



Living Arrangements of Older Adults in China: The Interplay Among Preferences, Realities, and Health

Melanie Dawn Sereny

December 2009

PWP-DUKE-2009-007

*Duke Population Research Institute
On-line Working Paper Series*

Living Arrangements of Older Adults in China:
The Interplay Among Preferences, Realities, and Health

Melanie Dawn Sereny

Department of Sociology
Duke University

December 8, 2009

ABSTRACT

This paper uses cross-sectional data (the 2005 wave of the Chinese Longitudinal Healthy Longevity Survey – CLHLS) to examine the dynamics of living arrangements among community-residing elderly in China, including both actual living arrangements and preferences regarding living arrangements. Furthermore, we explore what factors influence “living arrangement concordance” – having a match between preferred and actual living arrangements. In addition, we examine the influence of living arrangement concordance on self-rated health and ADL disability. This study focuses on two groups – older adults who coreside with children and those who live independently. Results from logistic regression analysis show that actual living arrangement has a strong influence on preference to co-reside but age, gender, ethnicity, SES, and marital status also play a role. In particular, those with higher SES are more likely to prefer living independently from children. Evidence is also given for person-environment fit and cognitive dissonance theories, as older adults with concordance have better self-rated health. Older adults with functional disability, however, are more likely to prefer coresidence with children.

(167 words)

Introduction

Population aging will be one of the major demographic concerns of the 21st century, and the People's Republic of China provides one prime example of how low fertility and increasing longevity can lead to dramatic shifts in the age structure of a population. Much of the recent research on population aging in China is concerned with living arrangements and family support for Chinese elderly (Beydoun and Popkin 2005; Bian, Logan, and Bian 1998; Chen 2005; Chen and Short 2008; Chen and Silverstein 2000; Chou, Ho, and Chi 2006; Chou and Chi 2000; Cong and Silverstein 2008; Li, Zhang, and Liang 2009; Logan and Bian 1999; Song, Li, Zhang, and Feldman 2008; Wu and Schimmele 2008b; Zeng and George 2002; Zimmer and Kim 2001; Zimmer 2008; Zimmer, Kwong, Fang, Kaneda, and Tang 2007). Living arrangements are important to the health and well-being of the elderly because the household plays a strong role in determining social roles, providing social supports and interactions (or not) to older adults, and the characteristics of the dwelling itself and whether it is suitable to an older person (Waite and Hughes 1999).

This paper seeks to add understanding of the dynamics of living arrangements among community-residing elderly in China by exploring not only actual living arrangements, but preferences regarding living arrangements, and what factors influence “living arrangement concordance” – having a match between preferred and actual living arrangements. Taking it a step further, we will investigate what influence living arrangement concordance has on the health of older adults. A recent study looked at the relationship between living arrangement concordance and self-rated health among institutionalized and community-residing (broadly) Chinese elders (Sereny and Gu 2008),

but this paper will focus on two specific community-residing groups – those elders who co-reside with children and those who live independently. Studies of living arrangements often discuss preferences, but rarely explicitly measure them, and instead assume that actual living arrangements are a partial consequence of preference (Wilmoth 2001). Fortunately, the data set used for this study, the 2005 wave of the Chinese Longitudinal Healthy Longevity Survey (CLHLS), includes a specific question on living arrangement preference.

Living Arrangement Concordance

Our understanding of living arrangement concordance is informed by the theories of person-environment fit and cognitive dissonance. It is important to study living arrangement concordance because the extent of fit between an individual's competence, needs, and personality, and his/her environment of things and people may be relevant to life quality, well-being, and mental health (Carp and Carp 1984). The congruence theory of person-environment fit argues that an individual often strives to maximize concordance between needs and environment, either by changing environments or altering his/her perception of needs (Kahana 1975; Kahana, Liang, and Felton 1980). Studies have shown that elders with congruence (concordance) between needs and environmental opportunities have higher morale (Lawton 1976). Having a 'match' between preferences and realities is also related to the need to feel in control, which has been long recognized as basic to well-being for people at any age.

Person-environment fit theory also closely relates to the theory of cognitive dissonance, which postulates that if a person holds two cognitions that are psychologically inconsistent, he/she experiences cognitive dissonance or incongruity

(Festinger 1957). This tension will motivate a change of one or both cognitions to make them more consonant with each other. The elders in this study may not have the opportunity to change their living arrangement, only their preference, and if not able to do so, the cognitive dissonance that results can lead to negative consequences for health and well-being. In addition, while cognitive dissonance theory and related theories tend to relate more to conceptualizations of the self, we postulate that for older adults in China, living arrangement – in this case the desire (and ability) to live independently or coresidence with children – may be an extension of the self.

Limited research examines concordance of living arrangements, but fortunately some of such research comes from East Asia. A recent study of older women in Taiwan examined living arrangement concordance and how it differs over time and cohort (Hermalin and Yang 2004). The authors found that current family status and living arrangement had a strong influence on preference—80% of women already living with a married son preferred to continue to do so. Those who did not prefer co-residence with children mostly preferred living alone or with a spouse only. Educated individuals were more likely to have concordance and also to prefer living independently.

Another study, using data from the nine-city aging survey in China conducted in 1987, also examined the relationship between actual and preferred living arrangements. The choices were between living with a married son, a married daughter, or separately. The authors found that about one third of the sample did not have concordance. They found that behaviors and preferences were affected by circumstances, with a larger-size residence increasing the likelihood of preferring coresidence. Widowed fathers and mothers were also more likely than married persons to prefer coresidence. The paper

gave tentative evidence that preferences strongly affect coresidence, while coresidence has a modest negative effect on preferences to coreside (Logan and Bian 1999).

One study from a non-Chinese setting came to different conclusions regarding what influences actual and preferred living arrangements. Evidence from a study of elderly Latinos in the United States indicates that of those who live alone, men, individuals with more sons, and foreign-born Hispanics were more likely to prefer coresidence with children. Women, individuals with higher economic resources, more daughters, and native-born Latinos were more likely to prefer living alone. In addition, the article also found that preferences influence actual living arrangements (Zsembik 1996).

Determinants of Living Arrangement Preferences

Fertility surveys often ask women if old-age support is a motivation for higher fertility, but living arrangement preferences of already aged individuals are rarely asked about in population surveys (Hermalin and Yang 2004). In addition, studies may not measure preference directly by a survey question, but researchers acknowledge the fact that preferences influence actual living arrangements and that preferences are shaped by cultural norms and expectations, but also by education and other methods for exposure to new ideas (Knodel and Ofstedal 2002). We can expect that preferences will be strongly influenced by characteristics that reflect how traditional an individual's environment has been (Hermalin and Yang 2004).

Other studies that look at factors which influence living arrangement preferences have found that Korean seniors who are more highly educated, have economic independence, are religious Protestant Christians, and who have no living sons are more likely to prefer living independently; whereas older age and being unmarried reduces the

odds of preferring a separate residence (Kim and Rhee 1997). Elderly Chinese-Canadians with poor financial situations are more likely to prefer coresidence with children (Lai 2005). Americans strongly prefer staying in their own home, living independently and residing in the community for as long as possible (Sabia 2008)

Determinants of Living Arrangements

A great deal of research has been carried out examining the determinants of elderly living arrangements, both in the United States and other more developed countries, but also there is increasing research looking at Chinese and other populations residing in less developed countries. In a study of immigrant and non-immigrant American elderly, Wilmoth, Jong, et al. (1997) found that, even after controlling for demographic characteristics, economic resources, health, and acculturation, immigrants were more likely to be living with extended family members. They also found that women, married individuals, and those with more income were the least likely to live in extended family living arrangements. Among Japanese elderly, urban residency and higher education increase the likelihood of living independently or with a single child. Total number of children reduces the probability of living with a spouse only but increases the odds of living with a single child. Having children nearby increases the odds of living with a spouse only (Brown, Liang, Krause, Akiyama, Sugisawa, and Fukaya 2002). Elderly Egyptian women, as compared with men, live more often with ever-married than non-married children. Older, more economically vulnerable men were more likely to live alone than women (Yount and Khadr 2008).

Research from China, using a life course approach, found that parental residence changes over time, and that it responds both to children's need for childcare, death of one

parent, and health status of parents. Residence change reflects a social exchange between generations (Chen 2005). Marital status itself determines the set of living arrangements available to individuals. A study using CLHLS data found that unmarried older adults in poor health were more likely to live with children than those in good health, but that married people were less likely to have health influence living arrangements (Zimmer 2008). Data from Beijing found that married individuals were less likely to coreside with children (Zimmer et al. 2007).

Gender also plays a role in living arrangements. Women may come from a more vulnerable position in terms of economic power, but they may command more emotional loyalty from children (Yount and Khadr 2008). Women in poor health are more likely than men in poor health to move in with children and others, though health plays less of a role in living arrangement transition among men (Zimmer 2008). Number of children also influences living arrangement. Zimmer et al's 2007 research on Beijing elders found that two children maximizes the likelihood of coresidence, but there is a slight decline for older adults with more than three children. Socio-economic status determines normative value and aspects of material well-being among older adults in China (Knodel and Ofstedal 2002; Logan and Bian 1999). In Beijing, educated elderly and those previously employed in higher status occupations are less likely to live with children (Zimmer et al. 2007).

Living Arrangements and Health

Because we have a limited understanding of the direct and indirect effects of health on living arrangements, but many scholars are interested in untangling this relationship (Liang, Brown, Krause, Ofstedal, and Bennett 2005). Health is not merely

the absence of disease, but a subjective experience of well-being. When thinking about the health of older adults, it is important not only to consider more objective measures of health, such as the incidence of chronic disease or functional disability, but psychological health and measures of well-being, which may also include concordance.

In China, intergenerational coresidence may give older adults a sense of pride, as well as instrumental and emotional support which could improve health, but on the other hand coresidence could encourage dependence and speed up age-related loss of physical ability (Li, Zhang, and Liang 2009). Several studies from China have found that older adults living together with family members have better subjective well-being than those living alone (Chen and Short 2008; Chen and Silverstein 2000; Wu and Schimmele 2008b). It is a little difficult to compare studies because of different measures of psychological disposition and possible living arrangements, as well as potential regional differences but X. Chen and Silverstein (2000), using data from the Beijing Multidimensional Longitudinal Study on Aging, found that number and gender of children had no impact on older parents' morale, whereas F. Chen and Short (2008) found that among CLHLS elderly, oldest-old adults living with daughters had higher scores of positive well-being. Both studies concluded that older adults with more education and better finances tended to have better emotional health and higher morale when compared to peers. The Beijing study also found that younger, married, urban, and healthier elders who are more culturally traditional also tend to have higher morale. Wu and Schimmele (2008), also using the CLHLS, found that benefits of coresidence with family members persist regardless of SES and health disparities.

Some research from the United States finds that married couples have the highest levels of physical, emotional and cognitive functioning. In addition, those elders with higher education and greater income have better health, and as well as those with friends nearby (Waite and Hughes 1999). However, other research from the US finds that functional status and cognitive functioning are highly associated with inter-generational coresidence for unmarried older adults, but health plays no role among those who are married (Liang et al. 2005). (for a more thorough review of the literature see Hayes 2002). Older Japanese parents with chronic conditions are more likely to live with a married child or a spouse only than they are to coreside with a single child. On the other hand, those who self-rate their health as poor are more likely to live with a single child (Brown, Liang et al. 2002).

Studies among Chinese elders have found that elderly who live alone are less likely to have ADL limitations than those who coreside with children (Li, Zhang, and Liang 2009; Zimmer et al. 2007). In addition, CLHLS elderly who live with children report better SRH than those who live alone (Liu and Zhang 2004), but another study shows a particular health advantage of living with a spouse only (Li, Zhang, and Liang 2009). Living arrangements, however, do not seem to moderate the improving effect of psychological disposition on self-rated health (Wu and Schimmele 2006) nor the inverse effect of education on IADL disability (Beydoun and Popkin 2005). Results from the China Health and Nutrition Surveys (CHNS) show that older adults living with non-spouse had significantly higher risk of functional status decline compared to those living independently (Beydoun and Popkin 2005).

Eldercare in China

Living arrangements for the elderly take on a special meaning in the Chinese context because of the deep-seated tradition of filial piety and coresidence with one or more married children, usually the eldest son. In such a situation, ideally the elder would receive emotional, instrumental, and financial support from their co-resident family members. Evidence from pre-1949 China indicates that the majority of elderly people co-resided with family members (Yan, Chen, and Yang 2003).

Co-residence with children stems from the Confucian ideal of filial piety, or *xiao*. Confucius taught that respect for parents was the highest virtue of all (Whyte 2003; Zhang and Goza 2006). According to Confucian thought, filial piety means not only carrying out duties towards serving parents, but doing so with the proper attitude (Ikels 2004).

Despite the communist party's attempt to erode family function and stress the importance of fealty to the state, filial support did not weaken to a great degree (Zimmer 2005). Elders in China rely on spouses, children, and grandchildren for emotional, physical, and financial support, especially in rural areas (Wu and Schimmele 2008a; Zeng and George 2002). Co-residence with children however, has declined over time as family sizes have decreased due to the one child policy and other social and economic changes. It is not yet clear, however, how a decline in co-residence will affect financial and instrumental inter-generational support more generally.

Data

The data for this project comes from the 2005 wave of the Chinese Longitudinal Healthy Longevity Survey (CLHLS). The survey was launched in 1998 in China with a focus on the oldest-old because this age sub-population is growing at a rapid rate and

previous studies contained few respondents over the age of 80. The baseline survey and follow-up surveys with replacement for deceased elders was carried out in a random sample of half of the counties and cities in 22 of China's 31 provinces (and municipalities) in 1998, 2000, 2002, 2005, and 2008-2009. These areas are Liaoning, Jilin, Heilongjiang, Hebei, Beijing, Tianjin, Shanxi, Shaanxi, Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi, Shandong, Henan, Hubei, Hunan, Guangdong, Guangxi, Sichuan and Chongqing. The population in these provinces and municipalities makes up about 85% of the total population of China. In the 2005 wave, for each centenarian respondent, one nearby octogenarian and nonagenarian were interviewed, and for every two centenarians, three nearby elders aged 65-79 of predefined age and sex were interviewed. The 2005 wave had 15, 638 respondents ranging from ages 65 to 112 (Zeng 2008).

The focus of this research is on a question that was first added to the questionnaire in 2005 - "which living arrangement setting do you prefer?" Respondents were given a choice of five possible responses: (1) living alone (or with spouse only) regardless of residential distance to children; (2) living alone (or with spouse only) but children living nearby; (3) co-residence with children; (4) living in an institution (e.g., elderly center, elderly apartment, and welfare center); and (5) do not know. This paper will focus on those elders who responded with choice 1, 2, or 3. Concordance of living arrangement is defined as living in a certain living arrangement and preferring to do so—having a 'match' (code=1), otherwise the respondent has discordance (code=0). For ease of analysis, categories 1 and 2 have been combined. This paper will only be looking at older adults who either prefer and/or actually live alone or with a spouse only (hereafter referred to as (independent living) or coreside with children. For example, the first

regression looks at preference to co-reside and the comparison group is prefers independent living only, and the same is true for actual living arrangement. The sample is limited to ever-married elders in these two living arrangement and preference types, and to those individuals with one or more living children. The sample is reduced from 15,638 older adults interviewed in the 2005 wave to 14,445 respondents. Only these two groups are studied here because of limitations of the data set, and a previous work explored concordance among Chinese elders who live in institutions (Sereny and Gu 2008).

The CLHLS contains extensive data on demographic characteristics, family and household characteristics, social economic status (SES), family or social support, self-rated health (SRH), activities of daily living (ADL), and other variables. All information was obtained through in-home interviews. Systematic data quality assessments show good quality for the datasets of the CLHLS (Gu 2008; Zeng and Gu 2008).

Methods

Multiple sets of binary logistic regression analysis will be carried out to explore the relationships between preferences, actualities, and health. The dependent variables are living arrangement preference, living arrangement concordance, poor self-rated health, and ADL disability, in that order. The first set of regressions, which predict preference and concordance, include demographic, SES, and family caregiving variables as controls. The second set of regressions look at the effect of living arrangement concordance on two different health measures, while controlling for all previous covariates, some additional health measures, and a personality variable measured by positive outlook.

Demographic variables include age, gender, and being non-Han (minority) ethnicity. Age was verified through a variety of methods in the data set (Zeng and Gu 2008). The majority of the elders in the sample are Han Chinese ethnicity but it is important to control for minority status because they may have different later life experiences.

Socio-economic variables are not standard across studies of aging in China but a review of the literature lead me to include the following SES variables: urban residence, education, main occupation before age, economic independence, and home registration in own name. In China at present a massive disparity exists between rural and urban residents, and residence is often used as a proxy for socio-economic status. Urban residents generally have higher incomes, higher standards of living, and better healthcare. The elders in this sample had very little formal education so education is a binary variable where a code of 1 means one or more years of schooling, whereas 0 means no schooling (Zhu and Xie 2007). Lifetime occupation is another indicator of socio-economic status. For men whose primary occupation was in agriculture or fishery and for women whose husbands were in that industry the variable is coded as 1, and all others are coded as 0. For men, occupation is their own primary occupation before age 60, and for women, occupation is coded as their husband's occupation before age 60 (Wu and Schimmele 2008a). The variable economic independence comes from two variables, one which reports whether primary means of financial support come from self, family, or government, and the second which asks whether financial support is sufficient to pay daily costs. If financial support comes from self and is sufficient to pay daily costs then economic independence is coded as 1. "Home in own name" comes from a variable

which asks under whose name is current dwelling registered, if “self” is answered then variable is coded as 1, otherwise it is a 0.

Family care variables include marital status, number of living children, and children living nearby. The majority of the respondents are widows. Marital status is a categorical variable, where widowed is the comparison group, and married and divorced/separated are controlled for. Different coding schemes were used for number of children but having number of children as an ordinal variable with one child as the comparison group seemed to best capture some of the non-linear effects of number of children on preference, concordance, and health outcome (Zimmer 2005). Living nearby for urban residents means the child lives on the same street, and for rural residents it refers to the same village.

Self-rated health is assessed using a single item in this study. Subjects were asked “In general, would you say your health is: (1) very good, (2) good, (3) fair, (4) poor, or (5) very poor?” Studies have shown that SRH is a good predictor of mortality among the elderly (Idler and Benyamini 1997) and among oldest old in previous waves of the CLHLS (Li and Liu 2008). If a respondent needed assistance in any of the six ADL items (bathing, dressing, indoor transferring, toileting, incontinence, and eating), he/she was considered to be disabled (code=1). Otherwise, he/she was considered active. Chronic health condition(s) is coded as 1 if a respondent self-reports suffering from one or more chronic conditions asked by the interviewer¹. Cognitive disability is having an minimal state exam (MMSE) score lower than 24 (Zeng and Vaupel 2002). Positive outlook is an index of items that are related to subjective well-being: 1) how do you rate your life at present? 2) Do you always look on the bright side of things? 3) Are you as

happy now as when younger? Responses range from 1 (always or very good) to 5 (never or bad). The order of the responses is rearranged so that 1 suggests the weakest feeling and 5 the strongest. The index values range from 3-15 with higher numbers indicating a more positive outlook on life (Chen and Short 2008; Wu and Schimmele 2006).

Results

Table 1 shows the number and percentage of elderly that live in five types of living arrangements as derived from the data. The majority of respondents co-reside with children, while about 30% of the sample live alone or with a spouse (4,885 respondents), with more than 2/3 of them living near children. Similar numbers of respondents live in institutions (oversampled) as live in “other” arrangements. This data is similar to 2000 Chinese census data which shows that 30.8% of elders lived with a spouse only and 61.3% lived with children or others (He, Sengupta, Zhang, and Guo 2007).

---Table 1 about here---

Table 1 also shows the respondents answer to question F16 – “which living arrangement setting do you prefer?” More than half of the respondents chose co-residence with children as their preferred living arrangement. Missing values have been imputed.

This research is interested in looking at the relationship between living arrangements, living arrangement concordance, and health – namely self-rated health and ADL disability. Table 3 shows mean self-rated health, the percentage of the sample that self-rates health as poor, and the percentage of respondents with ADL disability, stratified by type of living arrangement. Mean SRH and the percentage of the sample self-rating health as poor are roughly similar across living arrangement types, while ADL disability

ranges considerably. Those living in ‘other’ living arrangements have the highest incidence of ADL disability at 50.40%, while only 11.2% of those living independently are ADL disabled.

---Table 2 about here---

In addition, table 2 examines health conditions stratified by living arrangement concordance. The results are different than the previous table. Those who live independently and have concordance are healthier – statistically better (lower) SRH, smaller percentage in self-rated poor health, and lower prevalence of ADL disability, whereas among elders who co-reside with children it is the opposite. Nearly one-third of the elderly persons who co-reside with children and prefer to do so have difficulty with one or more activities of daily living, compared to only 21% of elders who live with children but would prefer to live independently. Among elders who coreside, however, there is not a statistically significant difference in self-rated health between those who have concordance or not.

Characteristics of the sample are shown in table 3, stratified by living arrangement type. Overall, the majority of the respondents are female, Han Chinese, rural residents, lacking economic independence, do not live in own home, widowed, have children living nearby, have one or more chronic health conditions, and are not cognitively disabled. There are statistically significant differences between the vast majority of the variables. On average, those who live independently are younger, have more children, and have a higher score on the positive outlook index. Greater proportions of those who co-reside with children are female, non-Han ethnicity, widowed, and have cognitive disability compared with those who live independently. A greater

proportion of those who live independently have economic independence, live in his/her own home, and are married than those who coreside with children.

---Table 3 about here---

The first regression looks at odds ratios for predicting preference to coreside with children. Model I includes demographic, SES, and family care variables, and model II adds actual living arrangement. Each additional year of age and being non-Han Chinese increases the likelihood of preferring co-residence. Perhaps older adults are more in need of the care provided by co-resident family members, or are more likely to hold traditional attitudes regarding familial coresidence. Those who are male, have economic independence, have a home registered in own name, are married, have five or more children (as compared to one), and have children living nearby are less likely to prefer coresidence. Adding actual living arrangement in model II greatly increases the model fit and actual coresidence is highly predictive of preference, with those who actually live with children being more than sixteen times more likely to prefer to do so than those who live independently. In addition, when actual living arrangement is added to the model, the effect of demographic and SES variables weaken, and the previously significant family care variables are only significant at the 0.1 level. The significance and effect of occupation, however, strengthens – those older adults with lower-status occupations are more likely to prefer coresidence, which is in line with the direction of the other SES variables. Older adults with better socio-economic status are more likely to prefer living independently. Models were also run which included health factors in the analysis, but the results were extremely similar and omitted here.

---Table 4 about here---

The next regression explores what factors predict concordance of living arrangements, with separate models for those who co-reside with children and those who live independently. The results for predicting concordance among those who coreside with children are very similar to the results from table 4. The effect of ethnicity has increased in magnitude with non-Han Chinese elders being 2.67 times more likely to have coresidence concordance than Han Chinese, net of other factors. With all else being held at its mean, elders whose home is in their name, meaning that their children and grandchildren moved in with them, and not vice versa, are less likely to have coresidence concordance by a factor of 1.45². The effect of marital status is also higher than previously, with married elders being 1.72 times more likely to have living arrangement discordance than widowed elders.

In direct contrast, older adults are less likely to have independent living concordance, while higher SES elders are more likely to do so – those who can support themselves economically are 83% more likely to have concordance than those who are not economically independent. A new finding however, is that more children increases the likelihood of having independent living concordance. Those with four children or five or more children (as compared to one child) are 51% and 54% more likely to have concordance, respectively.

---Table 5 about here---

The next set of regressions looks at health as the dependent variable. First, in table 6 we look at the effect of living arrangement concordance in predicting poor self-rated health, net of other demographic, socio-economic, family care, health, and personality variables, and in table 7 we explore the relationship between ADL disability

and living arrangement concordance. In both sets of analysis, Model I includes only demographic factors as controls, model II adds SES covariates, model III adds family care variables, model IV adds additional health measures, and model V adds a control for positive outlook.

Model I in table 6 shows that both types of concordance, as compared with discordance in living arrangements, decreases the likelihood of self-reporting health as poor by factors of 1.16 and 1.17, respectively. Or, in other words, after controlling for age, sex, and minority status, those with concordance are 16-17% more likely to self-rate health as good. When SES factors are added in model II, the effect of coresidence concordance on SRH weakens. Older age increases the likelihood of self-rating health as poor, while being male lowers the odds. SES is mixed. Those male elders or spouses of female elderly who worked in lower-status occupations are somewhat more likely to have better health and older adults with economic independence are 56% more likely to have good self-rated health. Those who live in their own home, however, are 22% more likely to have poor self-perceived health. Further exploration is necessary.

The relationship between independent living concordance and self-rated health strengthens after family care variables are added to the model, while it weakens the effect of coresidence concordance on health. Married elders are 15% more likely to self-rate health as poor. Only the odds ratio for 5 or more children is significant at the .05 level, and having more children decreases the likelihood of self-rating health as poor by a factor of 1.18.

When other health variables are controlled for, both types of concordance are equally predictive of decreasing the likelihood of self-rating health as poor. All three

health variables are highly predictive of self-rating health as poor, and those elderly persons with one or more chronic health conditions are more than twice as likely to self-rated health as poor compared to those with no self-reported chronic conditions, net of other factors. In addition, once health variables are controlled for, the effect of age reverses. A further finding is that in model IV education becomes significant and positive, while the magnitude of the other SES variables weakens slightly.

The final model adds positive outlook, a continuous measure, and it somewhat mediates the effect of concordance on self-rated health. While independent living concordance is now barely significant, coresidence concordance is still predictive of lower odds of poor self-rated health at the .05 level, giving credence to the congruence model of person-environment fit theory. In the final model, each additional year of age, economic independence, and a positive outlook decrease the likelihood of a respondent self-reporting health as poor, net of other factors. Those in the sample who have some education, ADL disability, chronic health conditions, and cognitive disability are more likely to self-rate health as poor

---Table 6 about here---

The final model predicts ADL disability among community-residing Chinese elders. The relationship between concordance and this particular health outcome is quite different from the previous regression. In every model, coresidence concordance increases the likelihood of ADL disability while independent living concordance decreases the likelihood of disability. While the high significance of independent living concordance gives evidence of the person-environment fit and cognitive dissonance theories, there is a different story behind the significance and direction of the odds ratio

for coresidence concordance. It is not entirely surprising, however, because the results from table 2 show that a greater percentage of elders with coresidence concordance have ADL disability than those with discordance. Although cross-sectional data prohibits me from knowing whether preference or disability came first, we can speculate that perhaps disability is driving coresidence concordance for some elderly Chinese.

---Table 7 about here---

The variables and models fit the data better for predicting ADL disability than self-rated health as is evidenced by the high chi-square values. In addition, the effect of individual covariates changes little as additional variables are added to the model, with the exception of economic independence. In the final model of table 7, males, non-Han Chinese, those elders who previously were employed in agriculture or fishery, those with children living nearby, good self-rated health, and higher scores on the positive outlook index are less likely to be disabled in one or more activities of daily living. Older adults, urban residents, married elders, those with chronic health conditions, and those with cognitive disability are more likely to have ADL disability. Economic independence decreases the odds of having ADL disability in models II and III but disappears after health is controlled for. I also examined the effect of preference to co-reside only on ADL disability (not reported) and found similar results as those shown here.

There are both similarities and differences in the effect of covariates in predicting poor SRH and ADL disability in tables 6 and 7. Economic independence and positive outlook decrease the likelihood of poor SRH and ADL disability. Male gender is highly significant and negative in all models predicting ADL disability but the effect of gender on poor self-rated health drops out when health variables are added to the model. There

is no effect of ethnicity on poor self-rated health but in predicting ADL disability, non-Han Chinese are less likely by a factor of 1.69 to have ADL disability in the final model. Urban residence does not influence poor self-rated health in my models but urban elderly are more than 50% more likely to have ADL disability. In addition, while educated elderly are 12% more likely to have poor self-rated health in my regression analysis, education plays no role in predicting ADL disability. Surprisingly, economic independence does not influence the likelihood of having ADL disability, but it is highly predictive of good self-rated health. Another SES variable, having one's home registered in one's own name also does not predict ADL disability but it strongly increases the odds of having poor self-rated health in the previous regressions.

Number of children seems to play no role in predicting ADL disability, but proximity of children does. This is different from table 6 where there was some evidence that greater numbers of children decreased the odds of self-rating health as poor. Cognitive disability has a larger odds of predicting ADL disability than the other health variables, but chronic health conditions had a larger impact on poor self-rated health. Each additional score on the positive outlook index has a slightly higher effect on poor self-rated health than it does on ADL disability, factors of 1.11 and 1.06 respectively.

Discussion

This study gives further insight into the relationship between preferences, realities, and health, and how current attitudes relating to living arrangements of Chinese elderly may be different from traditions of the past. To my knowledge, this is one of the first studies to examine the relationship between living arrangement concordance and health. Some of the major findings of this study are that, although actual living arrangement has

a strong influence on preference to co-reside with children, other factors are also at play, including age, gender, ethnicity, socio-economic status, and marital status. In addition, different factors influence co-residence concordance than independent living concordance. we find some support for the theories of person-environment fit and cognitive dissonance, with concordance of living arrangements predicting better health among some groups, but also evidence that preference itself may be a strong predictor of health among older adults in China. However, there may be other factors not accounted for here that may reduce the magnitude of cognitive dissonance between preference and reality. In addition, the survey data on preference of living arrangements also indicates the growing acceptance of living separately from children, something that was also found in an earlier study of Chinese elderly in urban settings (Logan and Bian 1999).

Older adults and people with lower socio-economic standing are more likely to prefer coresidence with children, while older adults with better socio-economic status and more family care resources are less likely to prefer coresidence. This could mean that lower SES people have more traditional attitudes towards inter-generational coresidence or that greater resources enable elders to live independently. There is some indication that if individual finances were sufficient, independent living would be preferred. This goes against traditional attitudes that value intergenerational coresidence.

Coresidence concordance predicts better self-rated health even after controlling for other health problems and positive attitude thus giving support to the congruence model of person-environment fit. Having satisfaction through a match between preferred and actual living arrangements may improve the well-being of older adults in China. The theories also may pertain to ADL disability among elders with independent living

concordance. Concordance in independent living, as compared to discordant older adults in either living arrangement, predicts lower odds of ADL disability.

Coresidence concordance, however, predicts greater odds of ADL disability. This is not in line with my hypothesis, but is still a very interesting finding. We can only conjecture, because the cross-sectional nature of the data does not allow me to verify this, but it is possible that disability preceded coresidence (or coresidence preference) and that older adults with functional disability may self-select into coresidence with children. Their lower functioning makes them need and prefer coresidence with children, and thus having concordance predicts ADL disability.

There are several limitations of this study that deserve additional attention. First, there is qualitative difference between living alone versus living with a spouse only, but we considered both to be “independent living” because of the nature of the preference question. Grouping the living arrangements in this way also makes it difficult to compare my study with others. Second, many studies which examine patterns of intergenerational co-residence in China look at the gender of the co-residential child, because the traditional pattern is for older parents to live with the eldest married son. Because the preference question did not specify gender, we did not include gender of child in my analysis. Third, the paper does not yet consider children’s needs or support provided by parents into the analysis. However, because the CLHLS over-samples the oldest-old, they may be less able to provide instrumental and financial assistance to younger generations. Finally, the association between living arrangement concordance and health in the present study is a snapshot, which may suffer from issues of endogeneity. The unavailability of data on living arrangement preferences in earlier waves prohibits

examining the longitudinal association between living arrangement discordance and health. Once the 2008 wave data is publicly available in 2010 or 2011, we will be able to verify such associations. It will also be possible to see whether people change their opinion once they find themselves in a different living arrangement that they had previously been discordant towards. This may help disentangle whether ADL disability preceded co-residence or not.

Because studying living arrangement concordance is a relatively unexplored area, there are many directions for the research to expand. If other surveys of older adults, whether from developing or developed countries, also contained a question asking about preference we could see what factors influence concordance and how concordance influences health in different settings, and see how that might compare with China. In addition, longitudinal data on living arrangement preference would enable researchers to see how preferences change over time, and explore whether actual living arrangement influences preference or vice-versa. These results show that studying living arrangement concordance among the elderly is important because, for some, concordance may lead to higher well-being, and for others, preference may actually be a proxy for health problems and need for care.

In Western societies intergenerational coresidence has declined during the 20th century (Grundy 1999; Ruggles 1994), but it is yet unclear to what extent coresidence will decline in China and other parts of East Asia. Family sizes and numbers of adult children will decline, but rural to urban migration will also influence coresidence and living arrangement options for older adults. Future state support for social security and senior homes could also play a major role. However, future cohorts of elderly Chinese

may be less in need of care provided by adult children through coresidence and proximity because they will be better educated and wealthier. Educated people often have better health and wealthier people have more access to healthcare (Zimmer and Kwong 2003). This CLHLS data set does not indicate a decline in intergenerational support, only a decline in coresidence. If attitudes are indeed changing and parents do not expect the same level of support as they did in the past then perhaps we do not have to worry about negative psychological outcomes for Chinese elderly. This study has shown that an elder who has concordance between preferred and actual living arrangement will have better health than those who do not, though it varies by health outcome and type of concordance. Concordance itself could serve as an indicator of well-being. Future surveys of the elderly should include questions about living arrangement preferences, we should not assume that there is a one-size fits all model in more developed or developing countries, instead elders should have a choice of living arrangement, as ‘concordance’ may improve quality of life and overall well-being.

¹ These include hypertension, diabetes, heart disease, stroke, bronchitis, tuberculosis, cataracts, glaucoma, cancer, gastric ulcers, parkinson’s disease, bedsores, arthritis, dementia, psychosis, orthopedic disease, internal medical disease, dermatosis, five organs disease, and other diseases.

² Here I will refer to odds ratios under 1 as a “factor change” in the odds for ease of comparison with odds ratios higher than 1. The factor change is calculated as 1/odds ratio.

REFERENCES

- Beydoun, May A. and Barry M. Popkin. 2005. "The impact of socio-economic factors on functional status decline among community-dwelling older adults in China." *Social Science & Medicine* 60:2045-2057.
- Bian, F., J. R. Logan, and Y. Bian. 1998. "Intergenerational relations in urban China: Proximity, contact, and help to parents." *Demography* 35:115-124.
- Brown, J. W., J. Liang, N. Krause, H. Akiyama, H. Sugisawa, and T. Fukaya. 2002. "Transitions in Living Arrangements Among Elders in Japan Does Health Make a Difference?" *Journals of Gerontology Series B: Psychological Sciences and Social Sciences* 57:209-220.
- Carp, Frances M. and Abraham Carp. 1984. "A complementary/congruence model of well-being or mental health for the community elderly." Pp. 279-328 in *Elderly People and the Environment*, edited by I. Altman, M. P. Lawton, and J. F. Wohlwill. New York and London: Plenum Press.
- Chen, F. 2005. "Residential patterns of parents and their married children in contemporary China: A life course approach." *Population research and policy review* 24:125-148.
- Chen, F. and Susan E. Short. 2008. "Household Context and Subjective Well-Being Among the Oldest Old in China." *Journal of Family Issues* 29:1379-1403.
- Chen, X. and M. Silverstein. 2000. "Intergenerational social support and the psychological well-being of older parents in China." *Research on aging* 22:43.
- Chou, K-L, A. H. Y. Ho, and I. Chi. 2006. "Living alone and depression in Chinese older adults." *Aging & mental health* 10:583-591.
- Chou, K. L. and I. Chi. 2000. "Comparison between elderly Chinese living alone and those living with others." *Journal of Gerontological Social Work* 33:51-66.
- Cong, Z. and M. Silverstein. 2008. "Intergenerational Support and Depression Among Elders in Rural China: Do Daughters-In-Law Matter?" *Journal of Marriage and Family* 70:599-612.
- Festinger, Leon. 1957. *A theory of cognitive dissonance*. Evanston, IL: Row, Peterson
- Grundy, E. 1999. "Intergenerational perspectives on family and household change in mid-and later life in England and Wales." *Changing Britain: families and households in the 1990s*:201-228.
- Gu, D. 2008. "General Data Quality Assessment of the CLHLS." Pp. 61-78 in *Healthy Longevity in China: Demographic, Socioeconomic, and Psychological Dimensions*, edited by Y. Zeng, D. L. Poston, D. A. Vlosky, and D. Gu. Dordrecht, The Netherlands: Springer Publishing.
- Hays, J. C. 2002. "Living Arrangements and Health Status in Later Life: A Review of Recent Literature." *Public health nursing* 19:136.
- He, Wan, Manisha Sengupta, Kaiti Zhang, and Ping Guo. 2007. "Health and Health Care of the Older Population in Urban and Rural China: 2000." US Dept. of Commerce, Economics and Statistics Administration, US Census Bureau.
- Hermalin, Albert and Li-Shou Yang. 2004. "Levels of Support from Children in Taiwan : Expectations versus Reality, 1965-99." *Population and development review* 30:417-448.

- Idler, E. L. and Y. Benyamini. 1997. "Self-rated health and mortality: a review of twenty-seven community studies." *Journal of health & social behavior* 38:21-37.
- Ikels, Charlotte. 2004. *Filial Piety: Practice and Discourse in Contemporary East Asia*. Stanford, California: Stanford University Press.
- Kahana, E. . 1975. "A congruence model of person-environment interaction." in *Theory Development in Environment and Aging*, edited by P. G. Windley and G. Ernst. Washington, D.C: Gerontological Society.
- Kahana, E., J. Liang, and B. J. Felton. 1980. "Alternative models of person-environment fit: Prediction of morale in three homes for the aged." *Journal of Gerontology* 35:584.
- Kim, C. S. and K. O. Rhee. 1997. "Variations in preferred living arrangements among Korean elderly parents." *Journal of cross-cultural gerontology* 12:189-202.
- Knodel, John and Mary Beth Ofstedal. 2002. "Patterns and Determinants of Living Arrangements." Pp. 143-184 in *The Well-Being of the Elderly in Asia: A Four-Country Comparative Study*, edited by A. I. Hermalin. Ann Arbor: University of Michigan Press.
- Lai, D. W. L. 2005. "Cultural Factors and Preferred Living Arrangement of Aging Chinese Canadians." *Journal of Housing for the Elderly* 19:71.
- Lawton, M. P. . 1976. "The impact of the environment on aging and behavior." in *Handbook of the Psychology of Aging*, edited by J. E. Birren and K. W. Schaie. New York: Van Nostrand Reinhold.
- Li, L. W., J. Zhang, and J. Liang. 2009. "Health among the oldest-old in China: Which living arrangements make a difference?" *Social Science & Medicine* 68:220-227.
- Li, Qiang and Yuzhi Liu. 2008. "Mortality Predictability of Self-Rated Health Among the Chinese Oldest Old: A Time-Varying Covariate Analysis." Pp. 376-396 in *Healthy Longevity in China: Demographic, Socioeconomic, and Psychological Dimensions*, edited by Y. Zeng, D. L. Poston, Jr., D. A. Vlosky, and D. Gu. Dordrecht, the Netherlands: Springer Publisher.
- Liang, J., J. W. Brown, N. M. Krause, M. B. Ofstedal, and J. Bennett. 2005. "Health and Living Arrangements Among Older Americans: Does Marriage Matter?" *Journal of Aging and Health* 17:305.
- Liu, G. and Z. Zhang. 2004. "Sociodemographic differentials of the self-rated health of the oldest-old Chinese." *Population research and policy review* 23:117-133.
- Logan, J. R. and F. Bian. 1999. "Family values and coresidence with married children in urban China." *Social Forces*:1253-1282.
- Ruggles, S. 1994. "The transformation of American family structure." *The American Historical Review*:103-128.
- Sabia, J. J. 2008. "There's No Place Like Home: A Hazard Model Analysis of Aging in Place Among Older Homeowners in the PSID." *Research on aging* 30:3.
- Sereny, Melanie and Danan Gu. 2008. "Predicting Living Arrangement Concordance and Its Association with Self-Rated Health among Institutionalized and Community-Residing Elderly People in China." in *Southern Demographic Association Annual Meeting*. Greenville, SC.
- Song, Lu, Shuzhuo Li, Whenjuan Zhang, and Marcus W. Feldman. 2008. "Intergenerational Support and Self-Rated Health of the Eldelty in Rural China: An Investigation in Chaohu, Anhui Province." in *Healthy Longevity in China*:

- Demographic, Socioeconomic, and Psychological Dimensions*, edited by Y. Zeng, D. L. Poston, Jr., D. A. Vlosky, and D. Gu. Dordrecht, the Netherlands: Springer Publisher.
- Waite, L. J. and M. E. Hughes. 1999. "At risk on the cusp of old age: Living arrangements and functional status among black, white and Hispanic adults." *Journals of Gerontology: Social Sciences* 54:136-144.
- Whyte, Martin King. 2003. "China's Revolutions and Intergenerational Relations." Pp. 3-32 in *China's Revolutions and Intergenerational Relations*, edited by M. K. Whyte. Ann Arbor: Center for Chinese Studies, The University of Michigan.
- Wilmoth, J. M. 2001. "Living arrangements among older immigrants in the United States." *The Gerontologist* 41:228-238.
- Wilmoth, J. M., G. F. De Jong, and C. L. Himes. 1997. "Immigrant and non-immigrant living arrangements among America's White, Hispanic, and Asian elderly population." *International Journal of Sociology and Social Policy* 17:57-82.
- Wu, Z. and C. M. Schimmele. 2006. "Psychological disposition and self-reported health among the 'oldest-old' in China." *Ageing and Society* 26:135-151.
- Wu, Zheng and Christoph M. Schimmele. 2008a. "Living Arrangements and Psychological Disposition of the Oldest Old Population in China." Pp. 397-418 in *Healthy Longevity in China: Demographic, Socioeconomic, and Psychological Dimensions*, edited by Y. Zeng, D. L. Poston, Jr., D. A. Vlosky, and D. Gu. Dordrecht, The Netherlands: Springer Publisher.
- . 2008b. "Living Arrangements and Psychological Disposition of the Oldest Old Population in China." Pp. 397-418 in *Healthy Longevity in China: Demographic, Socioeconomic, and Psychological Dimensions*, edited by Y. Zeng, D. L. Poston, Jr., D. A. Vlosky, and D. Gu. Dordrecht, The Netherlands: Springer Publisher.
- Yan, Shengming, Jieming Chen, and Shanhua Yang. 2003. "Living Arrangements and Old-Age Support." in *China's Revolutions and Intergenerational Relations*, edited by M. K. Whyte. Ann Arbor: Center for Chinese Studies, The University of Michigan.
- Yount, K. M. and Z. Khadr. 2008. "Gender, Social Change, and Living Arrangements Among Older Egyptians During the 1990s." *Population Research and Policy Review* 27:201-225.
- Zeng, Y. 2008. "Introduction to the Chinese Longitudinal Healthy Longevity Survey (CLHLS)." in *Healthy Longevity in China: Demographic, Socioeconomic, and Psychological Dimensions*, edited by Y. Zeng, D. L. Poston, D. A. Vlosky, and D. Gu. Dordrecht, The Netherlands: Springer Publishing.
- Zeng, Y. and L. George. 2002. "Extremely Rapid Aging and the Living Arrangement of Elderly Persons: the Case of China." *Living Arrangements of Older Persons, Population Bulletin of the United Nations, Special Issue Nos. 42-43*.
- Zeng, Y. and D. Gu. 2008. "Reliability of Age Reporting among the Chinese Oldest-old in the CLHLS Data Sets." Pp. 61-78 in *Healthy Longevity in China: Demographic, Socioeconomic, and Psychological Dimensions*, edited by Y. Zeng, D. L. Poston, D. A. Vlosky, and D. Gu. Dordrecht, The Netherlands: Springer Publishing.
- Zeng, Yi and James W. Vaupel. 2002. "Functional Capacity and Self-Evaluation of Health and Life of Oldest Old in China." *Journal of Social Issues* 58:733-748.

- Zhang, Yuanting and Franklin W. Goza. 2006. "Who will care for the elderly in China?: A review of the problems caused by China's one-child policy and their potential solutions." *Journal of Aging Studies* 20:151-164.
- Zhu, Haiyan and Yu Xie. 2007. "Socioeconomic Differentials in Mortality Among the Oldest Old in China." *Research on aging* 29:125-143.
- Zimmer, Z. 2005. "Health and Living Arrangement Transitions Among China's Oldest-Old." *Research on aging* 27:526.
- Zimmer, Z. and S. K. Kim. 2001. "Living arrangements and socio-demographic conditions of older adults in Cambodia." *Journal of Cross-Cultural Gerontology* 16:353-381.
- Zimmer, Zachary. 2008. "Health and Living Arrangement Transitions among China's Oldest-old." Pp. 215-234 in *Healthy Longevity in China: Demographic, Socioeconomic, and Psychological Dimensions*, edited by Y. Zeng, D. L. Poston, Jr., D. A. Vlosky, and D. Gu. Dordrecht, The Netherlands: Springer Publisher.
- Zimmer, Zachary, Julia Kwong, Xianghua Fang, Toshiko Kaneda, and Zhe Tang. 2007. "Child Coresidence Among Older Adults Living in Beijing, China: Trends, Determinants and Transitions." Pp. 5-28 in *New Perspectives on China and Aging*, edited by I. G. Cook and J. L. Powell: Nova Science.
- Zsembik, Barbara A. 1996. "Preference for coresidence among older Latinos." *Journal of Aging Studies* 10:69-81.

Tables

Table 1:
Actual Living Arrangement

Living Arrangement	N	Percent
Living alone (or with spouse), children are not nearby	1504	9.62
Living alone (or with spouse) and children living nearby	3381	21.62
Coresidence with children	10,027	64.12
Institutions	422	2.70
Other (other family members, missing data)	304	1.94
Total	15638	100.00

Preferred Living Arrangement (missing values imputed)		
Living alone (or with spouse), regardless of residential distance of children	1480	9.46
Living alone (or with spouse) and children living nearby	4140	26.47
Coresidence with children	9449	60.42
Institutions	569	3.64
Total	15638	100.00

**Table 2:
Living Arrangements and Health**

Living Arrangement	N	Mean Self-rated health (higher is worse)	% of sample self-rates health as poor	% of sample with ADL disability
Lives Independently	4885	2.59 (.014)	51.11%	11.20%
Co-residence with children	10,027	2.60 (.009)	50.49%	30.82%
Institution	422	2.57 (.053)	48.67%	41.33%
Other	304	2.69 (.060)	50.80%	50.40%

Living Arrangement Concordance and Health

	Concordance	N	Mean SRH	% of sample self-rates health as poor	% of sample with ADL disability
Lives Independently	Yes	3733 (79.76%)	2.53*** (.015)	48.21%+++	10.31%+++
	No	947	2.80 (.031)	59.45%	14.68%
Co-residence	Yes	8275 (83.86%)	2.59 (.009)	51.16%	32.54%+++
	No	1592	2.56 (.023)	50.88%	21.86%

***t-test $p < 0.001$

+++ test of proportion $z < 0.001$

Table 3: Sample Distribution

	Total (N=14547)	Lives Independently (N=4680)	Co-residence with Children (N=9867)
Living Arrangement Concordance ^a	79.55	79.76	83.86
Age ^{***}	86.10	80.55	88.47
Male (%) ⁺⁺⁺	42.36	53.72	37.14
Minority (%) ⁺⁺⁺	6.2	3.68	7.38
Urban (%)	44.38	42.32	43.82
Years of Education ^{***}	2.11	2.73	1.77
Agriculture/Fishery Occupation (%) ⁺⁺⁺	61.44	58.12	64.21
Economic independence (%) ⁺⁺⁺	24.79	37.70	18.64
Lives in own home (%) ⁺⁺⁺	38.18	67.72	24.93
Widowed (%) ⁺⁺⁺	66.62	39.30	78.41
Married (%) ⁺⁺⁺	31.19	58.80	19.41
Divorced/Separated (%)	2.10	1.89	2.17
Number of Children ^{***}	3.90	4.01	3.85
Children live nearby (%) ⁺⁺⁺	61.50	72.05	57.15
One or more Chronic Health Condition(s) (%) ⁺⁺	59.53	61.05	58.61
Cognitive Disability (%) ⁺⁺⁺	40.54	25.43	47.31
Positive Outlook Index ^{***}	9.28	10.01	8.95

t-tests and tests of proportion are between living independently and co-residence with children groups

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

+ z<.05 ++ z<.01 +++ z<.001

^a cannot be compared by z/t test

Table 4: Odds Ratios Predicting Preference for Co-residence with Children/Grandchildren

		Prefers Co-residence
Lives with children		16.31***
Age	1.03***	1.03***
Male	0.89*	0.88*
Minority Ethnicity	2.14***	1.74***
Urban	1.06	0.96
Educated	1.03	0.97
Agriculture/Fishery Occupation	1.10+	1.15*
Economic Independence	0.61***	0.64***
Home in own name	0.39***	0.76***
Married ^a	0.43***	0.71***
Divorced/Separated ^a	0.76*	0.84
Two Children ^b	0.93	0.86
Three Children ^b	0.95	0.86
Four Children ^b	0.88	0.84
Five or more children ^b	0.82*	0.83+
Children Living Nearby	0.64***	0.91+
N	14372	14632
Chi-Square	3266.69	6776.54
DF	15	16

***p<0.001; **p<0.01; *p<0.05; +p<0.1

a – compared with widowed elders

b – compared with having one living child

Dropped cases with no children and missing data on marital status

Table 5: Odds Ratios Predicting Living Arrangement Concordance for Elders Co-residing with Children and Elders Living Independently

Living Arrangement	Co-resides with children	Lives Independently
Age	1.03***	0.98***
Male	0.88+	1.11
Minority Ethnicity	2.67***	1.20
Urban	0.99	1.07
Educated	1.06	1.19+
Agriculture/Fishery Occupation	1.20**	0.94
Economic Independence	0.71***	1.83***
Home in own name	0.69***	1.09
Married ^a	0.58***	1.05
Divorced/Separated ^a	0.93	1.80+
Two Children ^b	0.93	1.32
Three Children ^b	0.85	1.13
Four Children ^b	0.95	1.51*
Five or more children ^b	0.95	1.54*
Children Living Nearby	0.87*	1.06
N	9784	4588
Chi-Square	666.77	165.43
DF	15	15

***p<0.001; **p<0.01; *p<0.05; +p<0.1

a – compared with widowed elders

b – compared with having one living child

Table 6: Living Arrangement Concordance and Other Factors Predicting Poor Self-Rated Health

	Model I	Model II	Model III	Model IV	Model V
Concordance					
Coresidence Concordance	0.86**	0.88**	0.89*	0.87**	0.88*
Independent Living Concordance	0.85**	0.85**	0.84**	0.87*	0.91+
Demographic					
Age	1.01***	1.01***	1.01***	0.99***	0.99***
Male	0.86***	0.88**	0.85***	0.96	0.96
Minority	1.04	1.03	1.03	1.13+	1.08
SES					
Urban		1.04	1.04	0.99	1.02
Educated		1.06	1.06	1.12*	1.12*
Agriculture/Fishery Occupation		0.92+	0.92*	0.98	0.96
Economic independence		0.64***	0.63***	0.66***	0.70***
Lives in own home		1.22***	1.21***	1.23***	1.20***
Family Care					
Married ^a			1.15**	1.10*	1.10+
Divorced/Separated ^a			1.15	1.15	1.14
Two Children ^b			0.88	0.85+	0.86+
Three Children ^b			0.87+	0.86+	0.87+
Four Children ^b			0.88	0.88	0.91
Five or more children ^b			0.85*	0.84*	0.87+
Children live nearby			1.03	1.07+	1.03
Health					
ADL disabled				1.76***	1.56***
Chronic Health Condition(s)				2.04***	2.02***
Cognitive Disability				1.87***	1.42***
Personality					
Positive outlook					0.90***
N	14445	14445	14445	14445	14445
Chi-Square	65.48	172.15	186.07	1143.44	1683.58
DF	5	10	18	20	21

***p<0.001; **p<0.01; *p<0.05; +p<0.1 ;

a – compared with widowed elders

b – compared with having one living child

Table 7: Living Arrangement Concordance and Other Factors Predicting ADL Disability

	Model I	Model II	Model III	Model IV	Model V
Concordance					
Coresidence Concordance	1.30***	1.29***	1.30***	1.31***	1.32***
Independent Living Concordance	0.66***	0.67***	0.67***	0.70***	0.72***
Demographic					
Age	1.10***	1.10***	1.10***	1.09***	1.08***
Male	0.77***	0.77***	0.75***	0.84**	0.84**
Minority	0.55***	0.60***	0.61***	0.60***	0.59***
SES					
Urban		1.49***	1.48***	1.52***	1.55***
Educated		0.97	0.96	1.09	1.08
Agriculture/Fishery Occupation		0.70***	0.72***	0.71***	0.71***
Economic independence		0.85*	0.81**	0.95	0.97
Lives in own home		0.95	0.93	0.91+	0.90+
Family Care					
Married ^b			1.27**	1.25**	1.24**
Divorced/Separated ^b			1.05	1.06	1.06
Two Children ^c			0.91	0.89	0.90
Three Children ^c			0.90	0.91	0.91
Four Children ^c			0.90	0.92	0.95
Five or more children ^c			0.96	1.01	1.03
Children live nearby			0.78***	0.76***	0.74***
Health					
Self-rates health as good				0.54***	0.59***
Chronic Health Condition(s)				1.93***	1.93***
Cognitive Disability				3.12***	2.63***
Personality					
Positive outlook					0.94***
N	14455	14455	14455	14455	14455
Chi-Square	2966.79	3171.79	3215.77	4246.73	4361.97
DF	5	10	17	20	21

***p<0.001; **p<0.01; *p<0.05; +p<0.1

a – compared with widowed elders

b – compared with having one living child