital? Yes_____. No_____.

IF YES:

(a) Did you see any people doing jobs that you think you would like to do someday?

1. Title_____Job_____Yes_____No_____

Why?_____

2. Title_____Job_____Yes_____No_____

Why?_____

Appendix B - Outline of Health Careers Occupation Program

A Proposal from

Pennsylvania Health Council, Inc.

HEALTH CAREER DEVELOPMENT PROJECT

In Association With

The School District of Harrisburg

The Harrisburg Hospital

Proposal

Objective of the Project

The need for medical and health personnel is critical at the present time and the projection for future needs is even more alarming. In order to help students in their development toward eventual participation in satisfying careers, it is necessary to make them more aware of the many career opportunities together with the requirements of education and training in order to qualify. Students in Junior High School are in the beginning stages of decision about their future courses, subjects, and high schools. Involvement in a wide range of experiences relating to health careers will help students to identify goals and stimulate them to examine closely their present performance in order to become more effective participants in adult careers.

Specific Aims

The project which is planned will have as its specific goals the following objectives:

1. To improve the behavior of students involved in terms of better attendance and punctuality rates and more participation in class work.
2. To improve the achievement scores of these students in reading and arithmetic as measured by the Stanford Achievement Battery.
3. To provide the students with training and opportunities to make decisions.
4. To provide information about, and experiences in, careers in the health field.
5. To motivate students to continue their education thrcugh high school and beyond.

Methods of Procedure

Two Junior High Schools, Edison and Camp Curtin, will be involved in this project. In each school the enrichment groups will meet for four hours each week. One session each week will feature exposure to health careers by taking students on field trips, or by bringing in representatives from health fields to talk with students or by showing them films, slides, etc. Each week there will be a time for group guidance and discussion to establish a dialogue about work habits and attitudes, personal concerns and decision making.

A pool of eighth grade students who profess an interest in careers in the health field will be compiled at each school. From this pool, counselors and teachers will select fifteen (15) students at each school that will serve as the treatment group. An attempt will be made to insure that there are an equal number of boys and girls. The meeting times at the schools will be set for the convenience of the staff and the students and will be conducive to the fullest implementation of the program. The program will include two benefits: (1) A staff development program for the teachers and counselors involved in the project; and (2) the additional knowledge that will accrue to the students as a result of their actual experiences in the program.

Transportation, notebooks, supplies, reference materials, hospital jackets and name tags will be provided for the students.

Personnel involved in the project will include the counselors from each Junior High, Mrs. Grace White and Mrs. Alfreda Johnson. Their duties will be to help carry out the procedures outlined under the direction of the coordinators, Mr. E. L. Biggs, Assistant to the Administrator and Miss Marion Metz, Director of Educational Department, Harrisburg Hospital. The Executive Director of the Pennsylvania Health Council will serve as Project Director and will provide assistance whenever required.

Significance of this Project

It is firmly believed that, to help alleviate critical health personnel shortages, a working program involving Junior High School students can and will perform in a satisfactory manner. Also, facts about an occupation and no more important than the student's perception of these facts, and his attitudes and feelings toward them. Occupational information needs to be perceived as the student's feelings about an occupation and a result of his contact with it. In other words, a child must perceive the occupation in realistic terms and he must have had some contact with it in order to have a realistic picture of the occupation itself. The significance of this project is to introduce the child to that part of the world of work that is represented by the health field of occupations. In addition, records will be kept on each student participant to determine how many will enter health careers following high school graduation.

FOR CONFIDENTIAL
RESEARCH PURPOSES ONLY

Appendix C - Adult Interview Schedule

Study of Young Person's Interest
in Health Careers
Pennsylvania Health Council, Inc.

Record No. __ __ __

Name of Respondent _____

Name of Student _____

Interviewer's Name _____

Date of Interview _____

Length of Interview _____

Relationship to Student

Father____
Mother____
Sister____
Brother____
Other____

QUESTIONS NOS. 1-8 INCL. TO BE ASKED OF PARENTS OR GUARDIANS AND OTHERS OUT OF SCHOOL

1. **First, I would like to obtain the names of the persons living in this household (Ask only of household head or wife).**

NAME	RELATIONSHIP TO HEAD OF HOUSEHOLD	AGE	LAST YEAR OF SCHOOL COMPLETED	IN SCHOOL OR WORKING (Obtain occupation if working) Be Specific
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				

2. Have you ever given any thought as to what you would like_____to do when he/she is ready to start work someday? Yes_____. No_____.

IF YES:

(a) What kind of work would you like to see him/her do?_____

_____

(b) Have you ever discussed with him/her plans for work someday? Yes_____. No_____.

IF YES - IN 2(b):

(a) What was the reaction?_____

_____

(b) Do you and _____see eye-to-eye or agree on what he/she might like to do? Yes_____. No_____.
If not, what differences exist?_____

_____

3. Has_____ever mentioned he/she would like to enter any of the health occupations like--a doctor, a nurse, a dentist, a medical technician or anything like this? Yes_____. No_____.

IF YES:

(a) What kind of work?_____

_____

(b) What was your reaction when this was mentioned?_____

_____

_____

IF NO:

(a) Have you ever encouraged him/her to enter one of these occupations in the health field? Yes_____. No_____.

IF YES:

Which?_____

Why?_____

IF NO:

Why?_____ _____

4. If a person from this area wanted to go into a health job--like being a nurse, a doctor, a dentist or a health technician, do you know of any places where a person could get some training after high school to help get him ready? Yes_____. No_____.

IF YES:

(a) Name of training place_____ (b) Town_____

(c) For what?_____

5. If a young person in this area wanted to get some training in any kind of a health field after high school, do you think he would have any problems? Yes_____. No_____.

Why?_____

6. Do you know of anyone in this area who has gotten some training to go into health work of any kind? Yes_____. No_____.

IF YES:

(a) Relationship and/or title_____

(b) Where did they go?_____

7. After_____graduates from high school, completes military training, or goes to school, what is the <u>greatest distance</u> you would care to have him/her live from this community? (Do not read categories--only check appropriate answer)

Less than		10 miles	_____
"	"	10-19 "	_____
"	"	20-50 "	_____
"	"	50-100 "	_____
100 miles or more			_____
No limit			_____

8. What is the greatest travel time you would care to have him/her live from the community? (Do not read categories--only check appropriate answer)

Less than	15 minutes_____
15 minutes to an hour	_____
1 to 4 hours	_____
More than 4 hours	_____
No limit	_____

8a. It may be hard to imagine, but if there were no barriers such as money, discrimination and few chances to go to school, what kind of work do you think you would probably encourage_____to choose?

_____

QUESTIONS NOS. 9-27 INCL. TO BE ASKED ONLY OF BROTHERS AND SISTERS OVER 14 YEARS OF AGE AND STILL IN SCHOOL

9. What kind of work would you like to do upon graduation or whenever you are ready to start work?

10. Have you ever given any serious thought to taking a job in some field related to health--like being a doctor, a nurse, a medical technician or anything like this? Yes_____. No_____.

IF YES:

(a) What kind of work do you have in mind?_____

_____

(b) How good do you think the chances are that you will actually go into this work? Would you say:

Excellent_____ Good_____ Fair_____ Poor_____

Why? _____

_____

11. Have your parents or guardians ever said anything as to what they would like to see you do when you start work someday? Yes_____. No_____.

IF YES:

(a) What do they suggest?_____

_____

_____

12. Have any other family members or relatives besides brothers, sisters or parents or guardians ever talked with you about taking up any particular kind of work someday? For example: In-laws, aunts, uncles, cousins or grandparents. Yes_____. No_____.

IF YES:

(a) Who suggested? (Relationship only)_____

(b) What kind of work _____

_____

20. If you had to make a big and important decision about something, or if you had a big problem you were worried about, which family member or relative do you think would you most like to go to to talk things over? _____

_____

(a) Where does this person live? Home_____. Not home, but this community or area _____

Outside this community or area _____

21. After you graduate from high school, complete military service or go to school, what is the greatest distance you would care to live from your home community? (Do not read categories--only check appropriate answer)

Less than		10	miles_____
"	"	10-19	" _____
"	"	20-50	" _____
"	"	50-100	" _____
100 miles or more			_____
No limit			_____

22. What is the greatest amount of travel time you would care to live away from your home community when you settle down someday? (Do not read categories--only check appropriate answer)

Less than	15 minutes_____
15 minutes to	an hour_____
1 to	4 hours_____
More than	4 hours_____
	No limit_____

23. When you are ready to start work, how seriously do you think you would consider a good paying job of your choice away from home, if it meant that you could see your parents, and brothers and sisters only once or twice a year?

Would you consider it?

_____ Very seriously
_____ Pretty seriously
_____ Hardly consider it
_____ Not consider it at all

24. Have you ever gone to a dentist? Yes_____. No_____.

IF YES, ASK:

(a) Did you like or not like the visit

Like_____Not like_____Not sure_____

(cont'd.)

13. Have any friends or other persons outside the family and relatives ever talked to you about what kind of work you might do when you are ready to start work? Yes_____. No_____.

IF YES:

(a) Who suggested? (Relationship or title)_____

(b) What type of work do they suggest?_____

14. Of all your family people and relatives, which one would you say you look up to the most? (Which one do you think the most of for advice?)

_____

15. Have you ever talked to any people in the health field--like nurses, doctors, dentists, technicians or any others, about the kind of work they do, or have you had a chance to watch what they do? Yes_____.No_____.

IF YES:

(a) Relationship or title _____(b) Type of work_____

(c) Where_____

16. Are there any persons you know real well who are dentists, nurses, doctors, health technicians or in some other phase of health? Yes_____. No_____.

IF YES:

(a) Relationship or title_____(b) Type of work_____

17. If a person from this area wanted to go into a health job--like being a nurse, a doctor, a dentist or a health technician, do you know of any places where a person could get some training after high school to help get him ready? Yes_____. No_____.

IF YES:

(a) Name of training place_____(b) Town_____

(c) For what?_____

18. If a young person in this area like yourself wanted to get some training in any kind of a health field after high school, do you think he would have any problem? Yes_____. No_____.

What? _____

_____

19. Do you know of anyone in this area who has gotten some training to go into health work of any kind? Yes_____. No_____.

IF YES:

(a) Relationship and/or title_____

(24. cont'd.)

(b) Do you think you would like to do that kind of work someday?
Yes_____. No_____. Maybe_____.

_____

_____

25. Have you ever gone to a doctor? Yes_____. No_____.

IF YES, ASK:

(a) Did you like or not like the visit and why?

Like_____Not like_____Not sure_____

(b) Do you think you would like to do that kind of work someday?
Yes_____. No_____. Maybe_____.

Why?_____

_____

26. If respondent answered "yes" to either or both Nos. 24 and 25--ASK:

(a) Did you see any persons helping the dentist, or doctor?
Yes_____. No_____.

IF YES:

(a) What was their job? Would you like to do that kind of work someday?

Doctor

1. Title_____Job_____Yes_____No_____

Why?_____

2. Title_____Job_____Yes_____No_____

Why?_____

Dentist

1. Title_____Job_____Yes_____No_____

Why?_____

2. Title_____Job_____Yes_____No_____

Why?_____

27. Have you ever been in or visited a hospital? Yes_____. No_____.

IF YES:

(a) Did you see any people doing jobs that you think you would like to do someday? Yes_____.No_____.

1. Title_____Job_____Yes_____No_____

Why?_____

2. Title_____Job_____Yes_____No_____

Why?_____

Appendix D - List of Other Possible Independent Variables and Whether Significantly or Not Significantly Related to the Two Dimensions of Career Interest*

Variable	Career interest dimension	
	Health related work	Allied health career
1. Sex	NS	S
2. Family composition	NS	S
3. No. of brother at home	NS	S
4. No. of sisters at home	NS	NS
5. Total no. of siblings	S	NS
6. No. of persons in household	S	NS
7. Chances of getting health work	S	Not computable
8. Older siblings talk of work, plans	NS	NS
9. Whether health related work was suggested by extra-family persons	S	S
10. Whether acquainted with persons in health field	S	S
11. Whether know any persons in health field real well	S	S
12. Whether health training available	NS	S
13. Whether know anyone who received health training	NS	NS
14. Color/race	NS	NS
15. Occupation of household head	S	NS
16. Father's education	NS	NS
17. Mother's education	NS	NS

*The significance level used to determine significance of the X^2 values for variables in this table was .10.