Gender, Retirement Status and Health among Older Workers

Nancy L. Marshall, Allison Tracy, Marguerite Dresser and Anne Noonan
Wellesley Centers for Women, Wellesley College

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There are over 14 million older workers, age 55 and older, in the United States (Commonwealth Fund, 1993). The number and proportion of older workers in the workforce is growing as the "baby-boom" generation ages (Salthouse & Maurer, 1996; Farr, Tesluk, & Klein, 1998). Many of today's aging baby boomers will remain in the labor force longer than members of recent cohorts. This is due to a variety of individual and societal factors such as increased longevity, financial concerns, societal concerns about the economic costs of early retirement, a shortage of younger workers, and the beginning of disincentives towards early retirement in public and private retirement plans (Schooler, Caplan, & Oates, 1998). Even when workers retire, retirement does not always signal the end of employment. Various studies (Beck, 1986) suggest that approximately one-third of older workers become re-employed post-retirement -- this is especially likely among workers with a college degree and among women who have been intermittently employed prior to 'retirement' (Han & Moen, 1998). All of these factors combine to create labor force participation rates among older workers that are dramatically different from those of 30 years ago.

This increase in older workers has created a pressing need for a better understanding of older workers, the characteristics of their employment, and the nature and magnitudes of the health risks they face. Knowledge gained can help inform policies and practices designed to improve working conditions, productivity and well-being among older workers.

BACKGROUND

Health, and the related ability to work, declines as individuals age. While some research has found that deteriorating health is associated with stopping work (Ruchlin & Morris, 1992), most research indicates that only a small proportion of older workers leave the workforce for health reasons (Ruhm, 1989). Sterns and Sterns (1995) argue that the research to date suggests that most older adults are physically and mentally able to continue employment in later years. Research with NHIS data from 1993 indicates that older workers' ability to work has improved (compared to 1982), across all educational subgroups of the population (Crimmins, Reynolds & Saito 1999).

In fact, some have argued that employment helps to maintain functioning among older adults. Various studies show that employment, per se, is positively associated with health, and that this relation holds for older workers (c.f., Ross & Mirowsky, 1995, for a review). Some have argued that any observed links between employment and health are spurious; workers in poor health are likely to leave the workforce, or to have never entered it, and associations between employment and health are artifacts of this -- a result of the selection of healthy workers into the workforce. Waldron and colleagues (Waldron, Herold, Dunn, & Staum 1982) argued that most of the cross-sectional association between health and employment for women is a result of such self-selection, particularly for women who were married, white-collar or white.

To address this critique, Ross and Mirowsky (1995) used two waves of data from a national probability sample, collected in 1979-1980, to estimate both the effects of health on employment and the effects of employment on health, for separate samples of women and men ages 20-64. They found that full-time employment predicted a slower decline in health over time for both genders and for whites and non-whites, married and non-married; part-time employment was unrelated to health. At the same time, physical functioning increased the odds of getting or keeping a full-time job for both women and men. While acknowledging the role of selection, Ross & Mirowsky argue that their analyses support the conclusion that “Full-time employment keeps healthy workers healthy” (page 241). In a longitudinal study of women ages 25-65 in 1968 (PSID data), Wolfe and Haveman (1983) found that working more hours over the seven year period of the study was associated with improved health over that same time period. However, in a longitudinal study of men ages 21-65 in 1976 (PSID data), Haveman and colleagues (Haveman, Wolfe, Kreider & Stone, 1994) found no significant relationship between prior hours of work and health limitations.

With an understanding of the relation between health and employment status as background, this paper focuses on the role of working conditions – specifically, substantive complexity – in the health of older workers. Substantively complex work is defined as that which involves complex work with data (e.g., analyzing, coordinating or synthesizing) or with people (e.g., supervising, instructing, negotiating or mentoring), and work that, in general, requires complex problem-solving with multiple variables and/or unpredictable outcomes.

Arguably, substantively complex jobs may help to maintain intellectual functioning. Several studies have addressed the role of substantive complexity in maintaining healthy functioning among older adults. In their 1999 extension of a longitudinal study of employed men and women begun in 1964 (Kohn & Schooler, 1983), Schooler and colleagues (Schooler, Mulatu & Oates, 1999) found evidence of reciprocal effects of substantive complexity and intellectual functioning, which were particularly strong among older workers. In addition, jobs that are lower in substantive complexity may be associated with greater risk for declining physical health. Hayward and colleagues (Hayward, Grady, Hardy & Sommers, 1989) found that older adults with jobs that were substantively complex were less likely to leave the workforce due to disability. The proposed study builds on these studies to examine the reciprocal effects of health and substantive complexity, in the context of current levels of health and functioning among older Americans, and of the changing economy in the 1990’s.

Gender and Retirement Status

This paper also links the fields of gender studies and life-span research to the study of older workers. Previous research in these fields, such as the work by Moen and her colleagues (c.f., Han & Moen, 1998), has identified the different career patterns of women and men in their later years. These career pattern or employment history differences may be reflected in different associations between employment and health for men and women. Similarly, research on the transition to retirement suggests that individual’s expectations of life, the level and means of social integration, as well as resources and health risks, are different for pre-retirement and post-retirement adults. It is reasonable to expect that these life stage differences may also be reflected in different models of the relation between work and health for pre- and post-retirement workers.

Research Questions

In this paper we address three research questions: [1] what is the association between substantive complexity and changes in health among older workers; [2] are there reciprocal effects over time; and [3] are the associations between substantive complexity and health different by gender or retirement status?

METHODS

Overview

We examined these research questions using data from the Health and Retirement Study (HRS). The HRS is a multi-wave, national longitudinal study of the antecedents and consequences of health, retirement and economic status of older Americans, supported by the National Institute on Aging, and initiated in 1992.1 HRS's baseline sample was drawn using a multi-stage, clustered area probability frame. It included people born between 1931 and 1941 who were household residents of the conterminous United States in the spring of 1992, and their spouses or partners at the time of the initial 1992 interview, regardless of age. The HRS oversampled (100%) Hispanics, Blacks and Florida residents. At baseline, 15,497 individuals were eligible for interviews; 12,654 (81.7%) were interviewed, representing 7,705 households, composed of: 2,064 Blacks, 1,174 Hispanics, and 9,416 whites and others. Of the baseline HRS sample, 6,781 were women and 5,866 were men; 10,281 were married and 2,373 were not. The HRS conducted in- home, face-to face interviews in 1992 for the 1931-41 birth cohort respondents, and their spouses or partners. Telephone follow-up interviews were conducted every 2 years.

The present analysis examines the sub-sample of 2,983 individuals who were between the ages of 50 and 70 in 1996, were employed in both 1996 and 1998, and had complete data on the variables of interest.2 Fifty-four percent of the analysis sample's respondents were women (N=1608) and 46% were men (N=1375). Eighty one percent of the sample described themselves as white, 15% as African American, 7% as Hispanic, and 4% as some other ethnicity; responses were not mutually exclusive. In 1996, 69% were married, 3% had partners, and 28% were divorced, separated, widowed or never married.

Health Measures

We included three health variables: physical limitations, memory, and working memory. Each construct and its component measure(s) are described below.

Physical limitations. The physical limitations construct was measured by respondents' self-report of Activities of Daily Living (ADL). To assess ADLs, respondents were asked: "Please tell me whether you have any difficulty doing each of the everyday activities I read to you. Exclude any difficulties that you expect to last < 3 months." Respondents were then asked: "Because of a health problem do you have any difficulty with: Walking several blocks; Walking 1 block; Sitting 2 hrs; Getting up from a chair after sitting for long periods; Climbing one flight of stairs without resting; Stooping, kneeling, crouching; Reaching or extending your arms above shoulder level; Pulling or pushing large objects like a living room chair; Lifting or carrying weights over 10 lbs., like heavy groceries; Picking up a dime from a table." Responses for each item were collapsed to 1=Yes; 0=No for our analyses; the score for physical limitations was the sum of the activities that were reported as limited.

Memory. Memory is an important component of cognitive processing (Ofstedal, McAuley & Herzog, 2002). In this paper (following Ofstedal et al, 2002), memory was modeled as a latent construct consisting of two variables, Immediate Word Recall and Delayed Word Recall. To measure Immediate Word Recall, respondents were prompted with: "I'll read a set of 10 words

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1 Detailed information about HRS is available at http://hrsonline.isr.umich.edu/.

2 Only 44 age- and employment-eligible respondents were missing any data, or 1.5% of the eligible respondents.

and ask you to recall as many as you can. We have purposely made the list long so that it will be difficult for anyone to recall all the words—most people recall just a few. Please listen carefully as I read the set of words because I cannot repeat them. When I finish, I will ask you to recall aloud as many of the words as you can, in any order. Is this clear? Now please tell me the words you can recall." The interviewer was allowed to permit as much time as R wished -- up to 2 minutes. The number of words the respondent correctly recalled in 15 tries was the Immediate Word Recall score. To measure Delayed Word Recall, respondents were prompted with: "A little while ago, I read you a list of words and you repeated the ones you could remember. Please tell me any of the words that you remember now." The interviewer was allowed to permit as much time as R wished -- up to 2 minutes. The number of words the respondent correctly recalled in 15 tries was the Delayed Word Recall score.

Working memory. Working memory is the ability to process information and store it simultaneously (Craik, 1999). The working memory construct was measured using the Serial 7 Task. Respondents were asked to repeatedly subtract 7, starting at 100. We calculated the number of subtractions of 7 done correctly, and this number was the score on the Serial 7 Task.

Occupational Substantive Complexity

Our measure of substantive complexity is based on the work of Roos and Treiman (1980), Kohn and Schooler (1983) and Parcel and Menaghan (1994). Roos and Treiman (1980) developed a measure of substantive complexity, based on factor weights of Dictionary of Occupational Titles (DOT) worker trait and worker function characteristics, for a broad range of occupations listed in the 1970 U.S. Census occupation codes. The HRS dataset includes the 1980 U.S. Census 2-digit occupational code for each respondent's current occupation at each wave, (e.g., Managerial Specialty Operations, Precision Production, etc.); we coded these occupations for substantive complexity using the scores developed by Roos and Treiman (1980). More detail on our application of these substantive complexity codes to the HRS data is available from the authors.

Hours Worked

Number of hours worked in 1996 and again in 1998 was measured continuously.

Control Variables

We controlled for chronological age and for health-risk behaviors, including: having ever smoked cigarettes (defined as currently a smoker or having smoked 100 cigarettes or more over the life course); frequency of drinking alcohol in the last three months; whether or not the respondent had participated in vigorous physical activity or exercise in the past 12 months (yes/no) and Body Mass Index. Body Mass Index was calculated using the algorithm: (Weight x 703)/ (Height in inches). BMI values higher than 55.0 were truncated to 55.

Grouping Variables

We compared the relationship between health and substantive complexity for respondents with differing retirement statuses and of different genders. Respondents were considered retired if they met either one or both of the following conditions: [1] they responded that they were retired when asked: "Now, I'm going to ask you some questions about your current employment. Are you working now, temporarily laid off, unemployed and looking for work, disabled and unable to work, retired, a homemaker, or what?" or [2] they reported that they were receiving income from retirement pensions or social security (following the operationalizations of retirement used by Elder & Pavalko,1993 and Quick & Moen, 1998).

ANALYSES

Descriptive Analyses

Table 1 presents the frequencies of the employment and health variables for the analytic sample, separately by gender and by retirement status. In this sample, as might be expected from national data, women are more likely than men to occupy jobs of lower substantive complexity. Women are slightly more likely than men to be employed part-time – 19% compared to 11%, and men are more likely than women to work 50 or more hours per week – 31% compared to 14%. However, it should be noted that, even in this cohort of women and men born between 1931 and 1941, 81% of employed women between the ages of 50 and 70 are employed full-time.[3]

When we examine the health variables, we find that women and men rate themselves similarly, with one-quarter in excellent health in 1996. However, consistent with national data on the greater morbidity among women, women are more likely than men to report one or more health-related limitations of daily activities. It appears that women's health self-rating is made relative to other women, rather than to men. We also see from Table 1 that the women in the sample scored higher on the word-recall memory tests, while men scored slightly higher on the working memory Serial 7 Task that asks respondents to count backwards by 7 from 100.

We also compared retired and not-yet-retired respondents. As Table 1 shows, both retired and not-retired older workers hold jobs of similar levels of substantive complexity, with not-yet-retired workers more likely to hold the most substantively complex jobs. Retired workers are much more likely than those not-yet-retired to work part-time – 29% compared to 9%. However, we find few differences in the health measures between retired and not-retired workers.

Insert Table 1 about here

Structural Equation Models

We fit models of the effects of substantive complexity on health for the full sample and separately for gender subgroups and for retired vs. not retired older workers in a structural equations approach. The models described so far imply that the relationships between substantive complexity and health are due to the causal effect of substantive complexity on health. However, in order to establish adequate evidence of causation, we need to rule out a number of alternative hypotheses. For instance, the reverse causal explanation, that health affects subsequent substantive complexity, is a reasonable alternative hypothesis. We explored this alternative hypothesis within these models. With data from two points in time (T1 and T2), we were able to simultaneously test the lagged and concurrent reciprocal effects of substantive complexity on health. The model we used is shown in Figure 1.

3 We define full-time employment as 30 hours or more per week. The number of hours per week that is considered full-time varies by occupation and industry – for teachers, 30 hours a week is considered full-time, while for factory workers, 40 hours per week is considered full-time.

Insert Figure 1 about here

In Figure 1, the lagged reciprocal effects are represented by $\beta_{4,1}$ and $\beta_{3,2}$. This model has several important features. Through modeling the effect of the initial level of a variable on the subsequent level, initial differences among subjects on that variable were controlled. For instance, regressing health at Time 2 on health at Time 1 as well as substantive complexity at Time 1 allowed us to interpret the regression weight associated with substantive complexity as the effect of Time 1 work on the change in health over time, despite initial differences in health status. Similarly, the inclusion of health at Time 1 and work at Time 1 as predictors of work at Time 2 allowed us to examine the effect of initial health status on the improvement or decline in substantive complexity between the two waves, despite differences in initial work conditions.

Substantive Complexity and Health

We first examined the relation between substantive complexity and change in health, among older workers, for the full sample; the control variables are not shown but were included in the analysis.

Table 2 presents the standardized regression coefficients for the relationships of interest for the model for substantive complexity. First, we note that older workers in more substantively complex jobs reported reduced rates of decline in physical health, memory functioning and working memory (see Figure 2 as an illustration of this relationship). In addition, we found that there was no reciprocal relationship between health in 1996 and change over time in substantive complexity. These results indicate that the relationship between substantive complexity and health among older workers is a function of the effect of substantive complexity on health, rather than a function of the effect of health on substantive complexity.

Insert Table 2, Figure 2 about here

Retirement Status, Gender, Substantive Complexity and Health

We tested the above structural equation models for group differences by gender and by retirement status. Table 3 summarizes the coefficients for the tests of differences between retired workers – those who are both retired and still employed -- and older workers who have not yet retired.

Insert Table 3 about here

While the general pattern of relationships in Table 3 is similar to that in Table 2, we note two important differences. First, the models for retired workers and not retired workers are significantly different in the relation between 1996 substantive complexity and change in memory scores. Specifically, the relation between substantive complexity and change in memory scores only occurs among older workers who are not yet retired; among retired workers the relationship is not significant.

Second, we note that there is a reciprocal relation between physical limitations and substantive complexity. Not retired older workers in more substantively complex jobs in 1996 are less likely to report increased physical limitations in 1998; however, not retired older workers with greater physical limitations in 1996 are likely to report a change in occupations to ones of reduced substantive complexity by 1998. Among these workers who have not yet retired, causation appears to be reciprocal, with physical limitations leading to adjustments in work, and substantive complexity being predictive of physical health.

Gender. We also examined the structural equation model in Table 2 for gender differences. Table 4 reports the results of those analyses. We found no gender differences in the relationships of interest. However, we did find that there is a significant reciprocal relationship for men between memory and substantive complexity, such that men with poorer memory scores in 1996 are more likely to move to less substantively complex occupations by 1998. It is important to note that the relationship between substantive complexity in 1996 and change in memory is much stronger than the relationship between memory in 1996 and change over time in substantive complexity.

Insert Table 4 about here

DISCUSSION

We set out to explore the links between substantive complexity and health in a sample of almost 3,000 older workers. We found that this cohort of older workers continues to be heavily involved in the labor market, with the vast majority 80% employed 30 or more hours per week in 1996, when they were between 50 and 70 years old. Overall, these older workers are in good or excellent health, with only 9% rating their health as fair or poor. Yet over half of the women and over a third of the men reported some health-related limitations to their activities of daily living.

About a third of this sample of employed older adults was classified as retired, on the basis of their own self-definition or the receipt of pension income. We found few health differences between retired older workers and those who were not retired. However, retired older workers were more likely to be employed part-time than were those who were not retired.

In our structural equation models, we found interesting associations between substantive complexity and health. As expected, respondents with more substantively complex occupations also reported more positive changes over time in their health on all measures. Given that occupations that are substantively complex are those that require complex problem-solving and critical thinking, these findings suggest that such occupations help to maintain memory and working memory. Interestingly, older workers in more substantively complex occupations also show slower declines in activities of daily living. It is possible that this relationship may be mediated by cognitive functioning, such that substantive complexity protects cognitive functioning which is associated with ADLs. However, given that the ADL measure used here consists primarily of gross motor items, such as walking, kneeling and reaching, and these activities are less strongly associated with levels of cognitive functioning (Ofstedal et al, 2002); it is equally plausible that some third variable not included in the model explains this association, such as social class.

We also examined the role of gender in these models of substantive complexity and health in this cohort of women and men born between 1931 and 1941, who reached adulthood in the 1950's. However, we found that 80% of employed women in this cohort were employed full-time, compared to 90% of employed men. We also did not find gender differences in the relation between levels of substantive complexity and changes in health. Among older workers in this cohort, both men and women benefit from substantively complex occupations.

However, we did find differences in the models for older workers who were retired compared to those who were not. We found that, among not retired workers, greater substantive complexity is associated with relatively less decline in memory; substantive complexity appears to have little if any effect on memory among retired workers. However, substantively complex work of both retired workers and not retired workers was significantly associated with more positive changes over time in working memory and ADL scores.

We also tested for reciprocal effects between substantive complexity and health. We found no significant relations between health in 1996 and change over time in substantive complexity in the main models, and only two significant out of 12 tested relationships in the group analyses (one for not retired workers and one for men), lending support for the thesis that the relationship between substantive complexity and health is largely in the direction of substantive complexity contributing to changes in health, rather than the reverse.

Overall, this study demonstrates the importance of longitudinal tests of the associations between working conditions and health, and of tests of reciprocity of effects. This study also contributes to our understanding of the characteristics of jobs that are particularly important to maintaining health and functioning among older workers.

REFERENCES

Beck, S.H. 1986. Mobility from Preretirement to Postretirement Job. The Sociological Quarterly, 27 (4), 515-531.

Commonwealth Fund 1993. The Untapped Resource: The Final Report of the Americans Over 55 at Work Program. New York, NY: The Fund.

Craik, F.I.M. 1999. Memory, aging, and survey measurement. In N. Schwarz, D.C. Park, B. Knauper, & S. Sudman (Eds.), Cognition, aging, and self-reports. Philadelphia: Psychology Press.

Crimmins, E.M., Reynolds, S.L. & Saito, Y. 1999. Trends in Health and Ability to Work Among Older Working-Age Population. Journal of Gerontology, 54, S31-S40.

Elder, G.H. Jr & Pavalko, E.K. (1993). Work careers in men's later years: Transitions, trajectories and historical change. Journal of Gerontology: Social Sciences 48(4), S180-S191.

Farr, J.L., Tesluk, P.E., & Klein, S.R. 1998. Organizational Structure of the Workplace and the Older Worker. In K.W. Schaie and C. Schooler (Eds.), Impact of work on older workers (pp. 143-85). New York: Springer Publishing Co.

Han, S. & Moen, P. 1998. Clocking Out: Multiplex Time in Retirement. Cornell Employment and Family Careers Institute, BLCC Working Paper #98-03. Ithaca, NY: Cornell University.

Haveman, R., Wolfe, B., Kreider, B., & Stone, M. 1994. Market Work, Wages, and Men's Health. Journal of Health Economics, 13, 163-182.

Hayward, M.D., Grady, W.R., Hardy, M.A., & Sommers, D. 1989. Occupational Influences on Retirement, Disability, and Death. Demography, 26 (3), 393-409.

Kohn, M.L. & Schooler, C. 1978. The Reciprocal Effects of the Substantive Complexity of Work and Intellectual Flexibility: A Longitudinal Assessment. American Journal of Sociology, 84(1): 24-52.

Kohn, M.L. & Schooler, C. (with Miller, J., Miller, K., Schoenbach, C., & Schoenberg, R). 1983. Work and Personality: An Inquiry Into the Impact of Social Stratification. Norwood, NJ: Ablex.

Ofstedal, M., McAuley, G.F. & Herzog, A.R. 2002. HRS/AHEAD Documentation Report: Documentation of Cognitive Functioning Measures in the Health and Retirement Study. Last Updated August 26, 2002. http://hrsonline.isr.umich.edu/docs/userg/dr-006.pdf Accessed August 11, 2003.

Parcel, T.L. and Menaghan, E.G. 1994. Parents' jobs and children's lives. New York: Aldine de Gruyter.

Quick, H. E. & Moen, P. 1998. Gender, Employment, and Retirement Quality: A Life Course Approach to the Differential Experiences of Men and Women. Journal of Occupational Health Psychology. 3(1):44-64.

Roos, P.A. and Treiman, D.J. 1980. DOT Scales for the 1970 Census Classification. In A.R. Miller, D.J. Treiman, P.S. Cain, P.A. Roos (Editors). Work, Jobs, and Occupations: A Critical Review of the Dictionary of Occupational Titles (pp. 336-389). National Academy Press, Washington, D.C. 1980.

Ross, C.E., & Mirowsky, J. 1995. Does Employment Affect Health? Journal of Health and Social Behavior. 36(3), 230-243.

Ruchlin, H.S. & Morris, J.N. 1992. Deteriorating Health And The Cessation Of Employment Among Older Workers. Journal of Aging and Health, 4, 43-57.

Ruhm, C.J. 1989. Why Older Americans Stop Working. Gerontologist, 29, 294-299.

Salthouse, T.A. & Maurer, T.J. 1996. Aging, Job Performance, and Career Development. In J.E. Birren & K.W. Schaie (Eds.) Handbook of the Psychology of Aging. San Diego: Academic Press.

Schooler, C., Caplan, L., & Oates, G. 1998. Aging and Work: an Overview. In K.W. Schaie & C. Schooler (Eds.) Impact of Work on Older Adults (pp. 1-19). New York: Springer.

Schooler, C., Mulatu, M.S. & Oates, G. 1999. The Continuing Effects of Substantively Complex Work on

the Intellectual Functioning of Older Workers. Psychology and Aging, 14, 483-506.
Sterns, H.L. & Sterns, A. A. 1995. Health and the Employment Capability of Older Americans. In S.A. Bass (Ed.) Older and Active: How Americans Over 55 are Contributing to Society. New Haven, CT: Yale University Press.
Waldron, I., Herold, J., Dunn, D., & Staum, R. 1982. Reciprocal Effects of Health and Labor Force Participation Among Women: Evidence from Two Longitudinal Studies. Journal of Occupational Medicine, 24, 126-32.
Wolfe, B., & Haveman, R. 1983. Time Allocation, Market Work, and Changes in Female Health. Women and Health, 73(2), 134-139.

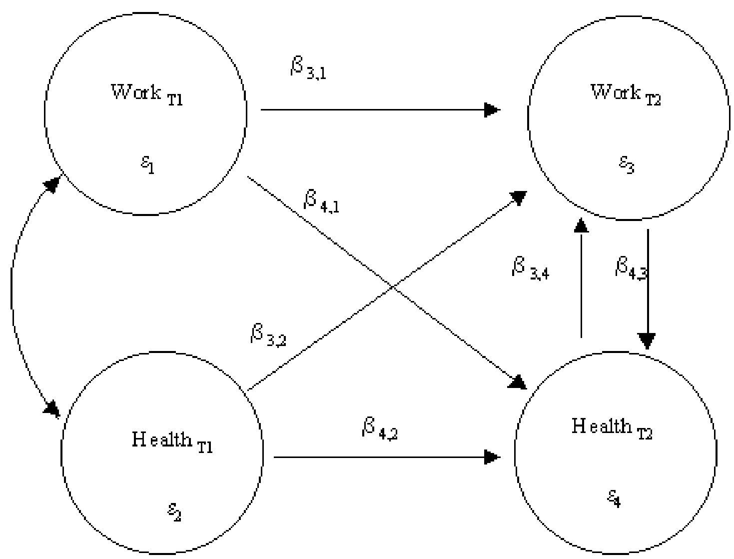

Figure 1. Model of lagged and concurrent reciprocal effects of working conditions on health.

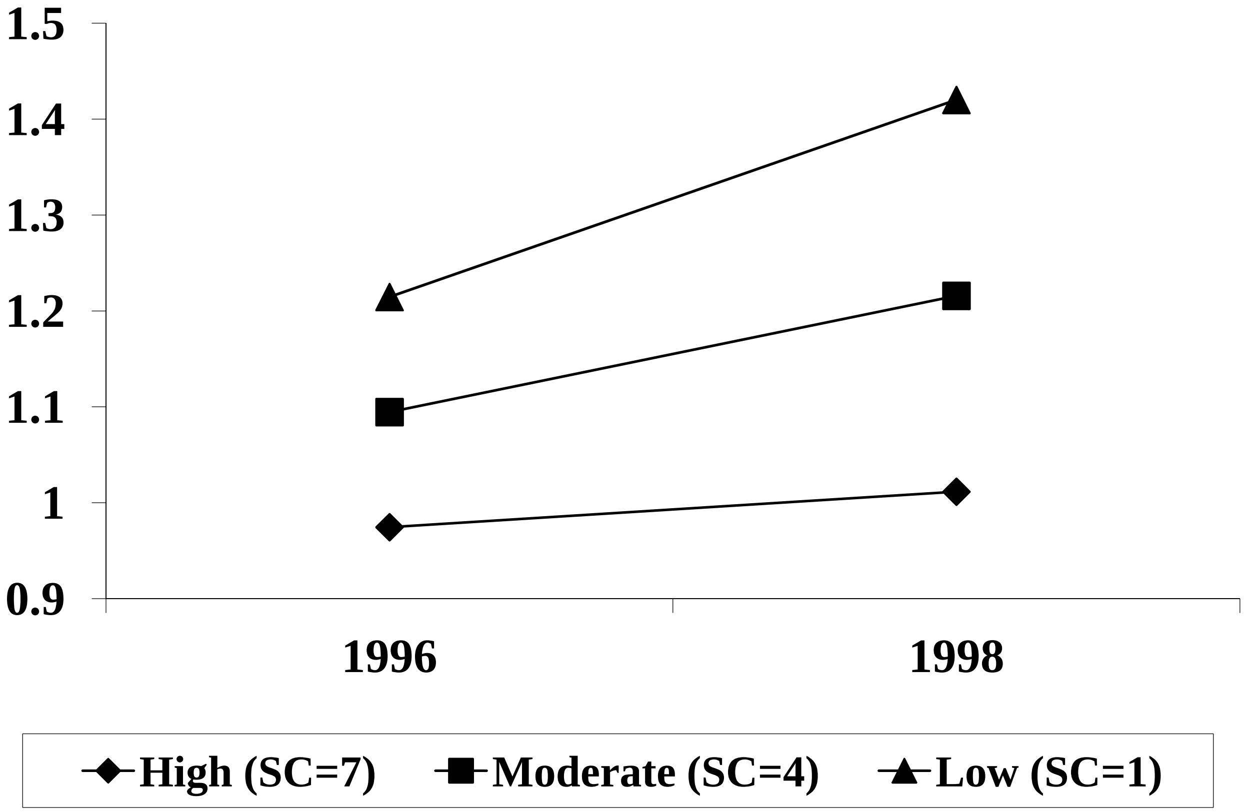

Figure 2. Predicted values of physical limitation scores at 1996 and 1998, by substantive complexity (SC) scores at 1996 - All respondents.

Table 1. Descriptive Statistics for Analysis Sample in 1996

	Men	Women	Not Retired	Retired
N	1375	1608	2021	962
Substantive Complexity Score				
0.9 – 1.8	12%	31%	22%	23%
2.1 – 3.4	18%	19%	17%	22%
4.0 – 5.3	29%	18%	23%	23%
5.5 – 8.5	41%	32%	38%	32%
Hours worked per week				
Up to 20	8%	12%	6%	21%
21-29	3%	7%	3%	8%
30-39	9%	20%	13%	18%
40-49	50%	46%	52%	39%
50 or more	31%	14%	26%	14%
Self-Rated Health:				
Excellent	25%	25%	25%	23%
Very Good	37%	40%	37%	42%
Good	29%	27%	29%	26%
Poor or Fair	9%	9%	9%	9%
# Limited IADL				
None	63%	48%	57%	52%
1-2	26%	33%	28%	32%
3 or more	11%	19%	15%	16%
# Immediate Recall Words				
Fewer than 5	15%	7%	11%	11%
5-7	68%	66%	67%	67%
8-10	17%	27%	23%	22%
# Delayed Recall Words				
Fewer than 5	38%	24%	31%	30%
5-7	53%	61%	57%	58%
8-10	9%	15%	12%	12%
Serial 7 Task: # correct subtractions				
Fewer than 3	13%	17%	15%	16%
3-4	27%	32%	29%	32%
5	58%	51%	56%	52%

Table 2. Standardized regression coefficients from structural equation model for T1 predictors of change over time in health and substantive complexity, net of health-related covariates and age: All respondents.

	Change Over Time (1996-1998)			
	ΔPhysical Limitations	ΔMemory	ΔWorking memory	ΔSubstantive Complexity
1996 Substantive Complexity	-0.06 ***	0.11 ***	0.08 ***	
1996 Physical Limitations				-0.01
1996 Memory				0.01
1996 Working memory				0.01

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 3. Standardized regression coefficients from structural equation model for T1 predictors of change over time in health and substantive complexity, by retirement status, net of health-related covariates.

	Retired Workers				Not Retired Workers			
	ΔPhysical Limitations	ΔMemory	ΔWorking memory	ΔSubstantive Complexity	ΔPhysical Limitations	ΔMemory	ΔWorking memory	ΔSubstantive Complexity
1996 Substantive Complexity	-0.07 **	0.01	0.09 **		-0.05 **	0.15 ***	0.08 ***	
1996 Physical Limitations				0.01				-0.02 *
1996 Memory				0.01				0.02
1996 Working memory				0.02				0.01

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 4. Standardized regression coefficients from structural equation model for T1 predictors of change over time in health and substantive complexity, net of health-related covariates and age: Men and Women. → NS Gender Differences

	Men				Women			
	ΔPhysical Limitations	ΔMemory	ΔWorking memory	ΔSubstantive Complexity	ΔPhysical Limitations	ΔMemory	ΔWorking memory	ΔSubstantive Complexity
1996 Substantive Complexity	-0.02	0.15 ***	0.11 ***		-0.09 ***	0.08 **	0.06 *	
1996 Physical Limitations				-0.01				-0.01
1996 Memory				0.03 *				-0.00
1996 Working memory				0.01				0.01

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$