

Effects of a Health Careers Program and Family Support for a Health Career on Eighth Graders' Career Interest

THE RISING DEMAND for persons trained in the allied health professions has pointed up the need for an examination of the factors that foster or impede the interest of young people in health careers. Hiestand (1), in an overview of manpower research, has encouraged this kind of research. Its results, particularly if the research is related to ongoing recruitment programs, could be of considerable value in the formulation of policies to increase young people's interest in health careers. In line with this view, we examined the effect on eighth graders' career interest of two factors—a health careers program and family support for a health career. Two major hypotheses were tested: first, a young person's participation in a health careers orientation program will result in an expression of interest in a health occupation, and second, parental suggestion of a health occupation will influence a young person to express such an interest.

Health Careers Program

The health careers program whose effect we studied was administered by the Pennsylvania Health Council, Inc., with a grant from the Sears Roebuck Foundation.

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Tearsheet requests to Dr. Charles O. Crawford, 107 Weaver Building, Pennsylvania State University, University Park, Pa. 16802. Dr. Crawford can also supply single copies of an earlier paper (see reference 6) that provides more information on the characteristics of the eighth graders studied who participated in the health careers orientation program of the Pennsylvania Health Council, Inc.

The program, which was in operation from 1968 through 1971, consisted of 15 weekly visits to the Harrisburg Hospital by eighth grade students from two junior high schools in Harrisburg—13 from one school and 14 from another. At the hospital the students observed nurses, physicians, technicians, and other health personnel at work. In addition, they attended special seminars and film showings and participated in other similar educational programs. The students were given ample opportunity to interact with persons in a number of health occupations. In short, they were provided with several role models.

Today children do not automatically follow the occupations of their fathers, relatives, or family friends as much as they once did. Instead they choose from a wide set of alternatives. In most cases they must make their choices on the basis of secondhand information about the occupations rather than on the basis of role models. It is this deficiency that the orientation program of the Pennsylvania Health Council attempted to correct.

Family Support

Parents, as important socializing agents, transmit norms and values to their children and provide cues regarding the desirability of certain occupations. Rehberg and Westby have stated that parental suggestion and encouragement is "the vehicle whereby the parents translate their achievement and mobility values into a role expectation comprehensive to the adolescent" (2). Empirical relationships between (a) the occupational and educational levels that the children themselves prefer and (b) their family's influence in matters related to their occupational choice have been established by numerous researchers. Bibliographies by Jacobsen and co-workers (3) and Kuvlesky and Ohlendorf (4) contain references on this subject. Much of the general research on the effect of family support on career choice tends to validate our hypothesis that parental suggestion of a health occupation will influence a young person to express interest in a health occupation. However, further testing of the general hypothesis as it related specifically to health career choice seemed in order.

Study Subjects

To determine the relative influence of parents and health careers programs on career choice, we compared

27 eighth graders who participated in a health careers program in Harrisburg with a matched group of 27 who did not.

Eighth graders were chosen because at this grade level young people are in the "tentative choice period," according to the theory of occupational choice proposed by Ginzberg and co-workers (5). During this period an adolescent's expressed interest in an occupation is likely to be influenced by such socializing agents as parents, teachers, and peers, as well as by exposure to occupational role models. Thus, although the literature indicates that young people tend to make occupational choices on the basis of secondhand information, exposure to role models is an effective means of influencing their choices.

Such a procedure as we used for selecting study subjects probably does not provide a random sample of any universe, but it does eliminate the effects of those factors on which the participants and nonparticipants in the career program were matched—sex, parental education, and race. Crawford has provided further details on the characteristics of the program participants in another paper (6). Both parents of one-half of the students in both the experimental and control groups had completed high school; the parents of the other half had less schooling. One-third of the students in the experimental and control groups were male; two-thirds were female. Fifty-six percent of the students in the experimental group were black, and 44 percent were white; in the control group 52 percent were black, and 48 percent were white.

Measures of Variables

The dependent variable of our study was interest in a health occupation, and especially in an allied health occupation. Interest in a health career was measured by the eighth graders' responses to two questions. The first question was: What kind of work do you think you would like to do when you are ready to start working some day? The interviewers were instructed to probe if the response was too general or in terms of place rather than occupation. The responses were coded as to whether they were or were not health related.

In the second question, which was posed immediately after the first, students were queried more specifically about health occupations: 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? If the students answered in the affirmative, they were asked what particular kind of work they had in mind. Because the main thrust of the project was toward an interest in an allied health occupation, the responses were put into one of two categories: (a) interest in an allied health occupation and other ("other" was meant to include interest in being a physician or dentist) or (b) no interest in any health career.

The first independent variable considered was the eighth graders' participation in the health careers orientation program.

The measure of family support, more specifically parental support, was the second independent variable. It was based on responses to the question, Have your parents or guardians ever said anything as to what they would like to see you do when you start work some day? Students responding Yes were asked, What do they suggest? The responses were coded into one of two categories: (a) support for health work or (b) support for nonhealth work or no support for any type of work (a negative response to the first question).

Field Procedure

Upon conclusion of the careers program conducted in the fall term of the 1969-70 school year, two interviewers who had been trained for the study queried participants in the program and matched nonparticipants at each of the two schools, using a pretested schedule. The interviewing itself was carried out in the spring of 1970. Information on the variables of concern in our study, as well as information about other variables, was collected.

Results

We used the X^2 to test for significant differences unless numbers were too small; then we used Fisher's exact probability test; both were computed according to Siegel (7). The term V^2 , used as a measure of association, was computed according to Blalock (8). All data in the tables in this paper represent percentages of students.

Participation in careers program. The first independent variable we considered, and one that is most relevant to the policies of health agencies, was the eighth graders' participation in the health careers program. Since health careers programs in various forms have been, or

are being, established in many parts of the country, the need for evaluation is apparent. It needs to be known whether in fact such career programs actually increase the likelihood that a young person will choose a health career.

The percentages of the 54 eighth graders who expressed an interest in a health career of some kind ($X^2 = 9.43, P < 0.01, V^2 = 0.175$), and in an allied health career in particular ($X^2 = 7.42, P < 0.01, V^2 = 0.137$), are shown in the following table according to whether or not the students had participated in the health careers orientation program.

Career interest	Partici- pants (N=27)	Nonpar- ticipants (N=27)	Total (N=54)
Health-related	59	19	39
Not health-related	41	81	61
Allied health	70	33	52
Not allied health	30	67	48

Participants were more than three times as likely to express an interest in a health-related career as the non-participants (59 percent versus 19). The ratio for allied health careers was greater than 2:1 (70 percent versus 33).

Parental influence. | The second independent variable we considered was parental influence, and the following table shows, in percentages, the career interests of the 54 students in relation to their parents' career suggestions.

Career interest	Parental career suggestions		
	Health (N=17)	Not health or none (N=37)	Total (N=54)
Health-related	59	30	39
Not health-related	41	70	61
Allied health	76	40	52
Not allied health	24	60	48

Parental support was significantly related both to interest in a general health-related occupation ($X^2 = 4.0, P < 0.05, V^2 = 0.07$) and to interest in an allied health occupation ($X^2 = 6.1, P < 0.02, V^2 = 0.12$).

The students receiving parental support for health work of some kind were about twice as likely to have an interest in a health-related occupation as students not receiving such support or whose parents did not lend support for any kind of work (59 percent versus 30). Nevertheless, the proportion of the variance in interest in some kind of a health career accounted for by the factor of parental support is small—7 percent ($V^2 = 0.07$).

When choice of an allied health occupation was considered, we found that interest in such work on the part of students with parental support was almost twice that of those without such support (76 percent versus 40). The proportion of variation, 12 percent, was slightly higher than that found for health-related careers of all kinds. Also to be noted are the relatively higher levels of interest in an allied health career, as compared with the interest in health-related careers, shown by both the support group (76 percent versus 59) and the nonsup-

port group (40 percent versus 30). These higher levels are due undoubtedly to the suggestive or loading effect of the question about allied health occupations. This question was put directly to the students and included some standardized interview probes.

The results clearly indicate that parental encouragement to enter a health career increases the likelihood that a young person will express an interest in such a career. It should be pointed out that in our study parental support was measured by the student's perception of this factor, not on the basis of actual suggestions from the parents. Also, interest in a health occupation does not necessarily imply commitment to it.

Relative effects of the two variables. One can readily see that program participants were slightly more than three times as likely to express an interest in a health-related occupation as nonparticipants—59 percent versus 19 ($X^2 = 9.4$) and more than twice as likely to state an interest in an allied health occupation—70 percent versus 33 ($X^2 = 7.42$). The higher levels of interest in allied health in both control and experimental groups is again probably due to question-loading. Participation in the health careers program accounted for approximately 18 percent ($V^2 = 0.18$) of the variation in respect to the general health field and 14 percent ($V^2 = 0.14$) of the variation in respect to allied health. Both variations were significant beyond the 0.01 level.

Family support was more closely related to an interest in allied health occupations than in general health-related work, and program participation was more closely related to an interest in general health work than in allied health occupations. Apparently parents have the greatest impact when they support a specific allied health career, but an orientation program is more effective in promoting a general interest in health work. A comparison of the V^2 values showed that participation in a careers program had a greater impact than parental support on both a general interest in the health field and a specific interest in an allied health occupation.

Controlled Analysis

To determine in more detail the relative effects of parental support and program participation, the relationship of each variable to student interest in a health occupation was examined while the other variable was controlled. Parental support was found to be related to program participation, as is seen in the following table which gives the percentages of program participants and nonparticipants who received and did not receive parental support for a health career:

Parental support	Partici- pants (N=27)	Nonpar- cipants (N=27)	Total (N=54)
Support	48	15	31
No support	52	85	68

NOTE: $X^2 = 7.0, df = 1, P < 0.01, V^2 = 0.13$.

Analysis with program participation controlled. Parental support in relation to student interest in a health-related occupation of some kind was analyzed while the factor of participation in the health careers program was controlled. The following table shows the percentages of participants interested in a health-related occupation of some kind in relation to support from their parents:

Career interest	Parental career suggestions		
	Health (N=13)	Not health or none (N=14)	Total (N=27)
Health-related	62	57	59
Not health-related	38	43	41

NOTE: $\chi^2 = 0.00$, $P > 0.50$, $V^2 = 0.00$.

Following are the corresponding percentages for nonparticipants:

Career interest	Parental career suggestions		
	Health (N=4)	Not health or none (N=23)	Total (N=27)
Health-related	50	13	19
Not health-related	50	87	81

NOTE: Fisher's exact probability > 0.50 .

The relationship between career interest and parental support, a relationship which was weak to start with, did not remain significant for either participants or nonparticipants.

We also analyzed the effects of parental support on interest in an allied health career, again with program participation controlled. Following are the percentages of program participants who were interested or not interested in an allied health career in relation to parental support for such a career:

Career interest	Parental career suggestions		
	Health (N=13)	Not health or none (N=14)	Total (N=27)
Allied health	69	71	70
Not allied health	31	29	30

NOTE: Fisher's exact probability > 0.50 .

These are the corresponding percentages for the nonparticipants:

Career interest	Parental career suggestions		
	Health (N=4)	Not health or none (N=23)	Total (N=27)
Allied health	100	22	33
Not allied health	0	78	67

NOTE: Fisher's exact probability = 0.02.

It can be seen that although parental support does not make for a significant interest among participants, it does among nonparticipants. This result indicates that family support has its greatest impact on those students who have not been exposed to a careers orientation program. As the data in the four preceding tables show, the interest levels among students who neither received family support nor participated in the orientation program are consistently the lowest in the study (13 percent in the second table and 22 percent in the fourth table).

Analysis with parental support controlled. With parental support controlled, program participation in relation to interest in some kind of a health occupation, and also in an allied health career in particular, was examined.

Following are the percentages of the program participants with parental support for a health career who were interested and not interested in some kind of health-related work:

Career interest	Partici- pants (N=13)	Nonpar- ticipants (N=4)	Total (N=17)
Health-related	62	50	59
Not health-related	38	50	41

NOTE: Fisher's exact probability = 0.40.

For students lacking parental support for health-related work or whose parents gave no support for any work, the percentages were as follows:

Career interest	Partici- pants (N=14)	Nonpar- ticipants (N=23)	Total (N=37)
Health-related	57	13	27
Not health-related	43	87	73

NOTE: Fisher's exact probability = 0.02.

The percentages of participants and nonparticipants in the program whose parents gave support for a health career are shown according to the students' interest in an allied health career:

Career interest	Partici- pants (N=13)	Nonpar- ticipants (N=4)	Total (N=17)
Allied health	69	100	76
Not allied health	31	0	24

NOTE: Fisher's exact probability = 0.30.

Among the program participants and nonparticipants whose parents gave no support for a health career or for any career, the percentages of those with and without an interest in allied health occupations were as follows:

Career interest	Parti- pants (N=14)	Nonpar- ticipants (N=23)	Total (N=37)
Allied health	71	22	41
Not allied health	29	78	59

NOTE: $\chi^2 = 8.8$, $P < 0.01$, $V^2 = 0.24$.

The preceding four tables, in which the effect of participation was examined while parental support was controlled, indicate that participation makes for a statistically significant difference in interest in a health occupation among those without parental support but not among those with it.

Discussion

In interpreting the results, four alternative explanations are possible. Since our controlled analyses revealed that participation in a health careers program made a difference in the levels of student interest in a health career when parental support was absent and that parental support made a difference when participation was absent, it could be argued that the two factors substitute for each other. Following this line of reasoning, one might expect that if one of the factors by itself makes a rather substantial difference in the interest levels of students, then the two combined would make an even greater difference. As can be seen, however, in the following table, showing the effect of various combinations of the two factors on the number and percentage of students showing an interest in allied health work and in general health-related work, this does not seem to be the case:

Combination of factors	Allied health		Health-related	
	Number	Percent	Number	Percent
Nonparticipation and no parental support . . .	14	22	23	13
Nonparticipation and parental support	4	100	4	50
Participation and no parental support	14	71	14	57
Participation and parental support	13	69	13	62

NOTE: These figures are taken from the appropriate participation-parental support combinations in the 8 preceding tables.

Other possible explanations of the results might be that (a) student participation in a health careers program results in parental encouragement for a health career, (b) the health careers program picks up where prior parental support leaves off, and (c) both parental support and the student's selection of the program may

be dependent variables, each influenced by some common independent variable or variables.

Although the four speculative explanations just outlined may temper the impact of the results, one point is clear: Students who lacked parental support for a health career and who did not participate in the health careers orientation program were definitely less likely to manifest an interest in health occupations than those with one or both of these characteristics.

Conclusions

The results of our study show rather conclusively that both support for the choice of a health occupation and the participation of young people in a health careers orientation program have significant effects on their interest in health occupations. Our research was concerned with occupational interest sustained over a very short period. Longitudinal studies are needed to determine whether such interests effectively persist to the point of actual occupational choice.

References

- Hiestand, D. L.: Research into manpower for health services. *Milbank Mem Fund Q* 44: 146-181, October 1966.
- Rehberg, R. A., and Westby, D. L.: Parental encouragement, occupation and family size: Artificial or independent determinants of adolescent educational expectation? *Soc Forces* 45: 371 (1967).
- Jacobsen, R. B., Flygstad, A. F., and Rodgers, R. H.: The family and occupational choice: an annotated bibliography. Center for Research in Occupational Planning, University of Oregon, Eugene, 1966.
- Kuvlesky, W. P., and Ohlendorf, G. W.: A bibliography of literature on status projections of youth. III. Residence, income, and family orientation. Department of Information Report No. 67-12. Department of Agricultural Economics and Rural Sociology, Texas A&M University, College Station, Tex. 1967.
- Ginzberg, E., Ginsburg, S. W., Axelrad, S., and Herma, J. L.: Occupational choice. Columbia University Press, New York, 1951.
- Crawford, C. O.: Health careers program, family support and health career interests of young people. Pennsylvania Department of Health, Harrisburg, 1971.
- Siegel, S.: Nonparametric statistics. McGraw-Hill Book Co., Inc., New York, 1956, pp. 175-179.
- Blalock, H.: Social statistics. McGraw-Hill Book Co., New York, 1960, p. 230

SYNOPSIS

CRAWFORD, CHARLES O. (Pennsylvania State University), SCHELZEL, GEORGE W., FLEMING, PHYLLIS L., and HARRISON, IRA E.: *Effects of a health careers program and family support for a health career on eighth graders' career interest. Public Health Reports, Vol. 90, March-April 1975, pp. 168-172.*

The separate and combined effects of participation in a health careers

program and of parental support for a health career on young people's interest in a health career were examined. Twenty-seven eighth graders participating in a health careers orientation program were matched by sex, race, and parental education with 27 eighth grade nonparticipants, and personal interviews were then conducted with students in both groups.

Both program participation and parental support were found to be significantly related to two measures of the students' interest in a health career.

One measure was of the students' interest in general health-related careers.

When program participation and parental support were each studied with the other factor controlled, it was found that parental support had a greater effect when program participation was absent. An analysis of various participation-support combinations revealed that when neither participation nor parental support was present, the students' interest in a health career was considerably less than if one or both were present.