

**Continuous Participation in Voluntary Groups as a  
Protective Factor for the Psychological Well-Being  
of Adults Who Develop Functional Limitations:  
Evidence from the National Survey of Families  
and Households**

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RUNNING HEAD: Voluntary Group Participation

Continuous Participation in Voluntary Groups as a  
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## Abstract

**Objectives.** While previous studies have indicated that declining functional health is associated with individuals' poorer psychological well-being, few studies have examined factors that can protect adults from the loss of mental health following functional decline. Guided by continuity theory, this study investigated the extent to which continuous participation in voluntary groups (recreational, religious, and/or civic) buffers individuals against the harmful psychological effects of developing functional limitations.

**Methods.** Longitudinal data came from 4,872 respondents ages 35 to 92 in the National Survey of Families and Households 1987-1993 who reported having no functional limitations at Time 1.

**Results.** Multivariate models controlling for sociodemographic factors, as well as participants' psychological well-being at Time 1, indicated that developing functional limitations over a five-year period was associated with greater increases in depressive symptoms and lower levels of personal growth. Increases in depressive symptoms, however, were less severe among participants continuously involved in recreational groups. Additionally, the association between developing functional limitations and lower levels of personal growth did not hold for respondents who continuously participated in religious groups.

**Discussion:** Findings suggest that continuous participation in certain types of voluntary groups can moderate the negative effects of developing functional limitations on particular dimensions of psychological well-being.

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Functional limitations—or having health conditions that interfere with one’s ability to complete daily tasks of living—have profound implications for the quality of individuals’ lives, as well as for social systems that must provide care for people with disabilities (Lawton, 1991; Jacobzone, 2000). Given the challenges that functional health impairments pose for both individuals and society, much research has focused on identifying the causes of functional limitations so as to inform efforts to lower rates of impairment (e.g., Kono et al., 2004; McCusker, Kakuma, & Abrahamowicz, 2002). While promoting functional health at the individual and population levels is important, the fact remains that an increasing number of adults in the U.S. have functional limitations (AARP, 1998). Moreover, advancing the “longevity of morbidity” hypothesis, scholars have suggested that it is becoming increasingly common for people with functional limitations to survive more years living with disability (Zarit & Zarit, 1998). As a rising number of adults acquire and maintain functional limitations, scholarly efforts to more fully and systematically understand the consequences of living with functional limitations become increasingly critical.

The aim of this study was to in part address this need by investigating variation in individuals’ mental health following their developing functional limitations. While previous studies have indicated that declining functional health is associated with individuals’ poorer psychological well-being, few studies have explicitly examined factors that can protect adults from the loss of mental health following functional decline. Guided by continuity theory and

using longitudinal data from the National Survey of Families and Households 1988-1993, this study examined continuous participation in voluntary groups (recreational, religious, and civic) as a protective factor that might buffer adults against the deleterious psychological effects of having developed functional limitations.

### Theoretical Background

Continuity theory, a well-developed social gerontological theory, provides insight into how on-going voluntary group participation might help individuals to avoid the negative psychological effects of developing functional limitations. Continuity theory begins with the assumption that as people age, they are likely to experience significant life changes, such as widowhood or retirement (Atchley, 1989; 1993; 1999). The theory posits that adults tend to give significance to these changes “in relation to a general notion of a relatively continuous whole” (Atchley, 1993, p. 7). In other words, individuals are both predisposed and motivated to think of themselves and their lives as having coherence and consistency even when facing major life changes. Continuity theory postulates that people strive to achieve this sense of stability both in terms of internal continuity (i.e., maintaining a coherent sense of who one is) and external continuity (i.e., maintaining a coherent sense of one’s social world). Although continuity theory recognizes that striving towards continuity might not be adaptive for individual well-being under all circumstances, the theory posits that continuity is usually an effective means through which people can develop and adapt as a result of change (Atchley, 1989).

Continuity theory further explicates mental and behavioral strategies that can foster an individual’s sense of continuity. For example, interpreting new information about one’s self in a way that validates one’s existing self-concept can help people maintain a sense of internal continuity, and soliciting the company of familiar persons can enhance a person’s sense of

external continuity. Continuity theory discusses a variety of life domains in which people employ these continuity-maintaining strategies, including the domain of activities (Atchley, 1993).

Participation in voluntary groups, in particular, has been discussed as a promising source of activity-related continuity in that activities occurring within overt social environments—such as within the context of a stable group infrastructure or within well-defined role relationships—can more readily provide individuals with a sense of stability over time (Atchley, 1989).

In sum, continuity theory suggests that as people experience significant life changes, they engage in psychosocial and behavioral strategies that help them to maintain a sense of stability in terms of their self and their social worlds. As such, continuity theory suggests that as adults make the transition to a state of impaired functional health (i.e., a significant life change), continuous participation in voluntary groups (i.e., an activity-related source of continuity) can help them to maintain higher levels of well-being (i.e., adapt more beneficially to this change).

### Empirical Background

A substantial body of evidence suggests that loss of physical health is a risk factor for individuals' poorer psychological well-being (Okun et al., 1984). Moreover, several studies drawing on longitudinal data from large population samples have indicated that, overall, individuals' greater levels of physical disability are associated with their poorer mental health over time (Kunzmann, Little, & Smith, 2000; Taylor & Lynch, 2004). Nevertheless, findings from other studies have indicated that there is substantial variation in psychological well-being among people with physical health problems (Brief et al., 1993), and that individuals' perceptions of their health-related quality of life and overall well-being do not entirely overlap (Spiro & Bosse, 2000). These findings suggest that there are likely factors that can protect aspects of adults' well-being when faced with the challenges of impaired functional health.

Scholars have long discussed how social integration and productive activities might promote optimal states of well-being, particularly among individuals facing age-related changes (Rowe & Kahn, 1997). Building on this idea, researchers have focused increasingly on the physical and mental health effects of participation in voluntary groups, or groups that are: 1) outside of one's private network of friends and families, 2) not mandated by the government or the market, and 3) formed as a result of shared interests among a collective of individuals (Pikus, 2005; Sobieraj & White, 2004). Empirical findings have documented linkages between voluntary group participation and higher levels of well-being. For example, previous research has indicated that formal religious participation is associated with better physical and mental health (see Levin, 1994, and Levin & Tobin, 1995, for a review), participation in activities within formal social groups is predictive of adults' greater happiness over time (Menec, 2003), engaging in productive activities within secular groups promotes adults' better mental health (Jun, 2002), and formal volunteering is linked with increased longevity, fewer depressive symptoms, and better self-reported health and functioning (Lum & Lightfoot, 2005; Morrow-Howell et al., 2003).

Although this growing body of research empirically demonstrates the potential benefits of voluntary group participation for individuals' well-being, understanding of the linkages between voluntary group participation and enhanced well-being is far from complete. While multiple researchers have posited that voluntary group participation is particularly salient for the well-being of more vulnerable adults, such as widows (Bennett, 1998) and the oldest-old (Silverstein & Parker, 2002), there has been little investigation of whether a range of types of voluntary group participation can protect individuals at greater risk for poorer well-being. Additionally, few studies regarding the associations between voluntary group participation and psychological well-being have simultaneously examined participation in multiple types of

voluntary groups, as well as multiple dimensions of psychological well-being. Given previous findings that different psychosocial processes might lead to participation in distinct types of voluntary groups (Janoski & Wilson, 1995), and that the effects of voluntary group participation might be particularly salient in terms of certain aspects of mental health (Greenfield & Marks, 2004), it is important for additional research to simultaneously examine a range of types of voluntary group participation as well as multiple mental health outcomes. Finally, very few studies on the linkages between voluntary group participation and psychological well-being have considered the dynamic nature of such participation, that is, that participants in voluntary groups differ with respect to how long they have been involved in such groups. Continuity theory suggests conditions under which more long-term participation in voluntary groups might be particularly advantageous for individuals' psychological well-being.

This study aims to address these gaps in the literature on voluntary group participation and psychological well-being, as well as gaps in research on variation in the psychological consequences of functional limitations, by examining continuous participation in voluntary groups as a protective factor against the negative psychological effects of having developed functional limitations.

### *Hypotheses*

Guided by continuity theory and previous empirical work, we formulated a conceptual model, which suggests the risk-buffering effect of continuous participation in voluntary groups for adults' psychological well-being. (Refer to Figure 1.) We derived three hypotheses from this model:

*Hypothesis 1 (H1):* Adults who develop functional limitations over a five-year period will report poorer psychological well-being (a greater increase in depressive symptoms and lower levels of personal growth) in contrast to adults who do not experience any functional limitations.

*Hypothesis 2 (H2):* Adults who maintain participation in voluntary groups (recreational, religious, and/or civic) over a five-year period will experience better psychological well-being (a greater decline in depressive symptoms and higher levels of personal growth) in contrast to adults who do not maintain continuous participation in voluntary groups over a five-year period.

*Hypothesis 3 (H3):* Adults who develop functional limitations, but who also maintain participation in voluntary groups over a five-year period, will report better psychological well-being in contrast to adults who develop functional limitations, but who do not maintain continuous participation in voluntary groups over a five-year period.

## Method

### *Data*

This study used data from the first and second waves of the National Survey of Families and Households (NSFH), which employed a stratified, multistage area probability sampling design that generated a cross-section of 9,637 U.S. households with an oversampling of African Americans, Puerto Ricans, Mexican Americans, single-parent families, families with step-children, cohabiting couples and recently married persons (Sweet, Bumpass, and Call, 1988). For the first wave of data collection (1987-88), a primary respondent at least 19 years of age was randomly selected from each household to participate in a personal interview; 13,007 non-institutionalized adults completed this interview with a response rate of 75%. The second wave of data collection (1992-1993) included interviews with 10,007 of the original respondents with a response rate of 82% (Sweet & Bumpass, 1996). The current study's subsample included all

participants who completed interviews at T1 and T2 (to allow for longitudinal analyses), who were at least 35-years-old at T1 (to focus analyses on midlife and older adults), and who reported no functional limitations at T1 (to allow for a prospective design), yielding a sample size of 4,646 participants.

### *Measures of the Dependent Variables*

*Depressive symptoms.* Depressive symptoms were assessed at both T1 and T2 with a 12-item version of the Center for Epidemiological Studies Depression Scale (*CES-D*; Radloff, 1977). Respondents were asked how many days during the past week they experienced various depressive symptoms, such as feeling that everything they did was an effort and talking less than usual. Respondents responded to each item on an eight-point scale, with “0” indicating they had experienced no days of the week with that depressive symptom and “7” indicating daily experiences of the symptom. Each respondent received an average-item score on depressive symptoms with higher scores indicating higher levels of depressive symptoms. Preliminary analyses detected a negative skew in the distribution of participants’ responses on this scale. To more adequately meet the assumption of multivariate normality for variables when estimating Ordinary Least Squares (OLS) regression models, participants’ scores were logged after adding a constant of 1. Cronbach’s alpha for depressive symptoms was .93 at both T1 and T2. Table 1 provides descriptives for this variable and all other analytic variables.

*Personal growth.* One dimension of psychological well-being that has been found to be particularly vulnerable to decline with age is the experience of personal growth (Ryff, 1995). Therefore, we deemed it valuable to explore this aspect of psychological well-being in our study. At T2, personal growth was assessed with Ryff’s three-item scale (Ryff, 1989). For large survey use, Ryff created this three-item index as an additive measure designed to represent the

conceptual breadth of “personal growth,” which she found in factor analyzing her 20-item scale (Ryff & Keyes, 1995). One subfactor, related to having a feeling of continued development, is indicated with the item, “For me, life has been a continuous process of learning, changing, and growth.” A second subfactor, related to seeing improvement in self and behavior over time, is indicated with the item, “I gave up trying to make big improvements or changes in my life a long time ago.” A third subfactor, related to changing in ways that reflect more self-knowledge and effectiveness, is indicated with the item, “I think it is important to have new experiences that challenge how I think about myself and the world.” For all three items, respondents were asked to indicate the degree to which they agree or disagree with the statements on a six-point continuum (1 = *strongly disagree*). The item regarding participants having given up trying to “make big improvements” in their life was reverse coded, and all items were summed such that higher scores indicated more personal growth. This additive index is correlated highly ( $r > .70$ ) with its parent 20-item, highly reliable scale (Ryff & Keyes, 1995).

#### *Measures of the Independent Variables*

*Functional limitations.* Functional health was assessed at both T1 and T2. Participants were asked: “Do you have a physical or mental condition that limits your ability to: a) care for personal needs, such as dressing, eating or going to the bathroom; b) move about inside the house; c) do day-to-day household tasks; d) climb a flight of stairs; e) walk six blocks?” To create this study’s prospective, longitudinal design, only respondents who reported “no” to all of the above items at T1 were included in the sample. If respondents reported that a health condition at all limited their ability to engage in any of the activities indicated by the five items at T2, they were coded as “1” on having developed functional limitations. All other participants were coded as “0” on this variable.

*Continuous participation in voluntary groups.* Participants were asked about their participation in several types of voluntary groups at both T1 and T2. Respondents who reported at least monthly participation in “sports, hobby or garden groups, or discussion groups” at both T1 and T2 were coded “1” on continuous participation in *recreational groups*; all other respondents were coded “0” on this variable. Respondents who reported at least monthly participation in “church-affiliated groups” (with the measure specifying that the respondents were not to consider participation in religious services for this item) at both T1 and T2 were coded “1” on continuous participation in *religious groups*; all other respondents were coded “0” on this variable. Finally, respondents who reported at least monthly participation in “service clubs, fraternal groups, or political groups” at both T1 and T2 were coded “1” on continuous participation in *civic groups*; all other participants were coded “0” on this variable.

#### *Control Variables*

Previous studies have demonstrated that several sociodemographic factors—such as race/ethnicity, gender, age, education, income, parental status, marital status, and employment status—are associated with physical health, voluntary group participation, and/or psychological well-being (e.g., Mrozcek & Kolarz, 1998; Pearlin & Johnson, 1977; Ryff, 1995; Tucker, 1995; Umberson & Gove, 1989). This study statistically controlled for these factors in all models to reduce confounding that might have occurred between these variables and our variables of interest. Dichotomous variables were created for *gender* (1 = female), *employment status* (1 = employed), *marital status* (1 = married), and *parental status* (1 = child less than 19 years of age in the respondent’s household). A categorical variable was created to indicate respondents’ *educational attainment* with categories of fewer than 12 years of education, 12 years of education, 13-15 years of education, and 16 or more years of education. A categorical variable

was also created to indicate respondents' *race/ethnicity* with categories of non-Hispanic White, Black, Mexican American, and other. Continuous variables were created for respondents' *age* (in years) and *household income* (respondents' annual income combined with that of all other household members). With the exception of race/ethnicity and age, all covariates were measured by participants' responses at T2.

### *Analytic Sequence*

We first examined several sets of bivariate correlations to provide evidence for the utility of multivariate models to address our hypotheses. The modest size of the correlation between the dependent variables ( $r = -.18$ ), as well as the small size of the inter-correlations among the types of continuous voluntary group participation ( $.05 \leq r \leq .14$ ), indicated that these variables were not empirically redundant with each other. Furthermore, the correlations between a continuous measure of functional decline (ranging from 0 to 5) and the dichotomous variables indicating continuous participation in voluntary groups ranged in size from .02 to .11. The small size of these correlations suggests that the associations between the protective factor (i.e., continuous voluntary group participation) and the outcomes were not confounded with the association between the risk factor (i.e., developing functional limitations) and the outcomes. In additional preliminary analyses, we estimated models that included three-way interaction terms indicating the product among developing functional limitations, continuous participation in each type of voluntary group, and gender or age. None of the three-way interaction terms achieved statistical significance at a robust level ( $p \leq .05$ , two-tailed). Therefore, we subsequently analyzed data from men and women and respondents of all ages together.

We used the OLS method to estimate multivariate regression models to test our hypotheses. To provide evidence for the associations between the independent variables and

changes in participants' psychological well-being, the well-being outcomes at T2 (depressive symptoms and personal growth) were regressed on the control variables, as well as participants' scores on depressive symptoms at T1. (Because the NSFH did not elicit participants' reports of personal growth at T1, all models estimated for participants' personal growth included participants' depressive symptoms at T1 as a baseline control.) All analyses were conducted with both weighted and unweighted data. Because results did not differ greatly, results from analyses based on the unweighted data are reported because these analyses provide estimates with more reliable standard errors (Winship & Radbill, 1994).

To examine evidence for *H1*, which predicted poorer psychological well-being among participants who developed functional limitations, multivariate models were estimated by regressing the well-being outcomes on the dichotomous variable indicating whether or not participants had developed functional limitations between T1 and T2. To examine evidence for *H2*, which predicted better psychological well-being among participants who were continuously involved in voluntary groups, the block of three dichotomous variables indicating continuous participation in each of the voluntary groups was added to the previous set of models. To examine evidence for *H3*, which predicted that continuous participation in voluntary groups would moderate the associations between developing functional limitations and poorer psychological well-being, three interaction terms (i.e., the product between each type of continuous voluntary group participation and whether or not participants developed functional limitations between T1 and T2) were separately added to a model containing all main effect variables. We further examined interactions that achieved statistical significance ( $p \leq .05$ , two-tailed) by calculating and graphing predicted scores for groups of participants who differed on variables of substantive interest (e.g., whether or not they developed functional limitations and

whether or not they continuously participated in the given voluntary group under investigation). The baseline model for predicted scores included respondents at the mean level on continuous variables and in the zero categories for dichotomous variables.

## Results

### *Developing Functional Limitations and Psychological Well-Being*

*H1* predicted that participants who developed functional limitations over a five-year period would report poorer psychological well-being than participants who did not develop functional limitations. Results from models that evaluated this hypothesis (refer to Tables 2 and 3, Model 1) indicated that participants who developed functional limitations reported a greater increase in depressive symptoms ( $b = .58, p \leq .001$ ) and lower levels of personal growth ( $b = -.42, p \leq .001$ ) in contrast to participants who did not develop functional limitations. Pending interaction results with respect to *H3*, these analyses provided evidence in support of *H1*.

### *Continuous Participation in Voluntary Groups and Psychological Well-Being*

*H2* predicted that participants who continuously participated in voluntary groups would report better psychological well-being over time than participants who did not continuously participate in such groups. Findings from models that evaluated this hypothesis (refer to Tables 2 and 3, Model 2) demonstrated that continuous participation in voluntary groups was a consistent predictor of individuals' higher levels of personal growth. More personal growth was reported by respondents who continuously participated in recreational groups ( $b = .29, p \leq .001$ ), religious groups ( $b = .44, p \leq .001$ ), and/or civic groups ( $b = .48, p \leq .05$ ) than by respondents who did not continuously participate in these groups. Results regarding *H2* were less consistent in terms of participants' depressive symptoms. Continuous participation in religious groups was associated with a greater decline in depressive symptoms over time ( $b = -.09, p \leq .05$ ); however, continuous

participation in recreational and/or civic groups was not associated with differences in depressive symptoms. In sum, these analyses provided partial support for *H2*.

*Continuous Participation in Voluntary Groups as a Protective Factor*

*H3* predicted that participants who developed functional limitations and who continuously participated in voluntary groups would report better psychological well-being than participants who also developed functional limitations, but who did not continuously participate in voluntary groups. Out of the six models estimated with two-way interaction terms to evaluate evidence for this hypothesis (refer to Tables 2 and 3, Models 3, 4, and 5), interaction terms in two of these models achieved statistical significance at a robust level ( $p \leq .05$ , two-tailed). The interaction term between developing functional limitations and continuous participation in recreational groups achieved statistical significance in terms of participants' depressive symptoms (Table 2, Model 3,  $b = -.21$ ,  $p \leq .05$ ), and the interaction term between developing functional limitations and continuous participation in religious groups achieved statistical significance in terms of participants' personal growth (Table 3, Model 4,  $b = .55$ ,  $p \leq .05$ ).

To interpret these statistically significant interaction terms, predicted scores for psychological well-being were computed across groups of participants who differed by whether or not they developed functional limitations and by whether or not they continuously participated in the voluntary group of interest. As Figure 2 displays, for participants who did not continuously participate in recreational groups, developing functional limitations increased their predicted level of depressive symptoms by one-half of a standard deviation. However, for participants who reported continuous participation in these groups, developing functional limitations was associated with a 34% lesser increase in depressive symptoms over the five-year period. These

results indicate that continuous participation in recreational groups ameliorated the problematic association between functional limitations and depressive symptoms.

Figure 3 demonstrates the interactive relationship between developing functional limitations and continuous participation in religious groups on respondents' feelings of personal growth. For participants who did not continuously participate in religious groups, developing functional limitations predicted levels of personal growth 20% below that of participants who did not develop functional limitation. However, among participants who reported continuous participation in religious groups, developing functional limitations was not associated with lower levels of personal growth.

In sum, these results indicate that continuous participation in religious groups protected participants from lower levels of personal growth associated with developing functional limitations and that continuous participation in recreational groups protected participants from greater increases in depressive symptoms associated with developing functional limitations. As a whole, these findings provided some evidence in support of *H3*.

### Discussion

The primary aim of this study was to investigate continuous participation in voluntary groups as a protective factor against the negative psychological consequences of developing functional limitations. Results from the current study are congruent with those of previous studies, which suggest that developing functional limitations is associated with individuals' poorer psychological well-being over time (Kunzmann, Little, and Smith, 2000; Taylor & Lynch, 2004). Findings also suggest, however, that deleterious changes in psychological well-being associated with developing functional limitations are not uniform across all adults who experience such limitations. Increases in depressive symptoms associated with functional

limitations were less severe among individuals who continuously participated in recreational groups, and developing functional limitations was not associated with lower levels of personal growth among participants who continuously participated in religious groups.

Although results provide at least some evidence in support of the beneficial effects of continuous voluntary group participation on adults' psychological well-being, it is important to note that not all types of voluntary group participation demonstrated independent and/or interactive effects on both of the psychological well-being outcomes examined (i.e., depressive symptoms and personal growth). For example, although continuous participation in civic groups exerted an independent effect on participants' higher levels of personal growth, this type of continuous voluntary participation was not associated with participants' depressive symptoms, nor did it buffer individuals against experiencing poorer psychological well-being associated with developing functional limitations. Such complex patterns of significant and non-significant associations suggest that the ways and degrees to which particular types of continuous voluntary group participation affect certain aspects of mental health are likely variable. Additional empirical and theory-based work is necessary to better understand the substantive significance of such patterns.

Insights from continuity theory support the interpretation that continuous participation in voluntary groups protects midlife and older adults' psychological well-being. Continuity theory suggests that behavioral and mental strategies—such as continuing participation in formal voluntary groups—can help individuals to achieve a consistent sense of self and their social worlds, which would contribute to their greater well-being when faced with significant life change (Atchley, 1989). It is possible, however, that alternative processes can account for the statistically significant interactions found in this study. Although this study draws on the

methodological strengths of a longitudinal, prospective design, statements regarding the causal nature of the associations among variables remain somewhat tenuous. It is possible that participants' maintenance of higher levels of psychological well-being in the face of declining functional health caused them to remain involved in voluntary groups, rather than their continuous participation helping them to maintain their psychological well-being.

Other features of this study limit full interpretation of its results. For example, even though the measures of voluntary group participation were differentiated into three different types (recreational, religious, and civic), diverse forms of voluntary groups are still collapsed under each of these types, which might mask the implications of different types of voluntary group participation. For example, the "civic" category of participation includes participation in service clubs, fraternal clubs, and political groups. It is possible that each of these groups affects adults' psychological well-being in different ways and/or to different degrees.

Despite these limitations, this study's findings contribute to understanding the psychosocial implications of functional limitations and factors comprising processes of risk and resilience in adulthood. In short, results indicate that although declining functional health is a potent risk factor for midlife and older adults' poorer psychological well-being, certain types of continuous voluntary group participation can moderate this risk. While results from previous studies have indicated that various types of voluntary group participation can promote individual well-being within the adult U.S. population at large (Jun, 2002; Menec, 2003; Morrow-Howell et al., 2003), findings from the current study demonstrate that voluntary group participation might also promote adults' psychological well-being by buffering them against the harmful effects of developing functional limitations. Furthermore, results suggest the advantages of voluntary group participation that is specifically continuous by nature (i.e., that extends across years of an

individual's adulthood). These findings support the importance of efforts not only to engage adults' initial participation in voluntary groups, but also to help them to maintain their participation. Future research on the precise mechanisms through which voluntary group participation promotes particular aspects of psychological well-being, as well as on identifying factors that facilitate adults' on-going voluntary group participation, holds the promise of contributing to building a better understanding of how psychological well-being can be maintained across adulthood—particularly in the face of aging-related challenges.

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Table 1

*Descriptives for Analytic Variables*

Variable	Mean	(s.d.)	Range
<i>Control Variables</i>			
Depressive symptoms T1	1.96	(1.17)	0 - 4.44
Race/ethnicity T1 <sup>a</sup>			
White	.78	(.42)	0 - 1
Black	.16	(.37)	0 - 1
Mexican American	.04	(.20)	0 - 1
Other	.02	(.15)	0 - 1
Years of education T2 <sup>a</sup>			
< 12 years	.21	(.42)	0 - 1
12 years	.36	(.48)	0 - 1
13 - 15 years	.20	(.40)	0 - 1
16+ years	.22	(.41)	0 - 1
Employed T2 <sup>a</sup>	.60	(.49)	0 - 1
Household income T2	44,344.37	(41,693.65)	0 - 700,200.00
Child under the age of 19 in the household T2 <sup>a</sup>	.29	(.45)	0 - 1
Female T2 <sup>a</sup>	.61	(.49)	0 - 1
Married T2 <sup>a</sup>	.58	(.49)	0 - 1
Age T1	50.36	(12.65)	35 - 92
Developed functional limitations	.27	(.44)	0 - 1
<i>Continuous Participation in Voluntary Groups</i>			
Recreational <sup>a</sup>	.24	(.43)	0 - 1
Religious <sup>a</sup>	.15	(.36)	0 - 1
Civic <sup>a</sup>	.02	(.15)	0 - 1
<i>Well-Being Outcomes</i>			
Depressive symptoms T2	1.95	(1.20)	0 - 4.44
Personal growth T2	14.75	(2.52)	3 - 18

Source: National Survey of Families and Households (NSFH) 1987-1993, participants at least 35 years of age and without functional limitations at T1 (N = 4,872).

<sup>a</sup> Categorical variables are reported as proportions.

Note: Analyses used unweighted data.

Table 2

*Estimated Unstandardized Regression Coefficients for the Effects of Developing Functional Limitations and Continuous Voluntary Group Participation over a Five-Year Period on Midlife and Older Adults' Depressive Symptoms*

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Depressive symptoms T1	.32***	.32***	.32***	.32***	.32***
Race/ethnicity T1 <sup>a</sup>					
Black	-.03	-.02	-.02	-.02	-.02
Mexican American	-.00	-.02	.00	.00	.00
Other	.07	.07	.07	.07	.07
Years of education T2 <sup>b</sup>					
< 12 years	.13**	.12*	.12*	.12*	.12*
13 - 15 years	.06	.06	.06	.06	.06
16+ years	-.03	-.02	-.02	-.02	-.02
Employed T2	-.07	-.07	-.07	-.07	-.07
Household income T2	-.00	-.00	-.00	-.00	-.00
Child under the age of 19 in the household T2	.03	.03	.03	.03	.03
Female T2	.15***	.16***	.16***	.16***	.16***
Married T2	-.10**	-.09*	-.01***	-.09*	-.09**
Age T1	-.01***	-.01***	-.01***	-.01***	-.01***
Developed functional limitations (FL) between T1 and T2	.58***	.58***	.62***	.58***	.57***
<i>Continuous Participation in:</i>					
Recreational groups		.03	.07	.03	.03
Religious groups		-.09*	-.09*	-.09	-.09*
Civic groups		-.14	-.14	-.14	-.19
<i>Interactions:</i>					
Recreational groups X FL			-.21*	--	--
Religious groups X FL			--	-.03	--
Civic groups X FL			--	--	.27
Constant	1.82***	1.79***	1.80***	1.79***	1.80***
Valid N	3876	3876	3876	3876	3876
R <sup>2</sup>	.21	.22	.22	.22	.22

Source: National Survey of Families and Households (NSFH) 1987-1993, participants at least 35 years of age and without functional limitations at T1.

+  $p \leq .10$ , \*  $p \leq .05$ , \*\*  $p \leq .01$ , \*\*\*  $p \leq .001$  (two tailed).

Note: Analyses used unweighted data.

<sup>a</sup> Omitted category is non-Hispanic white.

<sup>b</sup> Omitted category is 12 years.

Table 3

*Estimated Unstandardized Regression Coefficients for the Effects of Developing Functional Limitations and Continuous Voluntary Group Participation over a Five-Year Period on Midlife and Older Adults' Personal Growth*

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Depressive symptoms T1	-.27***	-.27***	-.27***	-.27***	-.27***
Race/ethnicity T1 <sup>a</sup>					
Black	.37***	.35***	.36***	.36***	.36***
Mexican American	-.11	-.09	-.09	-.10	-.08
Other	-.02	.02	.02	.02	.01
Years of education T2 <sup>b</sup>					
< 12 years	-.44***	-.37***	-.36**	-.35***	-.36***
13 - 15 years	.62***	.59***	.59***	.59***	.59***
16+ years	.94***	.88***	.89***	.88***	.89***
Employed T2	.39***	.33***	.33***	.33***	.33***
Household income T2	-.00**	.00**	.00**	.00**	.00**
Child under the age of 19 in the household T2	-.13	-.14	-.14	-.14	-.14
Female T1	.50***	.47***	.47***	.47***	.47***
Married T2	-.17*	-.19*	-.19*	-.19*	-.19*
Age T1	-.02***	-.02***	-.02***	-.02***	-.02***
Developed functional limitations (FL) between T1 and T2	-.42***	-.40***	-.46***	-.48***	-.42***
<i>Continuous Participation in:</i>					
Recreational groups		.29***	.22*	.29***	.29***
Religious groups		.44***	.44***	.30**	.44***
Civic groups		.48*	.48*	.49*	.27
<i>Interactions:</i>					
Recreational groups X FL			.33	--	--
Religious groups X FL			--	.55*	--
Civic groups X FL			--	--	1.18+
Constant	15.64***	15.60***	15.56***	15.62***	15.60***
Valid N	3986	3986	3986	3986	3986
R <sup>2</sup>	.12	.13	.13	.13	.13

Source: National Survey of Families and Households (NSFH) 1987-1993, participants at least 35 years of age and without functional limitations at T1.

+  $p \leq .10$ , \*  $p \leq .05$ , \*\*  $p \leq .01$ , \*\*\*  $p \leq .001$  (two tailed).

Note: Analyses used unweighted data.

<sup>a</sup> Omitted category is non-Hispanic white.

<sup>b</sup> Omitted category is 12 years.

Figure 1. Conceptual model for the risk-buffering effect of continuous participation in voluntary groups over a five-year period on adults' psychological well-being

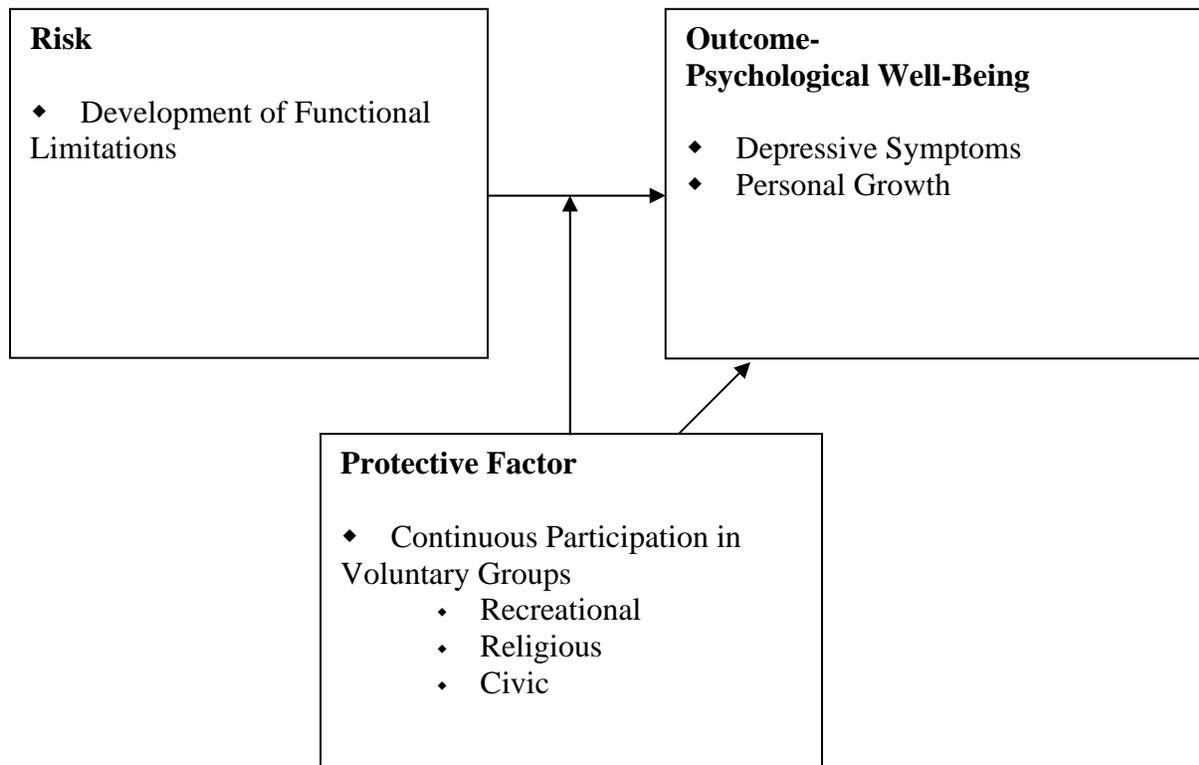


Figure 2. Predicted scores of depressive symptoms for midlife and older adults who differ as to whether or not they continuously participated in recreational groups and whether or not they developed functional limitations over a five-year period

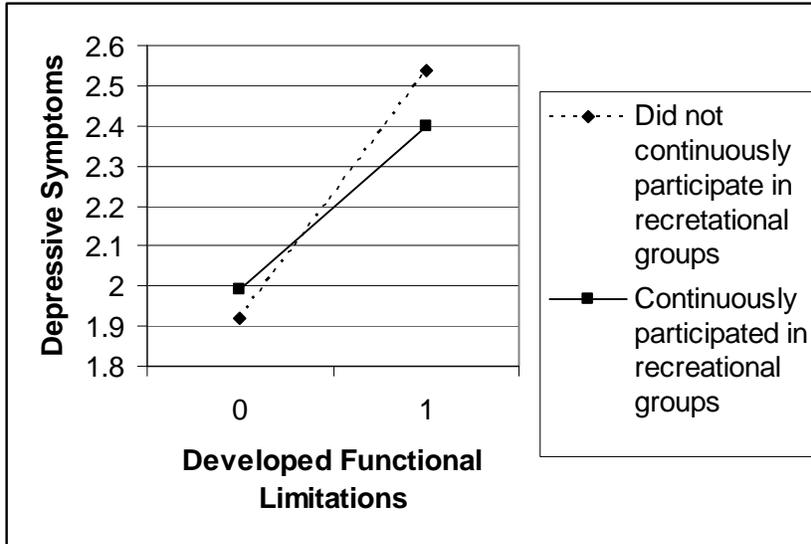
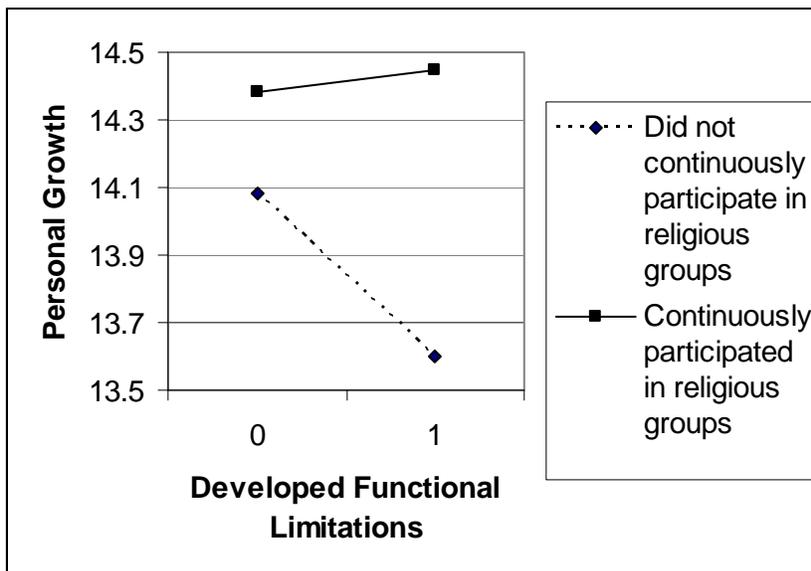


Figure 3. Predicted scores of personal growth for midlife and older adults who differ as to whether or not they continuously participated in religious groups and whether or not they developed functional limitations over a five-year period



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