First Differences in Depressive Symptoms among Older Men and Women in Japan and the United States as Reported in the NUJLSOA and HRS

Andrew D. Tiedt

NORC at the University of Chicago

atiedt@uchicago.edu

Objectives

Past research has posited decrements in the gender gap in depressive symptoms at late ages due to role shifts experienced by older men. This study seeks evidence for this phenomenon in the context of the United States and Japan. The comparative analyses demonstrate the persistence of filial piety norms and coresidence in shaping informal support relationships in Japan, distinguishing depressive symptoms self-reports in the two nations.

Methods

Change score models were fit to examine the covariates of depressive symptoms in the Health and Retirement Study and the Nihon University Japanese Longitudinal Study of Aging.

Results

The gender gap in depressive symptoms persisted in both nations, with a slight decrement in Japan. Changes in marital status exacerbated depressive symptoms among Japanese men, while income provided a slight buffering effect. Coresiding with daughters also appeared to protect Japanese women with functional limitations from depressive symptoms. HRS data demonstrated that changes in marital status and somatic health were prominent in predicting depressive symptoms for men and women.

Discussion

The results provided evidence for greater gender stratification in Japan than the United States. Future research should consider increased heterogeneity in contemporary Japanese households, reflecting new interpretations of traditional family support relationships.

Past research conducted in Japan and the United States has identified a cross-national gender gap in depressive symptoms, with women generally reporting increased symptoms over their male counterparts (Inaba, Thoits, Ueno, Gove, Evenson, & Sloan, 2005; Katsumata, Arai, Ishida, Tomimori, Denda, & Tamashiro, 2005; Mirowsky & Ross, 1992). Further research posits that this gap lessens over time due to role shifts experienced by men at late stages in life (Barefoot, Mortensen, Helms, Avlund, & Schroll, 2001). It has been suggested that the gender disparity in depressive symptoms and its theoretical reduction among elder groups is a socio-cultural phenomenon, rooted in the gender socialization process and differential access to social institutions. For this reason, research that focuses on differential mental health outcomes provides a means of clarifying gender inequalities. Furthermore, cross-national research generates possibilities for better understanding how cultural norms affect somatic and mental health throughout the life course (Mirowsky, 1996; Moen & Chermack, 2005).

This paper examined changes in depressive symptoms and their correlates at two points in time, using two nationally representative surveys; the Nihon University Japanese Longitudinal Study of Aging (NUJLSOA) and the Health and Retirement Study (HRS). The analyses identified a persistent gender gap in depressive symptoms across nations that decreased slightly between survey waves in Japan, but not the United States. The investigation revealed that life transitions, such as marital dissolution, retirement and poor somatic health were partially responsible for increments in self-reported depressive symptoms among older Japanese men. This study posits that this was due to greater gender stratification in informal family support roles as well as the formal labor economy in Japan (Brinton, 1988). In addition, conflict between traditional notions of intergenerational coresidence and contemporary preferences for independent living among Japanese families provided a unique point of comparison with the

United States. The results suggest that gendered expectations surrounding social support and residence provide a different context for the expression of depressive symptoms in Japan than the United States.

Theoretical Background

On age and cohort differences in depressive symptoms

Aggregate gender differences in depressive symptoms reflect the collective experiences of elder cohorts as they navigate shifting social institutions, gender expectations and difficulties related to morbidity. It is a unique challenge for cross-national research to capture life course-related events while differentiating age, period and cohort effects across cultures.

Riley (1986) helped disentangle the differential impact of somatic health and sociological processes by arguing that successive generations experience the challenges related to aging in different ways. For example, despite the persistent gender gap in depression, landmark social changes brought about by the women's rights movement of the previous century might have a buffering effect on depressive symptoms among younger female cohorts. Wealthy and educated baby-boomers from the U.S. and Japan have benefitted from the aforementioned civil rights movement. Therefore, distinctions in CES-D scores between the "young-old" and the "oldest-old" cannot simply be attributed to the onset of functional limitations and chronic illnesses.

However, in spite of equalization of opportunity and increased wealth among baby-boomers, evidence exists that younger cohorts report increased depressive symptoms over older cohorts. There is no shortage of evidence for this phenomenon in U.S. research (Yang, 2007). The highest CES-D scores may not only be found among younger groups, but the effect may be

magnified after adjusting for physical impairments (Choi & Kim, 2007). In contrast, recent Japanese studies have found that older cohorts may be more depressed (Koizumi et al., 2005). Complicating this argument, accumulated negative experiences have been described as "inoculators" among elders, while the novel experience of somatic health problems results in increased depressive symptoms among middle-aged adults (Fukukawa et al., 2004).

Theories of positive aging suggest that aggregate decreases in depression and anxiety over the life course may be attributed to reductions in demands placed on elders and the development of coping mechanisms (Scott et al., 2008). An individual sense of mastery is an important buffer against depression among elders who gradually become used to somatic functioning difficulty. For this reason, the correlates of depression probably change from early to late old-age (Mehta et al., 2008). The most depressive "oldest-old" respondents may have the highest rates of apathy, while the most depressive "young-old" respondents report high disability rates. Gender role theory emphasizes that elder men and women are exposed to distinct pressures as they pass through social institutions and transition from one life stage to another. If gender differences in depressive symptoms are reduced at later ages, this change cannot be attributed to functional limitations alone. The root cause may lay in profound role shifts experienced by men later in life (Barefoot, et al., 2001).

Functional limitations, chronic illness and depressive symptoms in longitudinal perspective

Functional limitations and chronic health problems act as acute stressors that are realized in depressive symptoms. However, cross-sectional studies cannot disentangle the direction of this association and past longitudinal studies have found that the opposite was also true; depressive symptoms increase the risk for future difficulty with ADLs and IADLs, independent of socioeconomic factors and social support (Kondo, Kazama, Suzuki & Yamagata, 2008). Even

a very low frequency of depressive symptoms has been associated with ADL decline, hospitalization and use of home care services at a later date (Barry, Allore, Bruce, & Gill, 2009; Larsen, Schroll, & Avlund, 2006).

Depressive symptoms may operate on future disabilities by reducing individuals' willingness to engage in exercise, maintain social contacts and participate in other activities which maintain physical functioning (Bruce, Seeman, Merril, & Blazer, 1994; Penninx, Leveille, Ferrucchi, van Eijk, & Guralnik, 1999). Prior depression is a clear predictor of increased depressive symptoms and functional limitations. When the relationship is reversed, functional limitations are even stronger predictors of depressive symptoms (Yang, 2006).

Although functional limitations increase the risk of depressive symptoms for both sexes (Suthers, Saito & Crimmins 2003), Japanese research has reported gender differences in the relationship between somatic health and depressive symptoms. Some studies have found that ADLs and self-rated health may be the most significant predictors of depression among women, while chronic conditions are strong predictors of depression among men (Katsumata, 2005; Kuroda, Tadashi, & Sakai, 2006; Tanaka, Sasazawa, Suzuki, Nakazawa, & Koyama, 2011). In contrast, recent research from the United States provides evidence that the predictive power of depressive symptoms on future disabilities is more pronounced among men (Barry et al., 2009). However, the differences between men and women may disappear with advancing age, underscoring that the critical gender distinction lies within the realm of social roles and cohort influences (Robb, Small, & Haley, 2008).

Marital Status, Life Events and Depressive Symptoms

Marital status in general and widowhood, in particular, have been the focus of many studies examining elder health outcomes. U.S.-based research indicates that married men tend to have higher educational attainment, higher incomes and lower depressive symptoms than unmarried men (Carr, 2004; Lee & DeMaris, 2007; van Grootheest, Beekman, van Groenou, & Deeg, 1999). However, never-married women tend to be more educated and command higher salaries than married women. The combination of socioeconomic stressors and pressure to conform to the spousal role may exacerbate female depressive symptoms (St. John & Montgomery, 2009).

U.S.-based research on marital status transitions provides considerable evidence for the adverse effect of widowhood on men (Lee, DeMaris, Bavin, & Sullivan, 2001; Lee & Demaris, 2007). Men may experience sharper increases in depressive symptoms than women as a result of having relatively fewer symptoms prior to the death of their spouses. On the other hand, women may adapt better to widowhood than men or have more supports for overcoming depression over time (van Grootheest et al., 1999). However, recovery from widowhood and experiencing the benefits of singlehood relate to the extent that the bereaved were emotionally dependent on their spouses (Carr, 2004).

The Japan-focused literature also discusses widowhood as particularly detrimental to men (Raymo, Kikuzawa, Liang, & Kobayashi, 2008), highlighting men's weak social networks outside of the workplace and the prominence of the parental role in a society where coresidence remains the norm, despite declines in multigenerational households (Ogawa & Retherford, 1993). On the other hand, in contrast to the United States, Japanese social norms may not emphasize maintaining multiple social roles outside of the immediate family (Kikuzawa, 2006). Widowhood, divorce and childlessness might prove doubly harmful to elder well-being in Japan

as opposed to the U.S., since American elders may be obligated to maintain more extensive social networks outside of the family.

Although life events outside of widowhood do not differ significantly across elder age groups, the "oldest-old" have had time to experience more positive events, such as the birth of a child in the family (Jeon & Dunkle, 2009). Alternatively, adverse events such as the loss of relatives and friends, forced retirement, reductions in income, accidents and the onset of diseases increase (Seematter-Bagnoud, Karmaniola, & Santos-Eggimann, 2009). The availability and quality of social networks as well as economic resources act as consistent buffers against depression (Ahern & Hendryx, 2008). Community participation may play this role among Japanese women, while men have less access to similar supports (Antonucci et al., 2002).

Intergenerational Coresidence

The nature of family exchanges in Japan is determined through traditional notions of filial piety that encourage multigenerational living and stratify gender roles to a greater extent than in the United States (Brinton, 1988; Nonoyama, 2000; Therborn, 2004). Although spouses are the primary means of social support for elders in both nations, adult children may play a larger role in substituting for deceased parents in Japan (Sugisawa, 2002). Isolation, in terms of the absence of support, may be exacerbated by widowhood, childlessness, living alone, urban residency, and lack of community contacts (Ha et al., 2006; Sugisawa, 2002). Consequently, while the potential for poor quality relationships exists in both the U.S. and Japan, one factor that distinguishes the caregiving experience in both nations is the prominent position of the daughter-in-law, or *yome*, in Japan (Nonoyama, 2000). Misa Izuhara (2000; 2002) described a younger generation of daughter-in-law caregivers as less willing to assume the "burden" of care for their

husbands' aging parents. Combative relationships in multigenerational households may also be interpreted in terms of mastery, household management and control. The transfer of property to eldest sons, and in some cases daughters, implies an exchange for caregiving in late life that younger Japanese, in particular daughters-in-law, may not be willing to provide (Traphagan, 2003).

Hypotheses, Data and Measures

Hypotheses

The past literature states that gender differences in depressive symptoms are pervasive across cultures due to differential socialization and structural inequalities (Mirowsky & Ross 1992; Mirowsky, 1996). Although women report more depressive symptoms in general, the gap may close as men experience transitions to retirement, disability and widowhood (Barefoot et al., 2001; Barry et al., 2009). Taking a life course perspective, there should be distinctions in the number of symptoms reported by the "young-old" and the "oldest-old" (Choi & Kim, 2000; Yang, 2007). However an aging effect is better explained by the onset of disability and disease as well as the disparate impact of life transitions on women and men. Declines in physical functioning and increases in chronic illnesses should also exhibit a positive relationship with depressive symptoms in general. The most prominent differences between genders and cultures are centered on household structure and support relationships. Receiving instrumental support from children should correlate with depressive symptoms among Japanese women when compounded by coresidence (Izuhara, 2000; 2002; Traphagan, 2003).

The following four hypotheses have emerged directly from the literature:

Hypothesis 1. Within-individual CES-D scores should increase between Times 1 and 2. The aggregate gender gap in depressive symptoms persists across waves, with women reporting more symptoms than men. However, the gap also narrows due to problems associated with somatic health, retirement and marital dissolution among men.

Hypothesis 2. Changes in marital status and income will be associated with changes in depressive symptoms in Japan. Coresidence with adult children protects Japanese men from depressive symptoms. In the US, changes in marital status, income and employment status are correlated with changes in depressive symptoms among men and women.

Hypothesis 3. Changes in ADLs and chronic conditions correlate with changes in depressive symptoms.

Hypothesis 4. Transitions to receiving instrumental support are associated with increased depressive symptoms among Japanese women who coreside, while the opposite is true for Japanese men and U.S. elders. In the United States all transitions to receiving support should be associated with reduced depressive symptoms, regardless of gender and coresidence status.

Datasets

The data used in the analyses were provided by the Health and Retirement Study (HRS) and the Nihon University Japanese Longitudinal Study of Aging (NUJLSOA). Both surveys contain items concerning somatic health, mental health, health care, household structure, exchanges, social networks and housing.

"The HRS (Health and Retirement Study) is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan" (Health and Retirement Study, 2011). The HRS has been administered bi-annually since 1992. The sample represents approximately 22,000 respondents aged 50 and over. Since the survey oversamples minority populations by race, geographic region and age, weights have been generated to match U.S. Census figures. 1998 was chosen as the baseline for this study since it roughly coincides with the implementation of the NUJLSOA.

The NUJLSOA (Nihon University Center for Information Networking, 2011) is a nationally-representative survey, comprised of five waves that were conducted between 1999 and

2009 from face-to-face interviews. The first two waves, administered in 1999 and 2001, are available for public use. 4997 Japanese citizens aged 65 years and over responded to the baseline survey. Weights were developed to account for the oversampling of respondents aged 75 years old and over.

Prior to analyses, proxies, respondents under 65 (HRS) and respondents who did not answer at least one item of the Center for Epidemiologic Studies Depression Scale were dropped from the samples. Then survey weights were adjusted and the survey design was specified using STATA 11 software. The final sample sizes were 3316 in the NUJLSOA and 7852 in the HRS.

Measures

Dependent Variables

Depressive Symptoms—The Center for Epidemiological Studies Depression (CES-D) scale (Radloff, 1977) is the dependent variable for this investigation. The HRS used the 8-item version of the scale, while the NUJLSOA employed an 11-item scale. Shortened versions of the CES-D have been found to be valid and reliable in the United States and Japan (Kohout, Berkman, Evans, & Cornoni-Huntley, 1993, Shikano, Kitamura, & Asai, 1985; Yatomi, Liang, Krause, & Akiyama, 1993).

The NUJLSOA version of the CES-D coded responses as 1 "rarely," 2 "sometimes," and 3 "often." However, the HRS version collapsed responses into two categories, signifying affirmation or disavowal of depressive symptoms (0=no, 1=yes). All items were summed after reverse-coding positive affect items so that higher values indicated increased depressive symptoms. Chronbach's alpha tests revealed that both scales displayed moderate to high reliability (Baseline HRS $\alpha = 0.74$; Baseline NUJLSOA $\alpha = 0.74$).

Independent Variables

Dichotomous Depression— Radloff (1977) and Shima et al. (1985) have designated 16 for the United States and 17 for Japan as reliable thresholds on the 20-item scale. A score of 7 on the 11-item scale and 4 on the 8-item scale were applied as thresholds to generate a dichotomous depression variable (0=few/no depressive symptoms, 1=depression) according to survey documentation (Yokoyama et al., 2008; Steffick, 2000). This variable was used to compare depressed and non-depressed respondents using independent samples T-tests.

Social Support—The NUJLSOA analyses distinguished between coresiding sons and daughters in order to capture the potential protections and conflicts associated with parent/child and mother/daughter-in-law relationships (0=did not coreside with daughter/son, 1=coresided with daughter/son). Since the coresiding population in the HRS was small (15 percent), coresidence with adult children was measured in the HRS analyses as with any children (0=did not coreside with children, 1=coresided with children).

Support received from children and their spouses was dichotomized as instrumental and emotional support within the NUJLSOA analyses (0=did not receive instrumental/emotional support, 1=received instrumental/emotional support). The NUJLSOA emotional support item indicated that a respondent received advice or companionship from their children. However, there were no measures of emotional support in the HRS. In the NUJLSOA, positive responses to items that described children's help with everyday activities, including transportation, food preparation, housework, shopping and finances, were used to generate the instrumental support variable. In the HRS, a helper identification variable was matched with sequential items concerning the presence of ADLs and IADLs in generating the instrumental support variable.

In the NUJLSOA, support provision was conceptualized as a dichotomous variable representing help given to children and their spouses with finances, childcare, housework, meals and other activities. However, in the HRS one item covering a range of possible support activities, such as helping pay bills, providing medical care, child care, schooling and housing, was used to generate the dichotomous variable (0=did not provide support, 1=provided support).

All models controlled for marital status (0=married, 1=divorced/widowed/never married) and a variable capturing household size was generated for both the NUJLSOA and HRS to account for available caregivers. Next, a measure of community contact was created for both surveys. In the HRS, community contact implied frequency of interactions with friends and neighbors (1=Almost Never; 3=Monthly; 6=Daily). The NUJLSLOA variable was a summary scale of group memberships (range: 0-11).

Finally, the NUJLSOA models controlled for urban residence (0=rural resident, 1=metropolitan area resident) since it has been discussed as an indicator of alienation within the Japanese population (Sugisawa et al., 2002; Tanaka & Johnson, 2010). A comparable variable was not generated for the American data since urbanicity has not been described as a predictor of elder isolation.

Somatic Health —Health problems were captured by items that described difficulties with activities of daily living (ADLs), the presence of chronic conditions and self-reported health. Within the NUJLSOA, seven items reported ADL difficulties, including bathing, using the bathroom, dressing, eating, standing up from chairs and getting out of bed, walking around the house and going outside. Standing up from chairs and getting out of bed were separated in the HRS. Summary scales were generated for both surveys (NUJLSOA range=0-7; HRS range=0-8). Chronic conditions were also summarized as scales. The HRS scale consisted of 13 items that

included high blood pressure, diabetes, cancer, lung disease, heart conditions, heart attacks, angina, congestive heart disease, strokes, arthritis, broken bones, incontinence and localized pain (range=0-13). The NUJLSOA scale collapsed heart disease into two categories and added cerebrovascular ailments, dementia, digestive illnesses, ailments of the liver/gallbladder and osteoporosis (range=0-16). Both the NUJLSOA and HRS models controlled for self-reported health. The variable was coded so that higher scores indicated better self-assessment of health (1=poor, 2=fair, 3=good, 4=very good, 5=excellent). Finally, national elder care services underwent an overhaul in Japan in 2001, suggesting comparisons between accessing services in 1999 versus 2001. The survey items themselves were not directly comparable due to changes in item formatting, and were not added to the regression models. However, summary indices of items capturing access to long term care services were generated for descriptive comparisons (1999 range=0-6; 2001 range=0-10).

Demographic Variables—Demographic variables analyzed included age (baseline NUJLSOA: ages 65-99; baseline HRS: ages 65-105), educational attainment, income, employment status and home ownership. Education was measured in both surveys by degree attainment (NUJLSOA: 1=junior high, 2=high school, 3=junior college, 4=university, 5=graduate school; HRS: 1=high school; 2=junior college; 3=university; 4=master's degree; 5=Ph.D./M.D./professional degree). Since income was measured as continuous in the HRS and categorical in the NUJLSOA, the variable was mean centered for the HRS analyses (range in dollars= 0-330,000) and adjusted to mid-points in the NUJLSOA (13 intervals in Yen: 1=250,000, 2=750,000, 13=15,000,000). Next, both the HRS and NUJLSOA analyses included employment status (0=unemployed; 1=employed). Homeownership was also added to the analyses as an indicator of wealth and mastery (0=not home owner; 1=home owner).

Finally, race was dichotomized to mark status as black/African-American (0=not Black/African American, 1=Black/African American) for the HRS descriptive analyses, based on previous research that has described disparate health outcomes among U.S. residents of African descent (Lincoln and Takeuchi 2010; Miller et al. 2004). The sampling frame did not distinguish respondents who were also Hispanic/Latino. Racial and ethnic identification items were not available in the NUJLSOA.

Methods: Statistical Analyses

Independent samples T-tests by survey year and gender provided the first indications of differences between the U.S. and the Japanese sample means. The next stage of analyses involved fitting a series of change score models for separate male and female samples. The within-gender regression models (Tables 3 and 6) have been presented in lieu of combined sample models, due to their improved capacity for displaying within-individual changes between survey waves. These models were adjusted with interactions capturing coresidence, support and somatic health. The independent variables capturing race, gender and educational attainment were dropped from the change score models due to time invariance.

NUJLSOA Results

Table 1 presents significant changes in the NUJLSOA sample from Time 1 to Time 2. The average Japanese respondent was female, urban, married and about 75 years old by Time 2. Most were homeowners, living in three-person households. About one third of the sample coresided with an adult child and received some form of support from an adult child.

[Insert Table 1 about here]

Despite the significant increase in dichotomous depression between Times 1 and 2, the slight rise in continuous CES-D scores was not significant. These statistics convey that there were a few outliers reporting large enough increases on the CES-D to fall beyond the depression threshold by Time 2, but that most respondents did not experience much change.

As expected, there was a significant increase in respondents who transitioned to being separated, divorced or widowed. Significant decreases in mean employment and income may also have had an impact on elders' responses to CES-D items. Mean income decreased by about 260,000 Yen (a difference of approximately 3158 dollars in 2011). While these data do not reveal whether this was a result of retirement or unemployment, there may be a relationship between fewer economic resources, widowhood and the significant increase in receipt of instrumental and emotional support from children and their spouses.

As anticipated, there were increases in problems with ADLs. Counter-intuitively, the sample reported fewer chronic conditions at Time 2. Next, the higher mean score on the LTCI at Wave 2 may indicate that the government initiative to increase accessibility to the public care program was successful. However, since the long term care system experienced an overhaul between waves, the indices are not directly comparable and for this reason a T-test was not performed.

Turning to an examination of bivariate gender differences, the following table stacks means from Time 1 on scores from Time 2. As opposed to the descriptive statistics presented in Table 1, these data provide full support for Hypothesis 1. The gender gap in depressive symptoms not only persists into 2001, with women reporting higher mean CES-D scores than men, but the gap also closes slightly as men experienced a larger increment in CES-D scores than women.

[Insert Table 2 about here]

Men continued to report more income than women and were more likely to be employed. There was also a noteworthy distinction in either wave between men and women who were not married, with women being far more likely to fall into this category. It follows that women were more likely to coreside with sons and receive support from both children than men.

Finally, subjective health remained slightly better among men.

Regression Analyses

Table 3 displays a series of models that regressed the change in depressive symptoms variable on changes in key independent variables, employing fixed-effects methods. The variables race, gender and educational attainment were excluded due to time invariance.

[Insert Table 3 about here]

The change score models revealed that age (b=0.13; B=0.05) was positively associated with the change in depressive symptoms among men. Although this was a weak association, it may be an example of a cohort effect among Japanese males since the entire sample aged about two years between waves (Riley, 1986). In other words, getting older appears to have had a more significant effect on men aged 65 and over than women aged 65 and over.

These models also revealed some important gender differences within the NUJLSOA sample. Supporting Hypothesis 2, among Japanese men, increased income was associated with very slight reductions in depressive symptoms. Employment was associated with heightened depressive symptoms among men, but only after adjusting for the coresidence interaction term. This result seems to suggest financial strains within multigenerational households. More importantly, the variable describing changes in marital status exhibited a very strong association

with the change in depressive symptoms among men, but not women (Model II: b=1.13; B=0.48). This was predicted by Hypothesis 2 and is perhaps the best evidence for the buffering effect of marriage on men's mental health.

None of the child/parent support relationships proved significant, indicating few major changes in caregiving relationships over the course of two years. However, another gender difference was captured through increases in community contact (Model II b=-0.15; B=-0.06), which had a negative correlation with the change in depressive symptoms among men, but not women.

The health-related variables provided mixed support for Hypothesis 3, which stated that ADLs and chronic conditions should be correlated with increased depressive symptoms among men and women. Changes in ADLs were not significant among men or women. However, despite the reductions in means evidenced at the univariate and bivariate levels, chronic conditions displayed a positive association (Model II: b=0.22; B=0.08) with changes in depressive symptoms among women, but not men. The fact that the relationship was demonstrated among women may reflect the greater prevalence of chronic conditions within the female sample (Table 2). As hypothesized, better subjective health was associated with reductions in depressive symptoms for both men and women.

Finally, there was a strong association between the interaction term describing changes in coresidence with daughters and changes in ADLs (b=-0.98; B=-0.40). Since very few elders moved into children's homes between waves, reductions in CES-D scores were related to increased prevalence of ADLs and the intricacies of the mother/daughter support relationship. This result opposes the assumptions made by Hypothesis 4 that there would be problematic relationships in Japanese households between elder women and coresiding children (in particular

daughters-in-law). However, the result also implies that elder Japanese women with functional difficulties may have self-selected into their daughters households.

HRS Results

Table 4 presents longitudinal, descriptive statistics for the HRS sample. The typical respondent was female, did not identify as black or African American and was about 76 years old by Time 2. Almost half of the sample responded that they were not married. Most were unemployed, high school graduates and homeowners who earned about $37,800 per year taking into consideration pensions, social security and investments before taxes.

[Insert Table 4 about here]

In contrast to the NUJLSOA sample, mean CES-D scores in the HRS exhibited significant increases from Time 1 to Time 2. This result partially supports Hypothesis 1, which predicted higher CES-D scores and a persistent gender gap.

The demographic and household variables presented few unexpected changes across survey waves. It is worth noting that while most of the sample did not coreside with a child, about 40 percent of all respondents provided support for their children. The slight decrease in the mean at Time 2 represents a significant difference between waves. Conversely, only a small percentage of respondents indicated receiving support from children and there were no significant differences between waves. There also were fewer married respondents at Time 2 and statistically significant decreases in employment and homeownership that could play a role as stressors that worsen mental health. Among the health variables, there were significant increases in mean chronic conditions and ADLs. Seeming to contradict this fact, respondents continued to rate their health as average, with no significant changes between waves.

Supporting the mean comparisons across waves and providing evidence for Hypothesis 1, Table 5 demonstrates that the gender gap in depressive symptoms persisted across waves. However, contradicting Hypothesis 1, there was no evidence for reductions in the gap. Both men and women reported slightly higher CES-D scores.

Overall, these data express that the female sample was more vulnerable than the male sample since across two survey waves women were less likely to be married, earned less income, were less likely to be employed, own a home, were less educated and slightly older than men. [Insert Table 5 about here]

It is worth noting that men reported more transfers to children in both survey years. This may reflect having more disposable income. Although representing less than ten percent of the sample, there was also a notable gender difference in terms of receipt of instrumental support, with more women indicating this exchange. Women also reported more problems with physical functioning at Times 1 and 2, although both men and women experienced increases between waves, as expected. Finally, as was the case in the Japanese samples, men self-rated their health as slightly better than women.

Regression Analyses

Table 6 displays several models examining changes in the HRS sample over the course of two years. Supporting Hypothesis 2, marital status (Men, Model II: b=0.97; B=0.25, Women, Model II: b=0.72; B=0.17) demonstrated a consistent, positive correlation with the change in depressive symptoms. These also represented the strongest significant relationships in both samples. Since marital status is a dichotomous variable, the coefficient may be interpreted as a marital disruption between waves. Respondents who experienced a change in marital status

reported increased depressive symptoms. None of the SES, household or support variables were significant.

[Insert Table 6 about here]

In contrast, changes in the health variables were significant across models in the expected direction. In further confirmation of the hypotheses, changes in ADLs and chronic conditions were associated with higher CES-D scores, while better subjective health demonstrated a negative correlation with depressive symptoms. There was no evidence of any gender differences in respect to the somatic health variables.

Overall, the HRS change score models demonstrated remarkable similarity among the factors associated with depressive symptoms in the male and female samples. In respect to life transitions, worsening somatic health, poor self-rated health and the dissolution of marriage predicted heightened depressive symptoms regardless of gender. Finally, since there was almost no change in coresidence between survey waves, transitions to living with children were probably less important than how baseline coresidence would have interacted with Time 2 support and somatic health.

Discussion

The results confirmed that the gender gap in depressive symptoms persisted across waves, although increases in aggregate CES-D scores were slight. The slight decrement in the gap by Time 2 in the NUJLSOA lends support to Hypothesis 1. Furthermore, the change score models provided evidence that the social support and coresidence variables were critical for understanding gender differences in Japan. There was little evidence of their importance in the HRS analyses. This may be attributed to cultural predispositions towards multigenerational

living and filial piety in Japan (Nonoyama 2000). First, marital status transitions were significant stressors among Japanese men as expected. There was no support for the positive effect of conflict between mothers and daughters-in-law on depressive symptoms. However, the change score models revealed a buffering effect of coresidence with daughters on elder women with ADLs. The fact that these were not households headed by eldest sons suggests a break with traditional family relationships (Takagi & Silverstein 2006). They may also have been families without sons or "boomerang" households in which children moved back into their parents' homes after an extended absence upon reaching adulthood (Takagi et al., 2007). Relationships in "boomerang" households are more at risk for stress, conflict, anxiety and depression. Functional limitations requiring care would be compounded within households where the elder parent expects support to come from children, but the children are ambivalent about traditional obligations. At the same time, this may not be the case when daughters are preferred over sons and daughters-in-law as caregivers.

Next, an apparent cohort effect was demonstrated in the NUJLSOA, but not in the HRS. The positive association between advancing age and the CES-D among Japanese men provides some evidence for perspectives that have posited reductions in the gender gap in depressive symptoms at advanced ages due to role shifts experienced by men (Barefoot et al., 2001). There was no support for research that has found that younger age groups report increased depressive symptoms (Choi & Kim, 2000; Yang, 2007). However, the fixed-effects techniques used in this study rendered a cohort-focused analysis impossible.

There were a few cross-national differences in respect to the demographic and SES variables that predicted depressive symptoms that merit attention. As posited in Hypothesis 2, increased income and employment status were correlated with reductions in depressive

symptoms among Japanese men. Observed in light of the fact that incomes declined between Time 1 and Time 2 (Table 1), the change score models revealed some evidence for gender stratification, since men would have been in better positions for renewed sources of income. Income was a negligible factor in the U.S. analyses.

The longitudinal analyses also highlighted some factors across cultures that for the most part support this paper's hypotheses. In support of Hypothesis 2, married individuals were less at risk for depression than unmarried individuals. In support of Hypothesis 3, physical functioning measures were generally predictive of CES-D scores across the analyses among both men and women. However, there was one salient gender difference between Japan and the United States in regard to somatic health. In Japan, increases in chronic conditions between waves were associated with higher CES-D scores among women. Perhaps this can be attributed to the higher mean age of the female sample. In the U.S. all changes in somatic health measures were associated with the CES-D among men and women.

Rounding off the discussion of cross-cultural similarities and differences in regard to self reports, it is interesting to note that subjective health was perhaps the most consistent correlate of depressive symptoms in both Japan and the United States. It came as no surprise that better subjective health was associated with reduced symptoms, regardless of gender and nationality. This fact argues for the inclusion of such measures in all cross-national research. It is also important to point out that subjective health scores were average to good in both samples despite increases in aggregate ADLs and chronic conditions among Americans and increases in ADLs among Japanese (Tables 1 and 4).

Conclusions

The longitudinal results confirmed the importance of a gendered analysis with respect to elder health outcomes. There was a prominent and significant gender gap in depressive symptoms, as captured by the CES-D, in both nations. Furthermore, as displayed in Table 2, Japanese men reported sharper increases in depressive symptoms between Times 1 and 2, lessening the gap. The HRS sample did not experience decrements in the gender gap in depressive symptoms. The correlates of depressive symptoms in the U.S. were remarkably similar for men and women, highlighting the importance of spouses as buffers and underscoring stressors related to functional limitations.

The analyses provided some evidence for greater gender stratification in Japan. One prominent example was the detrimental effect of marital status transitions on the NUJLSOA male sample. Findings surrounding the buffering effect of income on depressive symptoms among Japanese males also confirmed notions that twentieth century Japanese culture was based upon a fairly rigid gender hierarchy (Brinton 1988). However, it is critical to keep in mind that while the gender gap in depressive symptoms may be reduced among the oldest age groups, partly due to weakened social supports on the part of men, women of the eldest generation continue to experience a host of disadvantages in terms of access to wealth and institutions that guarantee financial well-being.

Unexpectedly, coresiding daughters may play a role in protecting elder Japanese women with functional limitations from depressive symptoms (Table 3). This result reinforces claims by researchers that there is more variety in Japanese household arrangements than in the past (Ogawa and Retherford 1993). The traditional intergenerational home in which the eldest son inherits property and the daughter-in-law assumes caretaking responsibilities is still present

(Nonoyama 2000; Therborn 2004). However, these results seem to argue for increasing flexibility in terms of individual preference and coresidence in times of need.

Finally, regarding the validity of cross-cultural statements on elder mental health, this study is limited by the survey instruments and their available measures. Further research on between-group differences in response to CES-D items in both nations is needed. Incorporating quality of life, affective and attitudinal measures into the study would provide richer explanations for the prominent, adverse effect of transitions to singlehood among Japanese men and the buffering effect of coresidence with daughters on Japanese women. Items that capture the quality of family relationships could clarify whether increased depressive symptoms among elders coresiding with children can be attributed to intergenerational conflict and loss of environmental mastery.

The results of this study leave little doubt about the significance of the relationship between somatic health, subjective health and depressive symptoms. However, interactions between coresidence, somatic health and support imply a moderating effect of informal support that is driven by cultural expectations surrounding family roles. The significance of the interaction term capturing coresidence with daughters and having ADLs suggests that traditional family obligations had been triggered by life transitions such as widowhood, retirement and hospitalization due to worsening health. This statement may have cross-national applications. The world's post-industrial societies can expect lowered fertility and social welfare insolvency to result in the increasing importance of multigenerational ties (Bengtson 2001). It is critical that future policies designed to address these limitations are gender-sensitized towards the often disparate concerns of aging men and women.

REFERENCES

Ahearn, M. M., & Hendryx, M. (2008). Community participation and the emergence of late life depressive symptoms: Differences between women and men. *Journal of Women's Health*, 17(9), 1463-1470.

Antonucci, T. C., Lansford, J. E., Akiyama, H., Smith, J., Baltes, M. M., Takahashi, K., Fuhrer, R., & Dartigues, J.-F. (2002). Differences between men and women in social relations, resource deficits, and depressive symptomatology during later life in four nations. *Journal of Social Issues*, 58(4), 767-783.

Barefoot, J. C., Mortensen, E. L., Helms, M. J., Avlund, K., & Schroll, M. (2001). A longitudinal study of gender differences in depressive symptoms from age 50 to 80. *Psychology and Aging*, 16(2), 342-345.

Barry, L. C., Allore, H. G., Bruce, M. L., & Gill, T. M. (2009). Longitudinal association between depressive symptoms and disability burden among older persons. *Journal of Gerontology: Medical Sciences*, 64A (12), 1325-1332.

Bengtson, V. L. (2001). Beyond the nuclear family: The increasing importance of multigenerational bonds. *Journal of Marriage and the Family*, 63(Feb), 1-16.

Brinton, M. C. (1988). The social-institutional bases of gender stratification: Japan as an illustrative case. *The American Journal of Sociology*, 94, 300-34.

Bruce, M. L., Seeman, T. E., Merril, S. S., & Blazer, D. G. (1994). The impact of depressive symptomatology on physical disability: MacArthur studies of successful aging. *American Journal of Public Health*, 84(11), 1796-1799.

Carr, D. (2004). Gender, preloss marital dependence, and older adults' adjustment to widowhood. *Journal of Marriage and the Family*, 66(1), 220-235.

Choi, N. G., & Kim, J. S. (2007). Age group differences in depressive symptoms among older adults with functional impairments. *Health and Social Work*, 32(3), 177-188.

Fukukawa, Y., Nakashima, C., Tsuboi, S., Niino, N., Ando, F., Kosugi, S., & Shimokata, H. (2004). The impact of health problems on depression and activities in middle-aged and older adults: age and social interactions as moderators. *Journals of Gerontology: Psychological Sciences*, 59B (1), 19-26.

Ha, J.-H., Carr, D., Utz, R. L., & Randolph Nesse. (2006). Older adults' perceptions of intergenerational support after widowhood: How do men and women differ? *Journal of Family Issues*, 27, 3-30.

Health and Retirement Study, public use dataset. (2011). Produced and distributed by the University of Michigan with funding from the National Institute on Aging (grant number NIA U101AG009740). Anne Arbor, MI. Retrieved 2011, from (http://hrsonline.isr.umich.edu).

Izuhara, M. (2000). Changing family tradition: Housing choices and constraints for older people in Japan. *Housing Studies*, 15, 89-110.

_____. (2002). Care and inheritance: Japanese and English perspectives on the 'generational contract'. *Ageing and Society*, 22, 61-77.

Jeon, H.-S., & Dunkle, R. E. (2009). Stress and depression among the oldest old: A longitudinal analysis. *Research on Aging*, 31(6), 661-687.

Johnson, D. (2005). Two-wave panel analysis: Comparing statistical methods for studying the effects of transitions. *Journal of Marriage and the Family*, 67, 1061-1075.

Kalmijn, M. (2007). Gender differences in the effects of divorce, widowhood and remarriage

of intergenerational support: Does marriage protect fathers? *Social Forces*, 85(3), 1079-1104.

Katsumata, Y., Arai, A., Ishida, K., Tomimori, M., Denda, K., & Tamashiro, H. (2005). Gender differences in the contributions of risk factors to depressive symptoms among the elderly persons dwelling in a community, Japan. *International Journal of Geriatric Psychiatry*, 20, 1084-1089.

Kikuzawa, S. (2006). Multiple roles and mental health in cross-cultural perspective: The elderly in the United States and Japan. *Journal of Health and Social Behavior*, 47, 62-76.

Kohout, F. J., Berkman, L.F., Evans, D., A., & Cornoni-Huntley, J. (1993). Two shorter forms of the CES-D depression symptoms index. *Journal of Aging and Health,* 5(2), 179-193.

Koizumi, Y., Awata, S., Kuriyama, S., Ohmori, K., Hozawa, A., Seki, T., Matsuoka, H., & Tsuji, I. (2005). Association between social support and depression status in the elderly: Results of a 1-year community-based prospective cohort study in Japan. *Psychiatry and Neurosciences*, *59, 563-569.*

Kondo, N., Kazama, M., Suzuki, K., & Yamagata, Z. 2008. Impact of mental health on daily living activities of Japanese elderly. *Preventive Medicine*, 46, 457-462.

Kuroda, A., Kanda, T., & Sakai, F. (2006). Gender differences in health-related quality of life among stroke patients. *Geriatrics and Gerontology International*, 6, 165-173.

Larsen, K., Schroll, M., & Avlund, K. (2006). Depressive symptomatology at age 75 and subsequent use of health and social services. *Archives of Gerontology and Geriatrics*, 42, 125-139.

Lee, G. R., DeMaris, A., Bavin, S., & Sullivan, R. (2001). Gender differences in the depressive effect of widowhood in later life. *Journal of Gerontology: Social Sciences* 56B (1):56-61.

Lee, G. R., & DeMaris, A. (2007). Widowhood, gender, and depression: A longitudinal analysis. *Research on Aging*, 29(2), 56-72.

Lincoln, K. D., & Takeuchi, D. T. (2010). Variation in the trajectories of depressive symptoms: Results from the Americans' Changing Lives Study. *Biodemography and Social Biology*, 56(1), 24-41.

Mehta, M., Whyte, E., Lenze, E., Hardy, S, Roumani, Y., Subashan, P., Huang, W., & Studenski, S. (2008). Depressive symptoms in Late Life: Associations with apathy, resilience and disability vary between young-old and old-old. *International Journal of Geriatric Psychiatry*, 23, 238-243.

Miller, D. K., Malmstrom, T.K., Joshi, S., Andresen, E. M., Moreley, J. E., & Wolinsky, F.D. (2004). Clinically relevant levels of depressive symptoms in community-dwelling middle-aged African Americans. *Journal of the American Geriatrics Society*, 52, 741-748.

Mirowsky, J. (1996). Age and the gender gap in depression. *Journal of Health and Social Behavior*, 37(4), 362-380.

Mirowsky, J., & Ross, C. E. (1992). Age and depression. *Journal of Health and Social Behavior*, 33(3), 187-205.

Moen, P., & Chermack, K. (2005). Gender disparities in Health: Strategic selection, careers, and cycles of control. *Journals of Gerontology: Social Sciences*, 60B (Special Issue II), 99-108.

Nihon University Center for Information Networking. (2011). *Nihon University Japanese Longitudinal Study of Aging (NUJLSOA)* [MRDF]. Tokorozawa, Japan: Nihon

University Center for Information Networking [distributor]. Retrieved 2011: (http://www.nihonu.ac.jp/affiliate/institute/information_networking/nujlsoa/ind x.html).

Nonoyama, H. (2000). The family and family sociology in Japan. *The American Sociologist*, 31(3), 27-41.

Ogawa, N., & Retherford, R. D. (1993). Care of the elderly in Japan: Changing norms and expectations. *Journal of Marriage and the Family*, 55, 585-597.

Penninx, B., Leveille, S., Ferrucci, L., van Eijk, J. T. M., & J. M. Guralnik. (1999). Exploring the effect of depression on physical disability: Longitudinal evidence from the established populations for epidemiologic studies of the elderly. *American Journal of Public Health*, 89(9), 1346-1352.

Radloff, L., S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385-401.

Raymo, J. M., Kikuzawa, S., Liang, J., & Kobayashi, E. (2008). Family structure and well-being at older ages in Japan. *Journal of Population Research*, 25(3), 379-400.

Riley, M. W. (1987). On the significance of age in sociology. *American Sociological Review*, 52, 1-14.

Robb, C., Small, B., & Haley, W. E. (2008). Gender differences in coping with functional disability in older married couples: The role of personality and social resources. *Aging and Mental Health*, 12(4), 423-433.

Scott, K.M., Von Korff, M., Alonso, J., Angermeyer, M., Bromet, E. J., Bruffaerts, R., de Girolamo, G., de Graaf, R., Fernandez, A., Gureje, O., et al. Age patterns in the prevalence of DSM-IV depressive/anxiety disorders with and without physical co-morbidity. *Psychological Medicine*, 38(11), 1659-1669.

Seematter-Bagnoud, L., Karmaniola, A., & Santos-Eggimann, B. (2009). Adverse life events among community-dwelling persons aged 65-70 years: gender differences in occurrence and perceived psychological consequences. *Social Psychiatry and Psychiatric Epidemiology*, 45, 9-16.

Shima, S., Shikano, T., Kitamura, T., & Asai, M. (1985). Atarasii yokuutsusei jiko youka shakudo no tuite [New self-rating scales for depression]. *Seishin Igaku* [Clinical Psychiatry], 27, 717-723.

Steffick, D.E. (2000). *Documentation of affective functioning measures in the Health and Retirement Study (HRS/AHEAD Documentation Report NO. DR-005)*. Anne Arbro, MI: University of Michigan. Retrieved 2011, from (http://hrslonline.isr.umich.edu/sitedocs/userg/dr-005.pf).

St. John, P. D., Montgomery, P. R. (2009). Marital status, partner satisfaction, and depressive symptoms in older men and women. *The Canadian Journal of Psychiatry*, 54(7), 487-492.

Sugisawa, H., Shibata, H., Hougham, G. W., Sugihara, Y., & Liang, J. (2002). The impact of social ties on depressive symptoms in U.S. and Japanese elderly. *Journal of Social Issues*, 58(4):785-804.

Suthers, K., Saito, Y., & Crimmins, E. (2003). Emotional well-being among older persons: A comparative analysis of the 70+ population in Japan and the United States. In M. J. Sirgy, D. Rahtz and A. Samli (Eds.), in *Advances in Quality-of-Life Theory and Research* (pp.41-50). Boston: Kluwer Academic Publishers.

Takagi, E., & Silverstein, M. (2006). Intergenerational coresidence of the Japanese elderly: Are

cultural norms proactive or reactive?" *Research on Aging*, 28(4), 473-492.

Takagi, E., Silverstein, M., Crimmins, E. (2007). Intergenerational coresidence of older adults in Japan: Conditions for cultural plasticity. *The Journals of Gerontology: Series B Social Sciences*, 62(5), 330-339.

Tanaka, H., Yosiaki, S., Suzuki, S., Nakazawa, M., & Koyama, H. (2011). Health status and lifestyle factors as predictors of depression in middle-aged and elderly Japanese: A seven-year follow-up of the Komo-Ise cohort study. *BMC Psychiatry*, 11-20.

Tanaka, K., & Johnson, N. E. (2010). Social integration and healthy aging in Japan: How gender and rurality matter. *The Journal of Cross Cultural Gerontology*, 25, 199-216.

Therborn, G. (2004). *Between sex and power: Family in the world, 1900-2000.* New York: Routledge.

Traphagan, J. W. (2003). Contesting coresidence: Women, in-laws and health care in rural Japan. In J. Traphagan (Ed), *Demographic Change and the Family in Japan's Aging Society* (pp. 203-226). Albany, New York: State University of New York Press.

van Grootheest, D.S., Beekman, A. T. F., Broese van Groenou, M. I., & Deeg, D. J. H. (1999). Sex Differences in Depression after Widowhood. Do Men Suffer More? *Social Psychiatry & Psychiatric Epidemiology*, 34(7), 391-398.

Yang, Y. (2006). How does functional disability affect depressive symptoms in late life? The role of perceived social support and psychological resources. *Journal of Health and Social Behavior*, 47, 355-372.

_____. (2007). Is old age depressing? Growth trajectories and cohort variations in late-life depression. *Journal of Health and Social Behavior*, 48(1), 16-32.

Yatomi, N., Liang J., Krause, N., & Akiyama, H. (1993). CES-D niyoru nihonroujin Noyokuutsushoujou no sokutei [Cross-cultural differences in depressive symptoms among the aged: Comparison of the factor structure of the CES-D]. *Shakai Ronengaku [Social Gerontology]*, 37, 37-47.

Yokoyama, E., Kaneita, Y., Saito, Y., Uchiyama, M., Matsuzaki, Y., Tamaki,T., Munezawa, T., & Ohida, T. (2008). Cut-off point for the 11-item shorter form of the CES-D depression scale. *Nihon University Journal of Medicine*, 50, 123-132.

Table 1. NUJLSOA: Characteristics of Sample at Times 1 and 2				
	Time 1 (1999)		Time 2 (2001)	
	N=3316		N=3316	
Variable	Mean	SD	Mean	SD
CES-D Index (0-22)	4.13	2.57	4.26	2.70
Dichotomous Depression[a]	0.13*	0.34	0.15	0.36
Female	0.56	0.50	0.56	0.49
Urban	0.61***	0.49	0.66	0.47
Not Married	0.34*	0.48	0.37	0.48
Income (¥ in Millions)[b]	2.91***	2.41	2.65	2.13
Employed[c]	0.29***	0.45	0.22	0.41
Educational Attainment	1.55***	0.81	1.34	0.79
Age	72.81***	5.77	74.99	5.85
Household Size	3.22	1.85	3.13	1.80
Homeowner	0.89	0.32	0.88	0.33
Coreside w/Son	0.38	0.49	0.38	0.48
Coreside w/Daughter	0.13	0.34	0.13	0.33
Transfer to Child[d]	0.35	0.48	0.36	0.48
Instrum Support from Child[e]	0.33***	0.47	0.37	0.48
Emotional Support from Child[f]	0.24***	0.43	0.29	0.45
Community Contact (Groups)	1.20	1.29	1.16	1.23
Accessed Govt Care[g]	0.26	0.87	1.57	1.49
ADLs (0-7)	0.26**	1.08	0.39	1.26

Chronic Conditions (0-16)	1.60***	1.41	1.24	1.33
Subjective Health[h]	3.19	1.09	3.15	1.06

Table 2. NUJLSOA: Gender Differences in Sample at Times 1 and 2

Time 1 (1999)	Men (N=1411)		Women (N=1905)	
Variable	Mean	SD	Mean	SD
CES-D Index (0-22)	3.88***	2.26	4.32	2.77
Dichotomous Depression	0.10***	0.30	0.16	0.37
Urban	0.61	0.48	0.60	0.49
Not Married	0.12***	0.32	0.51	0.51
Income (¥ in millions)	3.49***	2.47	2.44	2.24
Employed	0.40***	0.48	0.20	0.41
Educational Attainment	1.69***	0.96	1.44	0.63
Age	72.29***	5.53	73.22	5.89
Household Size	3.25	1.78	3.20	1.90
Homeowner	0.89	0.30	0.88	0.33
Coreside w/Son	0.34**	0.47	0.41	0.50
Coreside w/Daughter	0.12	0.32	0.14	0.35
Transfer to Child	0.34	0.47	0.36	0.48
Instrum Support from Child	0.25***	0.43	0.39	0.49
Emotional Support from Child	0.18***	0.38	0.29	0.46
Community Contact (Groups)	1.20	1.28	1.20	1.30
Accessed Govt Care	0.26	0.86	0.27	0.86
ADLs (0-7)	0.23	1.06	0.29	1.09
Chronic Conditions (0-16)	1.51**	1.29	1.68	1.49
Subjective Health	3.29***	1.09	3.12	1.08

Time 2 (2001)	Men (N=1411)		Women (N=1905)	
Variable	Mean	SD	Mean	SD
CES-D Index (0-22)	4.14*	2.47	4.35	2.89
Dichotomous Depression	0.13**	0.33	0.17	0.38
Urban	0.67	0.47	0.66	0.48

Not Married	0.14***	0.35	0.54	0.50
Income (¥ in millions)	3.26***	2.27	2.15	1.86
Employed	0.31***	0.46	0.15	0.36
Educational Attainment	1.52***	0.99	1.19	0.54
Age	74.34***	5.59	75.48	6.04
Household Size	3.18	1.74	3.10	1.85
Homeowner	0.89	0.31	0.87	0.34
Coreside w/Son	0.35**	0.47	0.40	0.49
Coreside w/Daughter	0.12	0.32	0.14	0.35
Transfer to Child	0.35	0.47	0.36	0.48
Instrum Support from Child	0.29***	0.45	0.44	0.50
Emotional Support from Child	0.22***	0.41	0.34	0.48
Community Contact (Groups)	1.20	1.26	1.13	1.22
Accessed Govt Care	1.79	1.89	1.46	1.25
ADLs (0-7)	0.31*	1.18	0.44	1.32
Chronic Conditions (0-16)	1.18*	1.27	1.28	1.38
Subjective Health	3.23***	1.09	3.08	1.05

Gender Differences Significant at *p<.05; **p<.01; ***p<.001

Table 3. NUJLSOA: Effects of Within-Gender Changes in Independent Variables on Change in CES-D

| | Men (N=1411) | | | | Women (N=1905) | | | |
| | Model I | | Model II | | Model I | | Model II | |
	b	B	b	B	b	B	b	B
Δ Age	0.13**	0.05	0.13*	0.05	0.04	0.04	0.04	0.05
Δ Marital Status	1.15*	0.49	1.13*	0.48	0.49	0.65	0.60	0.59
Δ Income	-1.12^{e-7}**	-4.03^{e-8}	-1.12^{e-7}**	-4.06^{e-8}	-2.06^{e-8}	-4.94^{e-8}	-2.83^{e-8}	-4.97^{e-8}
Δ Employment Status	0.41	0.22	0.44*	0.22	0.10	0.29	0.05	0.30
Δ Urban	0.01	0.25	0.02	0.25	-0.03	-0.24	-0.05	-0.24
Δ Household Size	0.09	0.13	0.07	0.13	0.02	0.12	0.04	0.13
Δ Coreside w/Son	-0.43	-0.49	-0.53	-0.54	-0.03	-0.54	-0.30	-0.57
Δ Coreside w/Daughter	-0.23	-0.53	-0.23	-0.61	-0.17	-0.46	0.08	0.58
Δ Transfer to Child	0.01	0.16	-0.01	-0.16	-0.21	-0.18	-0.19	-0.18
Δ Receipt Instrum Support	0.06	0.21	0.09	0.29	0.07	0.21	-0.23	-0.38
Δ Receipt Emot Support	0.08	0.23	0.13	0.23	0.05	0.22	-0.05	-0.21
Δ Community Contact	-0.16*	-0.06	-0.15*	-0.06	-3.30^{e-3}	-0.08	-0.01	-0.08

Δ ADLs	0.23	0.20	-0.10	-0.32	0.05	0.17	0.35	0.26
Δ Chronic Conditions	0.02	0.08	-0.01	-0.10	0.25***	0.06	0.22**	0.08
Δ Subjective Health	-0.22*	-0.09	-0.21*	-0.09	-0.30**	-0.09	-0.31**	-0.09
Δ Coresideson X Instrum			-0.14	-0.35			0.52	0.42
Δ Coresideson X ADLs			0.67	0.40			-0.39	-0.32
Δ Coresideson X Chronic			0.03	0.13			0.05	0.13
Δ Coresidedaught X Instrum			-0.09	-0.43			0.46	0.51
Δ Coresidedaught X ADLs			0.09	0.33			-0.98*	-0.40
Δ Coresidedaught X Chronic			0.03	0.18			-0.07	-0.18
Constant	-4.83		-4.55		1.86		2.04	
R^2 (Overall)	0.04		0.04		0.09		0.09	

*p<.05; **p<.01; ***p<.001

Table 4. HRS: Characteristics of Sample at Times 1 and 2				
	Time 1 (1998)		Time 2 (2000)	
	N=7852		N=7852	
Variable	Mean	SD	Mean	SD
CES-D Index (0-8)	1.57***	1.88	1.69	1.91
Dichotomous Depression[a]	0.15**	0.36	0.17	0.37
Female	0.61	0.49	0.61	0.49
Race (Black/African Amer)[b]	0.08	0.27	0.08	0.27
Not Married	0.45***	0.51	0.49	0.49
Income (Dollars in Thousands)	37.72	49.89	37.82	49.27
Employed	0.13***	0.34	0.10	0.30
Educational Attainment[c]	1.15	1.20	1.14	1.17
Age	73.83***	6.37	75.79	6.34
Household Size	1.32	0.78	1.32	0.76
Homeowner	0.72**	0.46	0.71	0.45
Coreside w/Children	0.15	0.36	0.15	0.35
Transfers to Child[d]	0.45***	0.50	0.41	0.49
Instrum Support Child[e]	0.04**	0.21	0.06	0.23
Community Contact[f]	3.82	1.94	3.78	1.95
ADLs (0-8)	1.07***	1.54	1.31	1.68
Chronic Conditions (0-13)	2.49***	1.79	2.71	1.80
Subjective Health[g]	3.06	1.15	3.05	1.11

*p<.05; **p<.01; ***p<.001

[a]Depressive Symptoms (Dichotomized Depression Index): 0=few symptoms, 1=acute symptoms. [b]Race: 0=Not Black/African American, 1=Black/African American. [c]Educational Attainment: 1=GED/HS, 2=Junior College, 3=University/Four Year College, 4=Master's Degree, 5=Ph.D/M.D/Professional Degree. [d]Transfers to Child: 0=did not provide instrumental support to child, 1=provided instrumental support to child. [e]Instrum Support from Child: 0=did not receive support, 1=received support. [f]Community Contact (Get together with neighbors): 1=Almost Never, 2=Yearly, 3=Monthly, 4=Every 2 Weeks, 5= Weekly, 6=Daily. [g]Subjective Health: 1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent.

Table 5. HRS: Gender Differences in Sample at Times 1 and 2

Time 1 (1998)	Men (N=3142)		Women (N=4710)	
Variable	**Mean**	**SD**	**Mean**	**SD**
CES-D Index (0-8)	1.25***	1.69	1.77	1.91
Dichotomous Depression	0.10***	0.31	0.18	0.38
Race (Black/African Amer)	0.07**	0.26	0.09	0.28
Not Married	0.26***	0.45	0.57	0.49
Income ($ in Thousands)	48.05***	62.81	31.15	37.10
Employed	0.17***	0.38	0.10	0.30
Educational Attainment	1.34***	1.39	1.03	1.02
Age	73.26***	6.09	74.18	6.35
Household Size	1.30*	0.77	1.34	0.77
Homeowner	0.75***	0.44	0.70	0.45
Coreside w/Children	0.14*	0.35	0.16	0.36
Transfers to Child	0.50***	0.51	0.41	0.49
Instrum Support from Child	0.02***	0.14	0.07	0.25
Community Contact	3.79	1.93	3.85	1.90
ADLs (0-8)	0.81***	1.32	1.24	1.61
Chronic Conditions (0-13)	2.32***	1.70	2.59	1.79
Subjective Health	3.12**	1.13	3.02	1.13

Time 2 (2000)	Men (N=3142)		Women (N=4710)	
Variable	**Mean**	**SD**	**Mean**	**SD**
CES-D Index (0-8)	1.36***	1.77	1.90	2.01
Dichotomous Depression	0.12***	0.33	0.20	0.40
Race (Black/African Amer)	0.07**	0.26	0.09	0.28
Not Married	0.29***	0.46	0.61	0.48

Income ($ in Thousands)	48.27***	62.86	31.23	39.15
Employed	0.14***	0.35	0.08	0.27
Educational Attainment	1.33***	1.40	1.03	1.02
Age	75.17***	6.21	76.18	6.53
Household Size	1.28***	0.77	1.34	0.78
Homeowner	0.74***	0.44	0.68	0.46
Coreside w/Children	0.13***	0.35	0.16	0.37
Transfers to Child	0.46***	0.51	0.39	0.48
Instrum Support from Child	0.02***	0.15	0.09	0.29
Community Contact	3.75	2.02	3.80	1.95
ADLs (0-8)	1.00***	1.52	1.50	1.77
Chronic Conditions (0-13)	2.51***	1.76	2.84	1.85
Subjective Health	3.13***	1.12	3.00	1.13

Gender Differences Significant at *p<.05; **p<.01; ***p<.001

Table 6. HRS: Effects of Within-Gender Changes in Independent Variables on Change in CES-D

	Men (N=3142)				Women (N=4710)			
	Model I		Model II		Model I		Model II	
	b	B	b	B	b	B	b	B
Δ Age	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02
Δ Marital Status	0.97***	0.25	0.97***	0.25	0.72***	0.17	0.72***	0.17
Δ Income	-9.90^{e-7}	-7.62^{e-7}	-9.94^{e-7}	-7.63^{e-7}	-3.44^{e-7}	-6.84^{e-7}	-3.36^{e-7}	-6.84^{e-7}
Δ Employment Status	-0.06	-0.09	-0.06	-0.09	-0.07	-0.13	-0.07	-0.13
Δ Household Size	-2.98^{e-3}	-0.08	-0.01	-0.08	0.05	0.10	0.04	0.09
Δ Coreside w/Children	0.17	0.20	0.19	0.24	2.98^{e-3}	0.19	0.14	0.24
Δ Transfer to Child	0.04	0.06	0.05	0.06	-0.03	-0.06	-0.03	-0.06
Δ Receipt Instrum Support	0.11	0.35	0.61	0.44	0.15	0.14	0.11	0.17
Δ Community Contact	-0.03	-0.02	-0.03	-0.02	-1.85^{e-3}	-0.01	-1.51^{e-3}	-0.01
Δ ADLs	0.19***	0.04	0.19***	0.04	0.12***	0.03	0.11**	0.03
Δ Chronic Conditions	0.07*	0.03	0.06*	0.03	0.09**	0.03	0.10**	0.03
Δ Subjective Health	-0.17***	-0.03	-0.18***	-0.03	-0.20***	0.03	-0.20***	-0.03

Δ Coresidence X Instrum	-1.16	-0.61		0.08	0.26
Δ Coresidence X ADLs	0.02	0.09		0.07	0.08
Δ Coresidence X Chronic	0.01	0.07		-0.09	0.06
Constant	0.25	0.26	-0.05		-0.05
R^2 (Overall)	0.21	0.20	0.16		0.16

*p<.05; **p<.01; ***p<.001