Working Title: Women's Retirement, Occupation, and Depressive Symptoms

Subtitle: Do professional women experience fewer depressive symptoms when they make the transition to retirement compared to nonprofessional women?

Abstract

This paper explores whether women who retire from professional occupations experience lower rates of depressive symptoms as compared to women retiring from nonprofessional occupations. The theoretical frameworks underlying this study include: role theory, continuity theory, and the life course perspective. The premise for this paper is based on the assumption that retirement is a highly autonomous and potentially creative time and that professional occupations are more likely to be autonomous and potentially creative than nonprofessional occupations. Findings suggest there are key differences for women retiring from professional and nonprofessional occupations, namely that there may be something positive about the experience of working in a professional occupation which is expressed through the retirement transition. This paper highlights the importance of considering the heterogeneity among women's retirement transitions and to considering characteristics which are constant over time but may be potentially unobservable or un-measurable.

Introduction

Despite the fact that the proportion of women in the paid labor force has grown dramatically in the last several decades, relatively little is known about the implications of retirement for women (DeViney & O'Rand 1988; Price 2002). The transition to retirement has long been considered one of the most important later life changes (Szinovacz 1980) and a transition that has frequently been associated with depression (e.g. Doshi et al. 2007; Bosse et al. 1987; Atchley & Robinson 1982). Studies of older adults in U.S. and international samples have found that rates of depression and depressive symptoms tend to be higher for women than men (Nolen-Hoeksema 1990; Blazer et al.1994). There are not only costs associated with depression that translate into premature mortality, morbidity, and diminished quality of life, but also costs to society that are often overlooked. The annual cost of depression in the United States has been estimated to be approximately $43.7 billion (Greenberg et al. 1993).

Occupational career, retirement, and postretirement experiences tend to differ by gender and differences in women's and men's life pathways suggest that the implications of one's retirement transition will differ by gender (Moen 1996). Prior research also suggests that retirement adjustment may be related to occupation. Occupations with more complexity, autonomy, and less of a routine-schedule have been associated with intellectual flexibility which enhances well-being by aiding problem-solving abilities and lessening distress (Kohn 1976; Kohn & Schooler 1982; Mirowsky & Ross 1986). Successfully managing and solving problems is a key skill because it has been linked with lower rates of depression (Mirowsky & Ross 1986; Antonovsky 1987; Flannery et al. 1994). Occupational autonomy and non-routine work are also associated with greater emotional well-being and life satisfaction (Ross & Reskin 1992; Bird & Ross 1993; Mirowsky & Ross 1992; Lennon & Rosenfield 1992; Menaghan 1991). Earlier work suggests that employment in a demanding occupation may enhance skills and coping mechanisms (Miller et al. 1979) and the experience of working in a demanding occupation may enhance cognitive skills and life satisfaction later in life (Clausen and Gilens 1990). Qualitative research points out that having strong ties to one's occupational role and social connections are important to women retiring from professional occupations (Price 2002).

In an attempt to contribute to the growing literature on the implications of retirement for women, this study explores whether there are differences in depressive symptoms for professional versus nonprofessional women using a nationally representative sample of women who made the transition to retirement between 1994 and 2006. Based on the assumption that retirement is a highly autonomous and potentially creative time and that professional occupations are more likely to be autonomous and potentially creative than nonprofessional occupations, this study tests whether women who retire from professional occupations tend to

experience lower rates of depressive symptoms as compared to women who retire from nonprofessional occupations. Though many studies have compared the retirement experiences of women to men (e.g. Dabrowski 1983; Moen 1985; Quick & Moen 1998; Szinovacz and Davey 2004), this study focuses on the heterogeneity among the retirement experiences of women to better understand their distinctive retirement experiences.

Prior Literature on Women, Occupation, and Retirement

As Price (2003) points out, gender-specific studies have unveiled important details specific to women's retirement (Keddy & Singleton 1991; Skirboll & Silverman 1992). Professional women are likely to view retirement as an interruption (Erdner & Guy 1990; Karp 1989; Onyx & Benton 1996) and feel highly attached to their occupational role as well as the social connections made through work (Price 2002). An in-depth examination of the narratives of 28 female professionals found no significant reduction in self-esteem or personal identity upon retirement (Price 2000). Comparisons of retirement attitudes for professional and nonprofessional women have found that professional women tend to be less enthusiastic about retirement compared to nonprofessional women (Jewson 1982; Prentis 1980). Much of the work that has paved the foundation for the study of the retirement experiences of professional women has dealt with perceptions and attitudes about retirement before it takes place (Erdner & Guy 1990; Feuerbach & Erdwins 1994; Karp 1989; Keddy & Singleton 1991) or rely on small samples (e.g. Wingrove & Slevin 1991; Price 1998, 2000).

Theoretical Background and Hypothesis

The theoretical frameworks underlying this study include: role theory, continuity theory, and the life course perspective. Role theory and continuity theory, the two dominant theoretical frameworks in research on retirement quality (Quick and Moen 1998), each provide a distinct

framework for understanding the way older adults emotionally respond to major life changes. On the one hand, role theory claims that key role transitions can be linked to changes in emotional well-being and more specifically suggests that making the transition from working to retirement is likely to increase the probability of experiencing depressive symptoms. On the other hand, continuity theory claims that individuals maintain a consistent pattern of behavior as they age and thus suggests that retirement is unlikely to be related to changes in depressive symptoms. The life course perspective views the transition of retiring as one which is likely to be influenced by choices and experiences throughout the life course and suggests that occupational choice and experience are likely to influence the relationship between retirement and emotional well-being.

Role Theory

Generally speaking, role theory has been put forward as a framework for understanding how the well-being of older adults changes with role transitions. Role theory suggests that older adults experience changes in well-being when role transitions occur. Role theory maintains that the roles an individual plays at different stages in his or her lifetime are the basis of self-concept and suggests that role transitions can be measured in terms of adjustment to roles that are played at specific ages (Cottrell 1942). In particular, the transition from worker to retiree is commonly identified as a major role loss (Merton 1957; Moen et al. 1992; Riley & Riley 1994) which can lead to an erosion of social identity and self-esteem (Rosow 1985; Fry 1992). Feelings of diminished self-worth and depression may result from retirement because the occupation one had may have been a source of self-worth (George 1993). Role theory focuses on the problem of adjusting to cultural roles or roles assigned to individuals based on their age and sex and also on problems relating to the expectations associated with the transition from one stage in the life-course to another (Cottrell 1942).

Role theory motivates the question as to whether occupational autonomy and creativity can help explain the relationship between retirement and depressive symptoms by suggesting that being a member of the labor force is an important role which is linked with feelings of self-worth. When one severs this role, feelings of depressive symptoms are likely to set in because an individual may no longer feel that he or she has a productive or useful role in life. Retiring and stopping work implies a change in one's labor force status as well as a change in daily routine and increased autonomy. Based on the fundamental link between labor force status and self-esteem suggested by role theory, I extrapolate that there is a connection between the autonomy associated with one's occupation and the probability of experiencing depressive symptoms upon retirement. Individuals who retire from occupations that can be associated with higher levels of autonomy and creativity are less likely to experience an increase in depressive symptoms upon retirement because retirement is typically a highly autonomous and potentially creative role and these individuals are more likely to have developed skills for coping with their new role as a retiree.

Continuity theory

Continuity theory was first developed as a framework for understanding human development throughout the life-course (Rosow 1963) but has since been viewed as more relevant to the later part of the life-course (Fry 1992). The primary premise of continuity theory is that individuals maintain their own ways of adapting to their environment and thus maintain a consistent pattern of behavior as they age (Atchley 1989). This premise is build upon the notion that people have unique personalities which are consistent across the life span and which dictate how they deal with transitions (Blalock 1982; Hage 1972).

Although some role loss is considered inevitable as individuals age, implicit in continuity theory is the notion that individuals play multiple roles and that many of these are stable roles throughout the life-course (Fry 1992). Older adults decide how to react to transitions by relying on experiences from their past and based on roles they have played in their lifetime (Atchley 1989). Characteristics that manifest in the later part of the life-course are not considered new but rather are consistent with earlier coping strategies and are based on earlier life experiences (Reichard et al. 1962; Mass and Kuypers 1974) or are characteristics that simply become more pronounced as one ages (Neugarten 1971). People who were very active throughout their lives are likely to continue to engage in activities or to substitute for new ones as they go through major life changes such as retirement (Atchley 1989; Richardson & Kilty 1991). The idea that individuals are consistent in the ways that they adapt to changes has been considered a more holistic way of understanding life-course transitions (Fox 1982).

Continuity theory can be used to provide a near opposite response to the question regarding whether occupational autonomy and creativity can help explain the relationship between retirement and depressive symptoms. Continuity theory suggests individuals respond to role transitions in a manner that is consistent with their personality and that it is unlikely that retirement will induce feelings of depressive symptoms. Instead continuity theory suggests that people are likely to select into occupations based on predispositions toward autonomy and creativity. Therefore, the change in status that occurs with retirement may not be linked with feelings of depression, but there may be difference in rates of depressive symptoms based on the levels of autonomy and creativity associated with the occupation one retired from because of the link between depressive symptoms and the level of autonomy and creativity associated with one's occupation.

The Life Course Perspective

The life course perspective is a third theoretical approach which suggests that life course transitions such as retiring take place within the context of ongoing trajectories (Elder 1992, 1995). The life course perspective can be defined as a way of understanding how time, transitions, and context shape human development (Elder 1992; George 1996). Furthermore, it argues that individuals are dynamic and shaped by environmental factors through different stages in life. Moen (1996) suggests that a key component of this perspective is to view the life course as a social phenomenon which varies over time, space, and across different types of people. In addition, she suggests that a life course perspective can be characterized by its emphasis on transitions and trajectories and that in order to apply this perspective one must have dynamic longitudinal measures.

The life course perspective suggests that the transition of retiring is one which is likely to be influenced by choices made throughout the life course, including the occupation one enters. The life course perspective also suggests that factors such as gender, race, and social class influence well-being in old age (O'Rand 1996; Estes 2001) and that events or transitions experienced earlier in life may affect subsequent life course patterns (Moen 1996). Using this perspective, retirement has been described not only as an objective life course transition, but also as a subjective developmental transformation (Dannefer 1984). In other words, individuals may react differently to the transition depending on their own characteristics and coping mechanisms.

Hypothesis

The three theoretical perspectives put forward here each suggest factors that are important to gaining a better understanding of the relationship between retirement and depressive symptoms. In addition, they suggest an analytical framework that explores depressive symptoms

before, during, and after retirement in order to gain a fuller picture of the implications of the retirement transition. Based on these theoretical frameworks, the hypothesis put forward here explores whether the retirement transition is associated with changes in depressive symptoms as suggested by role theory or whether there is no association as suggested by continuity theory. Based on the idea supported by the life course perspective that earlier life experiences and choices (such as type of occupation) influence later life experiences, this paper asks whether professional women experience lower rates of depressive symptoms upon retirement as compared to nonprofessional women.

The Data

The data are from the Health and Retirement Study (HRS 2007), a longitudinal biannual survey of households which includes the primary respondent and his/her spouse. Initiated in 1992, HRS is a population-based survey designed to study the health and well-being of community-dwelling adults in the contiguous United States over age 50. HRS is sponsored by the National Institute of Aging and conducted by the Institute of Social Research at the University of Michigan. HRS data consist of 4 sub-samples representing different age groups: those born in 1923 or earlier, those born in 1924 through 1930, those born in 1931 through 1941, and those born in 1942 through 1947. Selection of households was based on a multistage area probability design with over-samples for minorities and persons residing in Florida. Analyses presented here are for women between the ages of 50 and 80 from waves 2-8 (1994, 1996, 1998, 2000, 2002, 2004, and 2006) of the HRS who make the transition to retirement. Wave 1 was excluded because the dependent variable was defined in a different way from all subsequent waves. Many of the variables used are from the RAND HRS dataset (RAND HRS 2007).

Measures

The main dependent variable used, *cesd,* is a mental health index based on the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff 1977). In its original form, the CES-D consists of 20 items which are a continuum of psychological distress measures that use a Likert scale of frequency. The HRS uses 8 components of the scale: depression, everything is an effort, sleep is restless, felt alone, felt sad, could not get going, felt happy, and enjoyed life. Respondents were asked whether they experienced these sentiments much of the time over the week prior to the interview, responses were coded as "yes" (1) or "no" (0).[1] The dependent variable presented in the main analysis is a count measure of the CES-D scale that ranges from 0 to the 8 (felt happy and enjoyed life were reverse coded).[2] The key independent variable is measurement of retirement which is operationalized as making the transition from working full-time to becoming fully retired. The variable *retired* is equal to one if the respondent is fully retired and equal to zero if the respondent is working full-time. The variable *retires* indicates respondents who made the transition to retirement during the timeframe that the data was collected. Indicator variables were created to indicate the when the transition to retirement took place: *ret_6* indicates six or more years prior to when the respondent retired, *ret_4* indicates four years prior to retirement, *ret_2* indicates two years prior, *ret0* indicates the year in which retirement took place, *ret2* indicates 2 years after retirement, *ret4* indicates four years after retirement, and *ret6* indicates six or more years after retirement. Professional women are defined as those who work in managerial specialty or professional specialty occupations.[3]

[1] The exact wording is, "Now think about the past week and the feelings you have experienced. Please tell me if each of the following was true for you much of the time this past week. Much of the time during the past week you *felt depressed*," … "yes" or "no."
[2] The inter-item reliability is .79.
[3] Please see Appendix X and XX for the full list of occupational codes that distinguish "professionals" and "nonprofessionals".

Retirement indicator variables with a p in from of them (e.g. pret0) indicate an interaction between being a professional and time of retirement.

I attempted to include control variables which incorporate life course transitions and that have been shown most consistently to influence postretirement well-being: namely, *age* (in years), as well as age in subgroups (*age50-54, age55-59, age60-64, age65-69, age70-74, age75-7*9); education (*higher edu* which equals one if the respondent has a high school degree or more education); race (*Black*, *White* – reference category, *Other*); self-rated health status where *in bad health* is fair or poor health as compared to good, very good, or excellent health; total household income (in dollars, divided in half for coupled households)[4]; marital status (*widowed, divorced, partnered, never married, married* – reference category). In addition, a measure of physical *activity* is included as prior research suggests that activity is related to the anxiety and distress experienced by retirees (Drentea 2002). An indicator of whether the respondent participated in physical activity 3 or more times a week is used.

In addition, prior research suggests that there are several factors that are important to consider when evaluating women's retirement experiences. Prior research indicates that women 50 to 84 years old who are childless report higher rates of depression compared to mothers (Koropeckyj-Cox 1998). A dummy variable, *child*, indicates whether or not the respondent has any children. For women, being in emotionally supportive social relationships has been found to be protective against major depression (Kendler et al. 2005), as such a dummy for social support is included which is equal to one if the respondent indicates that they got together with others at any point during the previous week. Level of stress or job satisfaction have been associated with retirement satisfaction (Richman et al. 2006; Blekesaune et al. 2005) and women have been

[4] Total household income includes: income, pensions, annuities, Social Security Disability (SDI), Supplemental Security Income (SSI), Social Security retirement, spouse or widow benefits, unemployment and worker's compensation, veteran's benefits, welfare, and food stamps, alimony, other income, insurance, and inheritance.

found to be more negatively affected by stress than men throughout adulthood (Kessler 1979; Krause 1986). An indicator of job *stress* is included which measures whether the respondent agrees or strongly agrees that their job involves a lot of stress (this indicator equals zero if the respondent disagrees or strongly disagrees with the statement).

Analytic Strategy

This paper first looks at mean descriptive statistics for professional and nonprofessional women. Then it explores pooled OLS regression models to estimate the association between retirement and depressive symptoms controlling for other relevant factors. Next it looks at depressive symptoms by occupation in time from retirement without any controls and then with several different sets of controls. This paper then uses fixed effects estimation to explore how the transition to retirement relates to changes in depressive symptoms by professional status controlling for factors which are constant over time, such as stable personality traits. First regression models with various sets of controls are presented and then the regression coefficients from the retirement indicators in the fixed effects regression models are divided by the mean depressive symptom score for professionals and nonprofessionals in order to show the magnitude of the change in time from retirement by occupational status.

Descriptive Statistics

Table 1 describes the demographic and other key variables. Approximately the same proportion of professional and nonprofessional women are retired. The proportion who make the retirement transition during the time period studied are also approximately equal by professional status. Professional women tend to have fewer indicators of depressive symptoms, be more likely to have a higher education and to have higher income compared with nonprofessional women.

Table 1. Means and Standard Deviations for all variables used in the analysis

	Professionals N=8619		**Nonprofessionals N= 22163**		**Total N=30782**	
Variable	**Mean**	Std. Dev.	**Mean**	Std. Dev.	**Mean**	Std. Dev.
CES-D	**1.11**	1.71	**1.59**	2.03	**1.43**	1.93
Retired	**0.64**	0.48	**0.63**	0.48	**0.63**	0.48
Retires	**0.22**	0.41	**0.21**	0.41	**0.21**	0.41
Age	**62.97**	5.72	**63.02**	5.56	**62.96**	5.64
Age55	**0.22**	0.42	**0.21**	0.41	**0.21**	0.41
Age60	**0.31**	0.46	**0.33**	0.47	**0.32**	0.47
Age65	**0.26**	0.44	**0.27**	0.44	**0.26**	0.44
Age70	**0.12**	0.32	**0.11**	0.31	**0.11**	0.32
Age75	**0.02**	0.14	**0.02**	0.13	**0.02**	0.14
White	**0.83**	0.38	**0.77**	0.42	**0.79**	0.41
Black	**0.17**	0.37	**0.21**	0.41	**0.19**	0.39
Other	**0.01**	0.12	**0.02**	0.15	**0.02**	0.15
Higher edu	**0.97**	0.17	**0.76**	0.43	**0.83**	0.37
In bad health	**0.13**	0.34	**0.26**	0.44	**0.22**	0.41
Income	**$44,597**	$48,144	**$25,717**	$25,646	**$32,439**	$36,767
Married	**0.62**	0.49	**0.57**	0.50	**0.58**	0.49
Partnered	**0.02**	0.12	**0.02**	0.15	**0.02**	0.14
Widowed	**0.17**	0.37	**0.20**	0.40	**0.19**	0.39
Divorced	**0.16**	0.36	**0.16**	0.37	**0.16**	0.36
Never_marr~d	**0.04**	0.20	**0.04**	0.20	**0.05**	0.21
Child	**0.91**	0.28	**0.95**	0.22	**0.93**	0.25
Social	**0.78**	0.41	**0.76**	0.43	**0.77**	0.42
Stress	**0.28**	0.45	**0.22**	0.42	**0.25**	0.43
Active	**0.41**	0.49	**0.39**	0.49	**0.40**	0.49

Results

OLS Regressions

Pooled OLS regression models were used to estimate the association between depressive symptoms and being retired controlling for other relevant factors. Table 2 suggests that for women, being retired is associated with a higher depressive symptom score and that being a professional is associated with a lower score. Models 1-5 in table 2 progressively

consider more factors that may influence the relationship between retirement and depressive symptoms. As more factors are considered, the magnitude of the coefficients for being retired and being a professional increase, continuing to suggest that being retired is associated with more depressive symptoms and being a professional is associated with fewer depressive symptoms. Model 6 looks at the relative influence of aging in five year increments relative to being 50-54 years old. This last model suggests that being in an older age group is associated with a lower depressive symptom score as compared with being in the younger age group.

Table 2. OLS Regression Models Predicting Women's Depressive Symptoms

	(1)	(2)	(3)	(4)	(5)	(6)
Retired	0.204***	0.204***	0.223***	0.491***	0.495***	0.496***
	(0.027)	(0.027)	(0.029)	(0.037)	(0.037)	(0.037)
Professional	-0.159***	-0.159***	-0.144***	-0.166***	-0.161***	-0.162***
	(0.023)	(0.023)	(0.025)	(0.025)	(0.025)	(0.025)
Age	-0.016***	-0.016***	-0.017***	-0.015***	-0.017***	
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	
Black	0.037	0.037	0.028	0.043	0.035	0.038
	(0.028)	(0.029)	(0.031)	(0.031)	(0.031)	(0.031)
Other	0.085	0.085	0.036	0.044	0.040	0.036
	(0.056)	(0.056)	(0.060)	(0.060)	(0.060)	(0.060)
Higher edu	-0.408***	-0.408***	-0.387***	-0.398***	-0.393***	-0.397***
	(0.029)	(0.029)	(0.032)	(0.032)	(0.032)	(0.032)
In bad health	1.556***	1.556***	1.525***	1.516***	1.458***	1.457***
	(0.026)	(0.026)	(0.028)	(0.028)	(0.028)	(0.028)
Income	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Partnered	0.282***	0.282***	0.233***	0.233***	0.238***	0.238***
	(0.066)	(0.066)	(0.071)	(0.071)	(0.071)	(0.071)
Widowed	0.451***	0.451***	0.432***	0.432***	0.425***	0.418***
	(0.029)	(0.029)	(0.031)	(0.031)	(0.031)	(0.031)
Divorced	0.408***	0.409***	0.407***	0.401***	0.396***	0.399***
	(0.029)	(0.030)	(0.032)	(0.032)	(0.032)	(0.032)
Never	0.269***	0.274***	0.274***	0.281***	0.273***	0.276***
married	(0.055)	(0.063)	(0.069)	(0.069)	(0.068)	(0.069)
Has a child		0.007	-0.015	-0.006	-0.009	-0.004
		(0.046)	(0.051)	(0.051)	(0.051)	(0.051)
Social			-0.313***	-0.312***	-0.289***	-0.289***
			(0.026)	(0.026)	(0.026)	(0.026)
Job stress				0.426***	0.422***	0.420***

				(0.037)	(0.036)	(0.036)
Active					-0.287***	-0.285***
					(0.023)	(0.023)
Age 55						-0.128***
						(0.039)
Age 60						-0.240***
						(0.040)
Age 65						-0.316***
						(0.045)
Age 70						-0.365***
						(0.049)
Age 75						-0.395***
						(0.057)
Constant	2.289***	2.282***	2.560***	2.211***	2.404***	1.572***
	(0.109)	(0.118)	(0.133)	(0.136)	(0.137)	(0.075)
Observations	30782	30782	25548	25548	25542	25542
R-squared	0.170	0.170	0.172	0.177	0.182	0.182

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Time from Retirement

Table 3 shows the mean depressive symptoms for professional and nonprofessional women without controlling for any factors during time periods before, during, and after retirement. Professionals maintain almost exactly the same depressive symptom score 6 or more years prior to retirement as they do at retirement and 6 or more years after retirement. Mean depressive symptom scores are higher for nonprofessional women at and after retirement as compared to the time prior to retirement. Nonprofessional women tend to have higher depressive symptoms scores on average compared to professional women. The differences in the mean depressive symptom scores for professional versus nonprofessional women are statistically significant.

Table 3. Mean Depressive Symptoms by Occupation in Time from Retirement

Years from Retirement

	-6 or more	-4	-2	0	2	4	6 or more
Professionals	1.07	1.13	1.05	1.08	1.09	1.06	1.07
Non-Professionals	1.27	1.36	1.59	1.73	1.64	1.73	1.65
Difference	0.20**	0.23*	0.53***	0.64***	0.55***	0.67***	0.57***

Note: *** p<0.01, ** p<0.05, * p<0.1

Fixed Effects Estimation

As Charles (2002) points out, the problem in the attribution of causation is that it is unclear whether retirement causes depression or whether those who are more lonely or depressed select into retirement. In order to address concerns of selection bias, the analysis here includes and goes beyond ordinary least squares regression which simply estimates the association between depressive symptoms and being retired or being a professional, by using a fixed effects estimation model based on the work of Jacobson et al. (1993). This model allows us to explore how the transition to retirement relates to changes in depressive symptoms by professional status controlling for factors which are constant over time, such as stable personality traits. The basic structure of the model is as follows:

$$Y_{it} = \alpha_i + \gamma_t + X_{it}\beta + \sum_{k=-r}^{k=r} \partial_k D_{it}^k + \varepsilon_{it}$$

Where:

i = individual

t = time

γ_t = wave of the study

$X_{it}\beta$ = vector of observed time varying individual characteristics

∂_k = the effect of retirement on depressive symptoms k waves following the retirement occurrence, where k is negative in the waves prior to retirement, equal to zero at retirement, and positive following retirement

D_{it}^k = time since retirement for each individual

ε_{it} is assumed to have constant variance and to be uncorrelated across individuals and time

Fixed effects estimation models suggest a negative relationship between changes in women's depressive symptoms and transitioning to retirement that is only statistically significant for professional women (table 5). Model 1 in table 5 finds no significant relationship between retirement and depressive symptoms, relative to 6 or more years prior to retirement. Model 2 also finds no significant relationship using an interaction between retirement year and professional status. Including the main effect of retirement by year and an interaction between retirement year and professional status, model 3 suggests no significant relationship between retirement and depressive symptoms. Model 4 estimates a separate equation for professional women only and finds a significant negative relationship relative to 6 or more years prior to retirement which begins two years prior to retirement and continues into the years following retirement. Model 5 estimates the association for nonprofessional women only and finds a positive but not statistically significant relationship between the retirement transition and depressive symptoms.

Table 4. Fixed Effects Estimation Models

	(1)	(2)	(3)	(4)	(5)
ret_4	-0.048		-0.050	-0.135	0.019
	(0.073)		(0.089)	(0.110)	(0.099)
ret_2	-0.045		0.006	-0.346**	0.102
	(0.095)		(0.109)	(0.138)	(0.127)
ret0	-0.001		0.086	-0.359**	0.200
	(0.114)		(0.123)	(0.173)	(0.151)

ret2	-0.045		-0.018	-0.386*	0.123
	(0.137)		(0.147)	(0.201)	(0.183)
ret4	-0.041		0.029	-0.487**	0.195
	(0.160)		(0.169)	(0.237)	(0.213)
ret6	-0.062		-0.041	-0.532*	0.172
	(0.205)		(0.214)	(0.298)	(0.275)
age	-0.027	-0.030	-0.030	-0.088	-0.001
	(0.054)	(0.056)	(0.056)	(0.087)	(0.073)
partnered	0.339	0.319	0.322	0.686*	0.233
	(0.215)	(0.216)	(0.218)	(0.355)	(0.260)
widowed	0.554***	0.536***	0.543***	0.374**	0.613***
	(0.099)	(0.104)	(0.104)	(0.164)	(0.131)
divorced	0.306**	0.293*	0.299*	-0.075	0.449**
	(0.148)	(0.154)	(0.154)	(0.234)	(0.193)
in bad health	0.627***	0.631***	0.622***	0.555***	0.636***
	(0.072)	(0.074)	(0.074)	(0.128)	(0.088)
income	0.000	0.000	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
wave 3	0.015	0.016	0.015	0.338*	-0.139
	(0.126)	(0.129)	(0.131)	(0.201)	(0.171)
wave 4	0.323	0.309	0.307	0.727**	0.120
	(0.225)	(0.228)	(0.234)	(0.365)	(0.302)
wave 5	0.367	0.357	0.354	0.974*	0.056
	(0.329)	(0.333)	(0.342)	(0.533)	(0.443)
wave 6	0.398	0.397	0.397	1.199*	0.014
	(0.447)	(0.452)	(0.465)	(0.725)	(0.603)
wave 7	0.373	0.383	0.384	1.369	-0.085
	(0.553)	(0.560)	(0.576)	(0.902)	(0.746)
wave 8	0.400	0.405	0.409	1.537	-0.131
	(0.662)	(0.672)	(0.689)	(1.087)	(0.890)
pret_4		-0.020	0.029		
		(0.092)	(0.117)		
pret_2		-0.140	-0.149		
		(0.090)	(0.114)		
pret0		-0.094	-0.185		
		(0.096)	(0.115)		
pret2		-0.061	-0.049		
		(0.101)	(0.117)		
pret4		-0.107	-0.144		
		(0.111)	(0.127)		
pret6		-0.040	-0.011		
		(0.125)	(0.131)		
Constant	2.528	2.734	2.700	5.831	1.204
	(3.028)	(3.160)	(3.160)	(4.903)	(4.107)
Observations	9006	8579	8579	2855	5724
Number of id	1531	1458	1458	502	998

R-squared	0.031	0.029	0.030	0.030	0.033

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Discussion

Results indicate that professional women tend to have fewer indicators of depressive symptoms, be less likely to be retired, more likely to have a higher education and higher income compared with nonprofessional women. Controlling for these differences and other relevant factors such as social connectedness and physical activity, it appears that retirement is positively associated with depressive symptoms and that being a professional is associated with fewer depressive symptoms. Looking at mean differences in depressive symptoms without controlling for any factors suggests that professionals maintain similar levels of depressive symptoms before and after retirement, while nonprofessionals experience more symptoms. Controlling for other factors, using separate pooled OLS regression models we see that for nonprofessionals there is a positive association with depressive symptoms which begins two years prior to retirement and continues into the years following retirement and that the relationship is not significant for professionals. Fixed effects estimation models suggest a negative relationship between changes in women's depressive symptoms and transitioning to retirement for professional women. Comparison of fixed effects regression coefficients relative to the mean depressive symptom scores suggest that the magnitude of the decrease in depressive symptom score for professionals is rather large.

These findings support the hypothesis that professional women experience fewer depressive symptoms. The level differences suggest that there is something positive about the experience of working in a professional occupation which is expressed through the retirement

transition. Findings regarding professional women support the hypothesis put forward in role theory, which suggests that major transitions such as going from worker to retiree can lead to changes in emotional well-being. In support of continuity theory, which suggests that individuals maintain constant behaviors as they age, we see that nonprofessional women do not experience significant changes in depressive symptoms upon retirement. With regard to the life course perspective, these findings suggest the need to consider life transitions and potentially observable events that may occur earlier in the life course as captured by the fixed effects framework.

Conclusion

The findings presented in this paper point to the importance of considering the heterogeneity among women's retirement transitions and to considering characteristics which are constant over time but may be potentially unobservable or un-measurable. There are some key differences for women retiring from professional and nonprofessional occupations, namely that there may be something positive about the experience of working in a professional occupation which is expressed through the retirement transition. Findings suggest that future research ought to explore specific factors that may aid the retirement transition for nonprofessional women.

Policy implications

To address the social and economic consequences of population aging, many countries have introduced policies to encourage prolonged employment and delay retirement amongst older adults (Duval 2003). Studies suggest that fewer retirements in any given year would result in a greater supply of experienced workers available to employers and fewer people relying on savings, pensions, and Social Security as their main sources of income (Purcell 2005). Other research suggests that keeping older adults in the labor force may be beneficial because it may increase social interaction and social participation among the elderly (Drentea 2002). This

paper suggests that it may be worthwhile to further explore the differences between professional and nonprofessional women in order to better understand the mechanisms that may being aiding professional women in their transition to retirement. The findings from this paper also suggest that policy or programs aiming to help older adults make the transition to retirement make want to focus their efforts on nonprofessional women, a group that already has more risk factors for depressive symptoms related their lower average income and educational attainment.

Limitations

Caution should be exercised in generalizing the findings in this study to future cohorts, as the data analyzed here belong to cohorts born between 1923-1953. The employment and retirement experiences, as well as perceptions of psychological well-being and depression, are inevitably influenced by the historical context in which they live (Elder & Caspi 1992; Elder & O'Rand 1995). In addition, this analysis relies on responses to a question about the respondents' depression status and is limited by not using the full CES-D scale. Another important limitation is that analyses do not consider disabled workers, a group which tends to have high rates of depression. The analyses presented here also do not consider that some women may have both professional and nonprofessional occupations throughout their life-course (sensitivity analyses ought to explore this further). These analyses only look at the transition from working full-time to being fully retired. Prior research suggests that for women it is very common to work part-time or to partially-retire and this analysis missed out on women who make other types of retirement transitions. In addition, research suggests that depression earlier in life is likely to influence depressive symptoms experienced later in life, the HRS did not include a measure of early life depression in the waves analyzed here but plan to include this measure in the next wave. Furthermore, these analyses exclude women who did not participate

in the labor force, a group that may be at risk for depression for a variety of reasons including their potentially lower income levels.

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