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ABSTRACT

To meet the social service needs of the elderly, many communities across the nation are developing programs to foster social support systems involving elderly volunteers. The System to Assure Elderly Services (STAES) located in St. Louis City (Missouri), mobilizes and trains elderly persons to become volunteers who serve other elderly persons. A study was conducted to investigate characteristics that distinguish the STAES elderly volunteers (N=83) from the elderly (N=246) they serve and to examine the characteristics of the elderly volunteers who spend more time providing services than others do. A survey instrument was used to collect data regarding four human capital resources (physical functioning, psychological adjustment, perceived health, and social resources), demographic characteristics, and months spent in the STAES program. In addition, 63 volunteers kept one-week logs of the time they spent providing volunteer services. The findings indicated that three of the four human capital variables (physical functioning, psychological adjustment, and social resources) were statistically related to the elderly's becoming volunteers. Findings also indicated that the fourth human capital variable, perceived health, was a significant predictor of the amount of time elderly volunteers spent in providing services. (NB)

ELDERLY VOLUNTEERS AND THE TIME THEY CONTRIBUTE: AN EMPIRICAL STUDY*

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ABSTRACT

Meeting the social service needs of the elderly is a major challenge to the people of the United States. To meet this challenge, many communities across the nation are developing programs to foster social support systems involving elderly volunteers. This research project focuses on such a program, called the System to Assure Elderly Services (STAES), which is located in St Louis City. The program mobilizes and trains elderly persons to become volunteers who serve other elderly persons. The objectives of this study are twofold: (1) to investigate characteristics that distinguish the elderly volunteers from the elderly they serve; and (2) to investigate the characteristics of the elderly volunteers who spend more time providing services than others do.

Human capital theory is applied in developing the hypotheses. In general, we hypothesize that the elderly who have high levels of physical functioning, psychological adjustment, perceived health, and social resources are more likely to (1) become trained volunteers and (2) devote more time in serving other elderly persons than do the elderly volunteers who have a low level of such human capital. Findings from this study indicate that three of the four human capital variables--physical functioning, psychological adjustment, and social resources--are statistically related to the elderly's becoming volunteers. Findings also indicate that the fourth human capital variable--perceived health--is a significant predictor of the amount of time elderly volunteers spend in providing services. Techniques of both logistic regression and ordinary least square regression estimation are used for data analysis.

ELDERLY VOLUNTEERS AND THE TIME THEY CONTRIBUTE: AN EMPIRICAL STUDY

Like many other industrialized nations, the United States will face profound changes in demographic composition in coming decades. The proportion of persons age 65 and over will increase from the 1982 level of 11.6 percent to 13.0 percent in 2000 and to 21.8 percent in 2050.[1] These statistics indicate that this nation will have many elderly to care for in the years ahead. The nation is responding to the needs of growing numbers of elderly. This is reflected in the increasing public support for the elderly. In 1983, 27 percent of total federal outlays was for the elderly compared with 21 percent in 1971. The percentage is expected to reach 35 percent by the year 2000.[2]

At the community level, various social service agencies are helping the elderly get organized so that their needs for social services can be met most effectively and efficiently. These social service agencies recognize that establishing social support systems among the elderly is the key to accomplishing multiple goals simultaneously. First, being in a support system can help mitigate feelings of isolation and loneliness as well as solve day-to-day problems, such as going to the doctor and going out shopping. Second, help provided through a social support system can complement the assistance provided by relatives.[3] Third, services provided through a social support system economize the time and efforts of professional service providers, who can then concentrate on the elderly whose needs can only be met by professional service providers. Indeed, some believe that elderly peer groups are the most promising source of needed services for the frail elderly.[4]

Examples of programs aimed at developing social support systems abound For instance, a program called On Lok Senior Health Service in San Francisco attempts to connect the elderly with existing supportive networks to enhance their health. The Kimochi program, also in San Francisco, engages in community development so that elderly Japanese can continue to live independently and maintain viable roles in the city's Japanese community. Another program, the Tenderloin project, located in a San Francisco ghetto, assists in developing supportive networks within and between hotels where the elderly poor reside.[5] Throughout the country, there are more than 5,000 organizations dedicated to establishing and operating social support systems for the elderly.[6]

The present study focuses on another example of a program aimed at developing a social support system. Named the "System to Assure Elderly Services" (STAES) and run by a large-scale social service agency in St. Louis, the program attempts to provide needed services to the low-income elderly, through mobilizing and training volunteer elderly to become "team leaders." These team leaders are trained by professional social workers to counsel, make referrals, solve problems, and provide information. Team leaders go through intensive initial training for 4 weeks and attend ongoing monthly training sessions thereafter. Upon completion of the initial training, 3 to 7 team members are assigned to the team leader. Telephone calls and home visits are used as modes of services. The agreement between the team leaders and the agency staff is that team leaders place a telephone call to their members at least once a week. Team members are not paid for the services they provide, nor are they reimbursed for expenses incurred on behalf of team members, such as transportation. The program has been in operation for three and a half years.

Who are the elderly who volunteer to become team leaders? What differentiates them from team members? Which types of volunteers spend more time for team members than others? This study is an attempt to answer these questions. Thus, the objectives of the present study are as follows: (1) to investigate personal characteristics of team leaders, such as human capital and demographic variables, that distinguish them from team members, and (2) to investigate personal characteristics that distinguish team leaders who spend more time for team members from those who spend less. For the purposes of this paper, terms "team leaders," "elderly volunteers," and "trained volunteers" are used interchangeably.

REVIEW OF LITERATURE AND DEVELOPMENT OF HYPOTHESES

A review of the literature provides a fragmented and inconclusive picture regarding the determinants of the elderly becoming volunteers. In a study involving a program called SERVE run by the Community Service Society of New York City, Sainer and Zander found that volunteers tended to be older than nonvolunteers and overwhelmingly female. Other than that, volunteers were not found to be different from nonvolunteers.[7] In contrast to findings by Sainer and Zander, Rosenblatt found that the elderly who were willing to volunteer tended to be younger than those not so inclined. Furthermore, Rosenblatt found that prospective volunteers were in better health and tended to enjoy life more than nonvolunteers.[8]

In a study involving Foster Grandparents to retarded youngsters, Gray and Kasteler found no difference between volunteer and nonvolunteer elderly persons in terms of age, sex, and education, although they found a higher level of morale among the volunteer group than among the nonvolunteer group.[9]

Dye, Goodman, Bley, and Jensen investigated whether volunteers in a community center's programs were different from nonvolunteers in terms of adjustment to life, perceived needs, demographic variables, and past patterns of participation in volunteer organizations. Of all variables considered, they found that volunteers were different from nonvolunteers on only two counts: sex and past patterns of organizational participation. That is, volunteers tended to be overwhelmingly female and tended to have experienced other volunteer activities before they joined the community center's programs.[10] Lambert, Guberman, and Morris, like Dye et al., found that previous experience as a volunteer was related to the elderly's willingness to volunteer in community services; but they found, in addition, that educational level attained and self-perception of health were significant factors determining whether the elderly were willing to volunteer.[11] It is important to note, however, that the study by Lambert and associates dealt with potential volunteers while the study by Dye et al. dealt with actual volunteers.

As indicated, the existing literature on the determinants of the elderly becoming volunteers does not tell us clearly what types of elderly become volunteers. Findings so far are fragmented. Furthermore, there is a dearth of literature on the amount of time the volunteer elderly spend for other elderly persons. In recent years, there has been no significant research done to address these questions.

We can apply human capital theory, however, to guide the development of hypotheses concerning the determinants of the elderly becoming volunteer team leaders and the determinants of the amount of time they spend for their team members. A review of the literature, as discussed later, supports the hypothesis that the elderly who possess high levels of human capital have a

high probability of becoming volunteers. The human capital theory also suggests that, among elderly volunteers, those with high levels of human capital spend a great deal of time providing services.

Since the concept of human capital has not been extensively used to study the behavior of the elderly in regard to serving fellow elderly persons, it is useful to discuss the theory briefly. It was originally developed by labor economists to study the performance of workers in the labor market. Human capital theory states that a person's resources are viewed as a stock of capital which determines the individual's productivity, and hence, his or her earnings. Human capital can be augmented by "investing" in activities such as education, postschool training, and work experience. Increases in earnings following such investment are considered a return on the human capital investment.[12]

In recent years, human capital theory has been considerably expanded. Several researchers have developed elaborate sets of variables to empirically test the theory's basic assumption. For example, in a 1976 study Kalachek and Raines defined the following factors as human capital: (1) variables relating to physical conditions--for example, health and age; (2) variables relating to personal characteristics--for example, attitudes and psychological traits; (3) variables relating to an individual's upbringing--for example, parents' socioeconomic status, psychological traits, and attitudes toward disciplines.[13]

The present study adapts the concept of human capital, as defined by Kalacheck and Raines, and analyzes those human capital variables that may have a bearing on elderly persons' becoming volunteer team leaders. We hypothesize that, in general, the elderly who possess a greater amount of human capital resources will have a greater potential for becoming volunteers and for

spending more time for other elderly persons once they become volunteers. More specifically, the elderly who are vital and vigorous--those who can function physically, who feel healthy, who are adjusted psychologically, and have social resources of their own--are more likely to become volunteers and spend more time providing services. For the purposes of the study, then, human capital among the elderly will be captured by (1) physical functioning, (2) perceived health, (3) psychological adjustment, and (4) social resources.

Indeed, past research findings support the plausibility of the general hypothesis set forth in this study. Ozawa, in her study using data from the Survey of the Low-Income Aged and Disabled (SLIAD), shows that, other things being equal, elderly persons with high levels of these types of human capital resources had a significantly lower probability of applying for SSI.[14] Another study by Ozawa, again using SLIAD data and a similar set of human capital variables, shows that the elderly with high levels of human capital resources feel less deprived of medical care and social contacts.[15] The findings from these two studies imply that elderly persons with high levels of human capital resources who can manage their finances without resorting to SSI and can maintain a sense of self-sufficiency and contentedness may indeed be those who become volunteers to serve other elderly persons and spend a great deal of time providing services.

Other studies show that human capital variables, such as those considered in the present study, are themselves highly intercorrelated. For example, several studies have demonstrated a relationship between social resources on the one hand and physical health, mental health, satisfaction, and morale on the other.[16] Evidence also confirms the relationship between physical health and functioning on the one hand and psychological adjustment to old age on the other.[17] The existence of high intercorrelations among human

capital variables needs to be kept in mind when choosing a statistical procedure.

For the purposes of this study, the following hypotheses are developed:

1. Other things being equal, elderly who have high levels of human capital resources have a greater probability of becoming volunteer service providers (team leaders).
2. Other things being equal, elderly volunteers who have high levels of human capital resources spend more time providing services to other elderly persons (team members) than do elderly volunteers who have low levels of such resources.

METHODOLOGY

Sample and Source of Data

As mentioned, this study focused on the elderly who participated in the STAES program as volunteer service providers for other elderly persons. Since there were only 83 elderly volunteers in the program at the time of the study, we decided to include within our sample all those who agreed to participate in the study. All 83 volunteers agreed. Thus, the sample of volunteers is equal to the universe of volunteers in the project. In addition to these volunteers, all team members served by the 83 volunteers were targeted for the study. Out of 443 active team members, there were 246 who could be located and who agreed to participate in the study.

A survey instrument was developed to collect data regarding human capital resources, demographic characteristics, months of participation in the program, living arrangements, and location of residence. Interviews took place at the homes of the STAES participants from January 1, 1985 through July 31, 1985. In addition, during the same period, a one-week time study was conducted to measure the amount of time each volunteer spent for his or her

team members. In this time study, 63 volunteers agreed to participate. To conduct the study, a service log was devised and used to record the types of services volunteers provided and the time spent providing such services. To minimize bias in responses, volunteers were asked about their daily activities as well as about services to their team members.

Conceptual Framework and Variables

Conceptual Framework for Investigating Characteristics of the Volunteer Elderly:

To investigate what characteristics distinguish elderly volunteers from team members, we built a model in which the status of being a volunteer is considered as the dependent variable and human capital variables are considered as independent variables. Since we believe that age, sex, race, and education may affect the dependent variable, we included them in the regression model as controls.

Traditionally, education is conceived as a human capital variable. Because the purpose of this study is investigating the behavior of the elderly in volunteer activities, however, we selected as human capital variables those that might capture the current resourcefulness and vitality of the elderly. For this reason education was treated as a control.

Because the dependent variable takes the form of a dichotomous variable, it is appropriate to use techniques of logistic regression estimation. To recapitulate, the following variables were included in the logistic regression analysis to test the first hypothesis set forth:

Dependent Variable

- Whether an elderly person participating in the STAES program is a volunteer.

Independent Variables

- Physical functioning (human capital)

- o Perceived health (human capital)
- o Psychological adjustment (human capital)
- o Social resources (human capital)

Control Variables

- o Age
- o Sex
- o Race
- o Years of schooling

Conceptual Framework for Investigating the Amount of Time Spent by the Volunteer Elderly: To investigate the relationship between the characteristics of elderly volunteers and the amount of time these volunteers spend for their team members, we built a model in which the number of minutes spent during one week for such purposes is considered as the dependent variable and human capital variables are considered as independent variables.

To test the second hypothesis set forth, however, we needed to include three additional control variables. These are (1) length of time the elderly have participated as trained volunteers, (2) level of client needs, and (3) the number of team members served by elderly volunteers. Duration of participation was included as a control because the amount of time elderly volunteers spend for their team members may be a function of experience. That is, more experienced volunteers may be able to accomplish a certain task in a shorter time than less experienced volunteers. Thus, to measure the net effect of human capital variables on the amount of time volunteers spend for their team members, length of experience should be controlled. The level of client needs may also influence the amount of time elderly volunteers spend. Therefore, we included in the regression model client capability for physical functioning as a proxy for this control variable. We assumed that client

capability for physical functioning could be a close proxy for client needs in general and did not create problems with endogeneity. The number of team members also represents demands placed on elderly volunteers, and thus may influence the amount of time spent by volunteers. For this reason, the number of team members in the team was included as a control variable.

Because interval data are used to formulate the dependent variable, techniques of ordinary least square estimation can be appropriately used for data analysis. To recapitulate, then, the following variables are included in the regression analysis.

Dependent Variables

- Time (in minutes) spent by elderly volunteers to serve other elderly on their teams during one week.

Independent Variables

- Physical functioning (human capital)
- Perceived health (human capital)
- Psychological adjustment (human capital)
- Social resources (human capital)

Control Variables

- Age
- Sex
- Race
- Years of schooling
- Number of months participated in the program as trained volunteers
- Average score of physical functioning capability of team members in the team
- Number of team members in the team

Definitions of Variables

Below we list and define the variables involved in this study.

The status of the trained volunteer is a dichotomous variable, with volunteers being assigned the value of one, and team members (nonvolunteers) being assigned the value of zero.

Time spent by the trained volunteer in service to team members is the number of minutes spent during one week for such purposes.

Physical functioning is defined as the degree to which an elderly person can perform specific daily activities--for example, using the telephone, traveling to places beyond walking distance, shopping, preparing meals, taking care of money matters, eating, dressing, bathing, etc. A Physical Functioning Index is developed on the basis of individual response to 15 questions about physical functioning. Each response is ranked on a 4-point continuum, from 1 meaning "cannot perform" to 4 meaning "can function with no problem." Index scores range from 15 to 60.

Perceived health is measured by the elderly person's response to a single question which asks the person to rate his/her physical health. A 4-point scale ranging from 4 for "excellent" to 1 for "poor" is used.

Psychological adjustment is defined as the degree to which an elderly person is psychologically adjusted to his/her own daily life. To measure the degree of adjustment, the respondent was asked whether he/she was satisfied, downhearted, full of energy, bored, excited, happy, empty, or in good spirits. Adapting the Geriatric Depression Scale developed by Brink et al., a Psychological Adjustment Index score is obtained from each individual's responses to 10 closed-answer questions about psychological adjustment.[18] Each response is ranked on a 3-point scale; 1 meaning "poorly adjusted" to 3 meaning "well adjusted." Index scores range from 10 to 30.

Social resources. To measure the extent of the respondent's social resources, a maximum of 11 questions were asked by the interviewer (the number depending on the response pattern). Adapting the OARS Social Resource Scale from the Duke University Center for the Study of Aging and Human Development, these 11 questions are designed to determine the quantity and quality of social contacts that the respondent has with others.[19] These questions concern marital status, the number of people living with the respondent, the frequency of visiting and talking with other people (visits by team leaders are excluded), whether the respondent has a confidant, whether the frequency of visits from relatives and friends is considered adequate, and whether the respondent has someone to turn to in case of an emergency. After probing into these areas, the interviewer scored the responses by assigning to each a value ranging from 1 to 6, with 6 representing "excellent social resources" and 1 representing "totally socially impaired."

Age is measured in years.

Sex. The value of one is assigned to females; zero to males.

Race. The value of one is assigned to nonwhites; zero to whites.

Years of education are defined in three categories. The value of one is given for less than 8 years of education; the value of 2 for 8 through 12 years; and the value of 3 for more than 12 years.

Months participated in the programs as trained elderly volunteers is self-explanatory.

Average score of physical functioning capability of clients in the team is obtained by summing physical functioning index scores of team members served by a particular volunteer and dividing the resultant sum by the number of team members involved.

Number of team members in the team is the number of elderly served by the team leader.

FINDINGS

Determinants of Being an Elderly Volunteer

Descriptive Statistics: What are the characteristics of the elderly that distinguish trained volunteers from team members? On the bivariate level, the following variables are distinguishing characteristics: (1) physical functioning, (2) perceived health, (3) psychological adjustment, (4) social resources, and (5) age.

Table 1 here

As seen in Tables 1 and 2, elderly volunteers score higher in all human capital variables considered in this study. They can engage in daily activities (including personal care, such as eating, dressing, and bathing; also in instrumental activities, such as shopping, preparing meals, and washing clothes) with significantly greater ease than can team members. The difference in mean scores of physical functioning of these two groups is statistically significant at the $p < 0.001$ level.

Elderly volunteers are better adjusted psychologically. They feel less depressed, more energetic, in better spirits, find life more exciting, and want to go out of the home more often than do team members. The difference in mean scores of psychological adjustment of these two groups is statistically significant at the $p < 0.001$ level.

Elderly volunteers have more social resources than do team members. For instance, volunteers are more likely than team members to have friends to visit them or talk with them over the phone, have someone they can trust, and

have someone they can depend on indefinitely when they become ill. Thus, the average social resource scale is significantly higher than that of team members. The difference in mean scores of social resources of these two groups is statistically significant at the $p < 0.001$ level.

Age, a control variable, is another characteristic that distinguishes volunteers from team members. They are significantly younger than team members. The difference in mean ages of these two groups is statistically significant at the $p < 0.001$.

Table 2 here

As seen in Table 2, elderly volunteers feel significantly healthier than do team members. Fourteen percent of volunteers report that their health is excellent compared with only 2 percent of team members. In addition, 29 percent of volunteers feel their health condition is good, while only 22 percent of team members feel this way. The relationship between responses regarding health condition and being a volunteer is statistically significant at the $p < 0.001$ level, with a chi-square value of 21.3 and one degree of freedom.

As illustrated, all four human capital variables are significantly related, at the bivariate level, to an elderly person's volunteering as a service provider. However, these four variables are highly intercorrelated. Intercorrelations among them are all significant at the $p < 0.001$ level (table not shown). Thus, in order to measure the predictive power of each of these variables, the effects of the other variables need to be controlled. A regression analysis can achieve this objective. Since the dependent variable

is a dichotomous variable, logistic regression is an appropriate statistical procedure.

Logistic Regression Analysis of Being an Elderly Volunteer: Which variable predicts whether an elderly person is a volunteer when other variables are controlled? Table 3 presents the results of this regression analysis.

Table 3 here

The regression results indicate that three of the four human capital variables considered in this study have statistically significant predictive power, even when other variables are controlled. The levels of statistical significance of physical functioning and psychological adjustment are persistently high ($p < 0.001$). However, the level of statistical significance of the social resources variable decreases to $p < 0.05$. Perceived health (the fourth human capital variable) loses statistical significance when the effects of other variables are accounted for. These statistics tell us that, other things being equal, the elderly who have a high level of physical functioning, those who have a high level of psychological adjustment, and those who have a high level of social resources are more likely to become volunteers than their counterparts.

Even after other variables are accounted for, age continues to have a strong predictive power. The younger the elderly are, the more likely they are to become volunteers.

Determinants of Time Spent by Volunteers for Team Members

To investigate the relationship between the time spent by volunteers and their backgrounds in terms of human capital, demographic, and other control

variables, three separate regression analyses were performed: the first regression deals with the total time spent by volunteers; the second deals with time spent for telephone calls; and the third deals with time spent for home visits. Disaggregation of total time into these two categories seems instructive since the type of skills and the amount of energy required to engage in telephone calls and home visits may differ. Table 4 presents the regression results.

Table 4 here

Regression Analysis of Total Time Spent by Elderly Volunteers: On the average, elderly volunteers in the STAES program spent 124 minutes on behalf of their team members during the one-week time study. The standard deviation was 169 minutes, indicating that there is a wide range in the amount of time these volunteers spend.

As Table 4 shows, only two variables are statistically significant predictors of total time spent by volunteers. They are (1) perceived health and (2) the volunteer's sex. The volunteer elderly who perceive their health in a better condition tend to spend more time for their team members than do those who perceive their health in a poorer condition. It is interesting to note that physical functioning does not affect the amount of total time these volunteers spend for their team members, although physical functioning is a statistically strong predictor of their being a volunteer. Likewise, the volunteers' degree of psychological adjustment and their amount of social resources appear unrelated to the amount of time they spend.

Regression Analysis of Time Spent for Telephone Calls by Elderly Volunteers: On the average, elderly volunteers spent 81 minutes for telephone calls to their team members. The standard deviation was 114, again indicating a wide range in the amount of time spent for such a purpose.

Table 4 shows that a different set of independent variables is associated with the time spent for telephone calls than is the case for total time spent. Physical functioning emerges as a strong predictor of the dependent variable. Notice, however, that the sign of the direction is negative. This means that volunteers who function worse physically spend more time for telephone calls than those who function better. As is the case for total time spent by volunteers, perceived health is positively related to time spent for telephone calls. That is, other things being equal, elderly volunteers who feel healthy spend more time for telephone calls.

Regression Analysis of Time Spent for Home Visits by Elderly Volunteers: On the average, volunteers spent 43 minutes for visiting their team members during the week of the time study. The standard deviation is high (139 minutes). That volunteers spent only 43 minutes during one week for home visits signifies the fact that home visits generally are not the preferred mode of service delivery. Only 24 percent of the volunteers made at least one home visit; seventeen percent made one to 5 home visits; seven percent made six or more home visits; 76 percent made none at all.

Table 4 shows that the variable of the volunteer's sex emerges as an even stronger predictor of time spent for home visits than is the case for total time spent. Male volunteers spend significantly more time for home visits than do female volunteers. The rest of the independent variables are not related, with statistical significance, to time spent for home visits. However, notice the sign of the coefficient for physical functioning--it is

positive, the opposite of the sign of this coefficient in relation to time spent for telephone calls. This may indeed indicate that calling team members on the phone does not require much physical strength, but visiting team members at home requires some degree of physical functioning capability.

DISCUSSION AND IMPLICATIONS

How do the findings from this present study compare with earlier findings by other researchers? While some of the present findings from this study support earlier findings, others do not. First, the finding that elderly volunteers are significantly younger than team members supports an earlier finding by Rosenblatt, who found that the elderly who are willing to volunteer for activities in a social service agency tend to be younger than those who are not willing.[20] On the other hand, a finding by Sainer and Zander that volunteers in nonprofit organizations such as schools and the Red Cross tend to be older than nonvolunteers is contrary to our study.[21]

Findings from this study generally support earlier findings that the volunteer elderly tend to have better health and higher morale, feel healthier, and generally enjoy life more than the nonvolunteer elderly.[22] Moreover, present findings add further refinement to earlier findings. According to this study, the elderly who can function physically and those who are well adjusted psychologically tend to become volunteers. However, perceived health is not related to their becoming volunteers. Instead, perceived health determines how much volunteer work they do once they become volunteers.

In a similar fashion, present findings with regard to the effect on education on the elderly's volunteer work contrast with earlier findings in an interesting way. Lambert, Guberman, and Morris found that education makes a difference in whether elderly persons are willing to volunteer to do some

worthwhile service in a social service agency.[23] In contrast, this study found that education does not make a difference in the elderly's becoming volunteers, but, according to our separate analysis (not shown in this paper), it does make a difference in what types of services (instrumental vs. socializing and reassuring services) volunteers engage in once they become volunteers. The results of this analysis will be presented in future papers.[24]

Perhaps the most interesting finding from this study with regard to human capital variables is that physical functioning, psychological adjustment, and social resources are all important factors which distinguish elderly volunteers from team members; however, among the volunteers, it is perceived health that really determines how much time these volunteers spend for their team members. As long as they feel healthy, they spend more time in serving their team members than those who feel less healthy. In fact, when it comes to spending time for calling team members on the phone, those volunteers who function worse physically tend to spend more time than their counterparts. Again, what really counts is good perceived health in determining how much time volunteers spend for telephone calls.

Another interesting finding is that male volunteers spend more time for team members--especially for visiting them at home--than do female volunteers. What accounts for this difference? One can speculate as follows: Once elderly males become volunteers, they may act according to the role prescribed to males. Males are expected to "go out and do something." Thus, male volunteers may choose the home visit rather than the telephone call as a form of service delivery. And, visiting team members may take a longer time than calling them on the phone. Another explanation may be that volunteers invariably must be able to drive a car, or be physically strong enough to walk

several blocks or more, to reach team members' homes. Once there, they may engage in instrumental services (such as taking team members to the doctor) that require a certain degree of physical strength. All these requirements fit well with male volunteers.

On the basis of findings from this study, one can draw the following implications for the administrator running the STAES program as well as for those who are interested in developing social support systems for the elderly. First, in recruiting future elderly volunteers, administrators will find it fruitful to locate the elderly who are relatively young and who have high levels of physical functioning, psychological adjustment, and social resources, and solicit them to participate as volunteers in programs aimed at developing social support systems. Second, once recruitment is completed, administrators can expect that elderly volunteers who feel healthy and elderly volunteers who are male will spend more time for services than their counterparts. Although it is difficult to establish a causal relationship between perceived health and time spent by elderly volunteers, it may be fruitful for administrators to engage elderly volunteers in a wellness program so that volunteers can keep feeling healthy. Third, it should be more efficient for administrators to make volunteer work assignments according to volunteers' sex and their levels of physical functioning and perceived health--that is, telephone calls to volunteers with relatively low levels of physical functioning and to volunteers with high levels of perceived health, and home visits to male volunteers.

FOOTNOTES

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24. Data are made available upon request.

Table 1

Means and Standard Deviations of Physical Functioning Index, Psychological Adjustment Index, and Social Resources Scales of Trained Elderly Volunteers and Team Members

	Team Leaders		Team Members		Difference in Means	
	Means	s.d.	Means	s.d.	t-value	p <
Physical functioning	56.6	5.5	49.5	9.1	8.48	0.001
Psychological adjustm't	26.7	3.5	22.6	5.0	8.21	0.001
Social resources	5.1	1.2	4.4	1.3	4.53	0.001
Age	64.8	14.1	73.6	8.4	5.37	0.001

Table 2

Frequency and Percentage Distribution of Trained Elderly Volunteers (Team Leaders) and of Team Members by Level of Perceived Health

Question: How would you rate your overall health at the present time?

	Team Leaders		Team Members	
Perceived Health	Number	Percent	Number	Percent
Poor	14	(17)	66	(27)
Fair	33	(40)	120	(49)
Good	24	(29)	54	(22)
Excellent	12	(14)	6	(2)
Total	83	(100)	246	(100)

Chi-Square = 21.3 — $p < 0.001$

Table 3

Logistic Regression Results: Determinants of the Elderly's Becoming Trained Volunteers

Independent Variables	Beta Weight	Chi-Square
Sex	0.8160	2.51
Race	0.0853	0.06
Age	-0.0881	20.47***
Education	-0.3280	1.86
Human Capital Variables		
Physical Functioning	0.0932	10.10***
Perceived Health	-0.1116	0.27
Psychological Adjustment	0.1947	18.34***
Social Resources	0.2383	2.64*
Intercept	-5.9491	6.76**
Sample Size		329
Model Chi-Squre		94.20***
R^2		0.2672***

* Statistically significant at the 0.05 level under one-tail test
** Statistically significant at the 0.01 level under one-tail test
*** Statistically significant at the 0.001 level under one-tail test

Table 4
Regression Results: Determinants of
Time Spent by Trained Elderly Volunteers
(t values in parentheses)

	B-Coefficient		
Independent Variable	Total Time	Time for Telephone Tel Calls	Time for Home Visits
Sex	-168.799* (-1.970)	14.553 (0.285)	-183.352** (-2.993)
Race	-53.068 (-0.848)	12.964 (0.348)	-66.033 (-0.147)
Age	-2.543 (-0.792)	-0.834 (-0.420)	-1.809 (-0.758)
Education	9.658 (0.232)	-15.458 (-0.624)	25.116 (0.844)
Aver. Physical Functioning of Team Members	2.288 (0.707)	1.172 (0.482)	1.716 (0.588)
Number of Team Members	3.761 (0.463)	4.194 (0.866)	-0.432 (-0.074)
Months with STAES	-0.038 (-0.014)	0.884 (0.553)	-0.923 (-0.481)
Human Capital Variables			
Physical Functioning	-4.651 (-1.057)	-7.560** (-2.886)	2.909 (0.925)
Perceived Health	58.256* (1.973)	36.769* (2.090)	21.487 1.018
Psychological Adjustment	5.142 (0.667)	3.942 (0.858)	1.200 (0.218)
Social Resources	19.480 (0.706)	12.606 (0.731)	7.474 (0.379)
Intercept	199.181 (0.554)	200.457 (0.936)	-1.275 (-0.005)
Sample Size	63	63	63
R^2	0.2192	0.2311	0.2670

* Statistically significant at the 0.05 level under one-tail test
** Statistically significant at the 0.01 level under one-tail test
*** Statistically significant at the 0.001 level under one-tail test