Shifts in Coresidence Among the Oldest-old in China: Comparing Decedents and Survivors

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ABSTRACT

What we know about transitions in coresidence of older adults in China is based upon panel data involving survivors. This paper examines the tendency to shift and determinants of shifts in coresidence with adult children among very old, comparing survivors of an inter-survey period with decedents. Data come from the Chinese Longitudinal Healthy Longevity Survey covering the period 1998-2005. Baseline and follow-up surveys indicate shifts in coresidence, defined as change from not living in the same household to living with an adult child, and the reverse. Rates of shifting are calculated adjusted for time to follow-up. Logistic regressions examine predictors of shifts among four groups: baseline coresidents and non-coresident survivors and decedents. Results show decedents and non-coresidents are more likely to shift status than survivors and coresidents. Among all groups, covariates related to level of physical and material need, in particular a count of Activities of Daily Living and marital status at baseline and follow-up, are the strongest predictors of coresidential shift. In conclusion, pre-death is a time of flux in living situation. The needs of a very old person dominate coresidential shifts and stability, lending support to an altruistic notion of living arrangement decision making in China.

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INTRODUCTION

What we currently know about coresidence of older adults with adult children in China, and for that matter other East and Southeast Asian countries, is based upon either cross sectional samples or, in the case of transitions, panel samples that consider survivors of an inter-survey period (United Nations, 2005). These samples normally consider adults within a relatively wide age range, usually those 50 to 60 and older. The current study extends and focuses our understanding by considering two samples of individuals aged 80 and older, one of which survived to the end of an inter-survey period and another of which died during period. The study then compares rates and determinants of coresidential shifts or changes across these two populations.

The addition of a group of decedents to the discourse is consequential and justified given broad social changes that are occurring in China and the potential of learning about the impact of these changes. A normative system of coresidence, with an older adult living with at least one adult child, has been the basis of much old-age support in China (Bongaarts & Zimmer, 2002; Knodel & Debavalya, 1997; Logan, Bian, & Bian, 1998; Silverstein, Cong, & Li, 2006; Sokolovsky, 2001). Adult children are indeed considered by many to be the foundation of the support system for the very old and for other elders in need of instrumental and material assistance. But, China is one of a number of countries in East and Southeast Asia experiencing fundamental social changes that are likely to be impacting heavily on these traditional structures. One is the movement from a young to an older aged population, which reduces the availability of adult children with whom to coreside (Kane & Choi 2006; Poston & Duan 2000; Yuan, Tien, Zhang, Ping, Li, & Liang, 1992). Another is concomitant socio-economic change, which may impact attitudes and values surrounding traditional modes of old-age support (England, 2005). Since the very end of life is a critical period of time when functional and material assistance is often required and support needs are magnified, it is reasonable to posit that changes that are altering coresidence patterns and preferences within the Chinese family

would impact least upon those at the end of life, given the strength of cultural norms, and most on those more healthy and less in need.

To be sure, non-coresident children provide substantial levels of assistance in China. But, the importance of notions of filial piety and related Confucian teachings means that coresidence remains a way of transferring intergenerational support and is still regarded as an indicator of well-being for the functionally limited and the very old (Ebrey, 2000; Hermalin & Myers, 2002; Phillips, 2000; Yuan, 1990). The centrality of this tradition, coupled with rapid social change, has resulted in a certain amount of deliberation and concern regarding the possibility of deterioration of the tradition of child coresidence (Gui 2001; Sheng & Settles, 2006; Whyte, 2003; Zhang & Goza 2006). Given this concern, there are surprisingly few studies that have examined transitions and change in child coresidence. Those investigations that do exist suggest mixed realities including resiliency of coresidence norms and evidence of rates of coresidence decline (Logan, et al., 1998; Zeng & Wang, 2003; Zhang, 2004; Zimmer, 2005; Zimmer, Kwong, Fang, Kaneda, & Tang, 2007). Whether these changes reflect concomitant transformations to the structure of support is uncertain. Some research has indicated, for instance, that when near residence is considered, elders tend to remain within close proximity of children (Zimmer & Korinek 2008).

This above cited literature on coresidence of older adults with their children in China draws upon a number of explanatory perspectives. However, there are two that, seeming most relevant, have gained prominence. The first is a view that coresidence patterns are driven by the availability of children with whom to coreside. This view recognizes that declines in fertility are leading to both population aging and smaller family sizes. This decreases the availability of adult children with whom to coreside, a factor that is often pointed to as being among the most challenging features of the shifting demographic reality in China (Banister, 1990; Lin, 1994; Zeng & George, 2001; Zimmer & Kwong, 2003). Some writings even convey a type of panic regarding the possibility that older

adults will, in the future, not have enough family to fulfill their needs, creating urgency for public interventions of unprecedented magnitude (Du & Guo, 2000; Gui, 2001; Phillips, 2000). Older adults in China also tend to state a preference for living with a son and the availability of a son is an additional concern (Logan & Bian, 1999).

This 'demographic' perspective may overlook the impact of embedded customs that can act upon society in ways that overshadow changes in family size (Ofstedal, Reidy, & Knodel, 2004; Whyte, 2003). Thus, an altruistic framework, with its roots in writings on family economy, is gaining recognition (Becker, 1974; Frankenberg, Chan, & Ofstedal, 2002; Hermalin, 2002; Lee, Parish, & Willis 1994; Zimmer, Korinek, Knodel, & Chayovan 2008). The perspective relies on notions of the primacy of family over individual interests in shaping decisions and behaviors. The perspective interconnects with norms of filial piety, respect for elders and indebtedness to parents which are common in Chinese philosophical thinking (Whyte, 2003; Yuan, 1990). Individuals acting within an altruistic system consider the needs of older family members to be important in decision-making. Thus, the younger generation, who are able to work and secure material resources, provide help for aging parents when the latter do not receive income or develop physical functioning problems, such as disabilities, which hamper their ability to complete necessary daily tasks.

These perspectives lead to hypotheses regarding determinants of coresidence shifts within a changing Chinese environment. For instance, family size and having a son should positively relate to the probability that an older adult moves in with a child and negatively relate to the probability of moving out. Growing physical and material needs, which may be measured by health, income and widowhood status, should also increase the probability of shifts towards coresidence and decrease the probability of moving away from a coresidential situation. Given the altruistic nature of Chinese society, these tendencies may be heightened in the period just prior to death when sentiments may strengthen and needs increase. The current study examines these hypotheses using a unique dataset

that recorded child coresidence among very old individuals during a baseline survey and after a follow-up, with information at follow-up being gathered from respondents, from proxy respondents for survivors unable to answer survey questions, and from next of kin of decedents. The study explores and compares the tendency of decedents versus survivors to shift child coresidence during the inter-survey period, and compares determinants of these shifts.

METHODS

Data come from the Chinese Longitudinal Healthy Longevity Survey (CLHLS), a survey conducted in randomly selected counties and cities in 22 Chinese provinces, which together account for over 85% of the total population of China. The survey consists of four available waves of data. The wave was conducted in 1998 and involved 8,803 old-old individuals, between ages 80 and 105. A small number of cases over 105 are omitted due to unreliability in age reporting (Zeng & Gu, 2008). Additional waves were conducted in 2000, 2002 and 2005. These waves involved returning to persons interviewed previously, plus an add-on that accounted for attrition. The CLHLS utilized proxies in cases where interviewees were unable to respond due to health problems. In a case of death during the inter-survey period, a short interview was conducted with 'next of kin' considered to be spouse first and adult child second. This unique aspect of the survey design makes the CLHLS valuable for the examination of coresidence shifts prior to death. Due to the overall aim of the CLHLS, which is to examine factors associated with healthy longevity, the surveys over-sample extremely old persons. This is balanced with a weighting scheme that measures the inverse of the probability of being selected based on population estimates by age and sex (Zeng, Yuzhi, & George, 2003; Zeng, Vaupel, Zhenyu, Chunyuan, & Yuzhi 2002; Zeng, Vaupel, Zhenyu, Chunyuan, & Yuzhi 2001). All results in this study use the weighted sample except where noted. Several assessments of data reliability and response rates have been conducted (Zeng et al., 2002; Zeng et al., 2001). The

study has, at point of this writing, produced twenty-seven academic English language publications in peer-reviewed journals, many more in Chinese language journals, book chapters, dissertations, MA theses, conference presentations, and, notably, a recent manuscript that reviews many of the fundamental findings of the survey (Zeng, Poston, Vlosky, & Gu, 2008).

The current analysis uses a stacked sample that combines baseline and follow-up surveys across waves. To be included as a valid observation, an individual must have at least one living child at baseline, live outside of an institution at baseline and follow-up, and have coresidence information recorded at baseline and follow-up. While there are 30,712 total baseline observations, the selection criteria bring the number of valid cases down to 23,460. Specifically, about 3,000 have no children at baseline, about 3,000 are lost to follow-up and therefore have no coresident information for the inter-survey period, and about 1,000 are living in institutions. Sensitivity analysis was conducted that included these other portions of the sample and findings compare closely with those reported below.

Being a 'coresident' is defined as living with at least one child who, due to the age of the sample, would in all cases be an adult (the term 'child' reflects convention). Coresidence at baseline is determined from a household roster that noted the relationship of each household member to the older adult being interviewed. The recording of coresidence at follow-up depended upon survival status. For survivors, interviews were completed with the older adult or proxy. If an interviewer returned and found the respondent had died during the inter-survey period, a brief decedent questionnaire was administered to the next of kin. This questionnaire asked about coresidence status at time of death. For the analysis, the sample is divided into four groups of individuals: 1) decedents that were coresident at baseline (N=2,553); 2) survivors that were coresident at baseline (N=4,210); 3) decedents that were non-coresident at baseline (N=7,575) and; 4) survivors that were non-coresident at baseline (N=9,122).

The main outcome, which is a 'shift' in coresidence, is defined as a change in status from the baseline to follow-up. For non-coresidents at baseline, this means living with at least one child at follow-up. For coresidents at baseline, this means not living with any own children at follow-up. A shift is coded as 1; stable coresidence status is coded as 0. In total, 21.2% of the baseline sample shifted coresidence status. Detailed information on the rates of shifting by baseline coresident and survival status is provided in the results section that follows.

Follow-up surveys were conducted at about the same time of year as baseline surveys and therefore inter-survey periods are two years for the 1998 and 2000 baselines and three years for the 2002 baseline. Thus, the follow-up period is about 24 months or 36 months for survivors. The follow-up period is shorter for decedents because information that was obtained during a scheduled interview with next of kin anchored responses to the time of death, which would have occurred earlier in time. For this reason, and because inter-survey periods differ by year of baseline, we adjust for length of follow-up in the analysis that follows.

Covariates are divided into five categories; all are measured at baseline, except for marital status and Activities of Daily Living (ADL) limitations, which are measured at baseline and follow-up. Covariates and distributions by survival and coresidence status at baseline are shown in Table 1.

Table 1 about here

1) *Demographic characteristics* include age, sex and place of residence, whether urban or rural.

2) *Availability* includes number of children and having a son. The former is categorized into 1, 2 or 3, 4 or 5, and 6 or more children.

3) *Socioeconomic characteristics* include main occupation throughout life and highest level of education. Specific occupations are difficult to determine given the current data, but a broad categorical response allows separation into agriculture (the comparison group), white collar (administrative, clerical, etc.), industrial (for example, working in factory) and other. Other includes

military occupations, housewife, and occupations that are otherwise unclassified. Education is determined from a survey question on years of formal schooling and coded as none (the comparison group), primary (1 to 6 years) and more than primary (7 or more years). There are a small number of missing cases for education, and 'education unknown' is included as a category.

4) *Needs* relate to potential physical and material needs that may necessitate assistance for daily survival. The first is measured at baseline only and is whether the older adult's main source of financial support is a pension. In China, having a pension is a proxy for having worked within a state owned enterprise, but it also indicates whether other material support is required for those not working. The second is marital status, recorded at baseline and follow-up. Marital status for survivors is determined at the scheduled interview time. For decedents, it is determined from the post-death interview. Being married at follow-up is the contrast category and is compared to being married at baseline only (which maps to experiencing widowhood in the inter-survey period) and not being married at baseline or follow-up (likely widowed prior to baseline). The third need characteristic, also measured at baseline and follow-up, is based on questions about disability using the Katz ADL scale (Katz, Ford, Moskowitz, Jackson, & Jaffee 1963). Individuals were asked if they could perform a series of activities on their own, without assistance from others or devices. These included: bathing, dressing, toileting, transferring and feeding. A limitation score is created by summing the number of items with which an individual reports a difficulty. For survivors, follow-up items are asked about experience at the time of the scheduled interview. For decedents, these questions were posed to next of kin during the post-death interview with a time frame referring to the two weeks preceding death. Multivariate models consider ADL limitations at both baseline and follow-up simultaneously. When limitations are controlled, the result of follow-up ADL limitations can be interpreted as the impact of a change in limitations on shift in coresidence. In addition,

models test for interactions between baseline and follow-up with the notion that it may be limitations at both times that concurrently provide the greatest impetus for coresidence.

5) *Time to follow-up* is measured as months that passed between baseline and follow-up.

Two main sets of results are reported. First, the probability of shifting coresidence across survival and coresidence status at baseline is calculated. The probability is reported unadjusted and then adjusted for the time that elapses between baseline and follow-up. The unadjusted probability indicates the chance that an individual will have shifted coresidence status based on coresidence status at baseline and follow-up. The adjusted probability calculates a monthly rate of shifting based on the total probability and the average number of months to follow-up for each grouping. These adjusted estimates assume, by necessity (given lack of detailed information on number and timing of shifts in coresidence), that one change in coresidence is made over the inter-survey period for the shifters, the changes occur at random times over the period, and no changes are made for the non-shifters. Next, there are four regression models using a logit link function, each of which predicts shift in coresidence among one of the four analytical groups. Models adjust for covariates simultaneously. In order to provide an intuitive understanding of the regression results as they relate to physical needs, predicted probabilities across ADL limitations at baseline and follow-up are calculated. Huber-White Sandwich estimators are used for standard errors.

RESULTS

The row labeled 'probability of shifting unadjusted for months to follow-up' in Table 2 indicates the chance that an individual who began in one coresident state at baseline ends up in the opposite state at follow-up. Non-coresidents clearly have a higher probability of shifting status; meaning moving in with a child is more common than moving out. Within the non-coresident group, those that died were more likely to move prior to death than were survivors prior to the

follow-up interview. For the baseline coresidents, unadjusted results indicate that decedents and survivors are equally likely to shift. However, the bottom row of the table, which shows the average monthly rate of shifting coresidence, assuming that one change in coresidence is made over the inter-survey period for the shifters and no changes are made for the non-shifters, indicates that when time to follow-up is adjusted, decedents are more likely to have shifted status than survivors, regardless of baseline coresidence status. Decedents that were non-coresident have a monthly shifting rate of .0368 compared to .0117 for their survivor counterparts. This means the average proportion of non-coresident decedents who shifted coresidence each month was 3.68%, given the assumptions made regarding timing and number of changes. Decedents that are coresident at baseline have a monthly shifting rate of .0087, as compared to .0060 for their survivor counterparts. It is likely that many of the changes would have occurred close to the time of death, so there is very likely great variation from this average on a month to month basis. However, despite what we do not know about the timing and number of coresident changes during the inter-survey period, the monthly rate highlights the greater tendency of decedents to shift coresidence in comparison to survivors.

Table 2 about here

Table 3 presents models that predict a shift in coresidence, with each considering one of the groupings under scrutiny. The most notable result emerging is a strong and consistent association of physical and material need with shifts in coresidence. Number of limitations at follow-up, which is an indicator of magnitude of disability, positively associates with the probability that a non-coresident ends up with a child and negatively associates with the probability that a coresident does not. This pattern holds among both decedents and survivors. ADL limitations at baseline are generally not predictive but controlled, suggesting that it is change in limitations that is the essential

determinant of coresidence shift. However, the interaction between baseline and follow-up ADL limitations is important for survivors, moderating the impact of limitations at follow-up.

Table 3 about here

Also of significance is marital status. Those married at follow-up, which is the reference category, have a lower probability of shifting from non-coresidence to coresidence, and a higher probability of shifting from coresidence to non-coresidence, among decedents and survivors. Being married at baseline but not at follow-up is mostly the result of becoming widowed. Those becoming widowed are more likely to move in with a child and less likely to move out. The same effects occur among those not married at either time period. Pension has some effect as well. If the main source of income is a pension, non-coresidents are less likely to end up living with a child and coresidents are more likely to move in the other direction.

Other results appear to be overshadowed by the strength of needs covariates. Having a son does significantly increase the chance of a shift in coresidence among non-coresident survivors, but overall the impacts of the 'availability' covariates are moderate. Having a white collar occupation increases the chance that a non-coresident decedent will live with a child before death but also increases the chance that a coresident survivor will not, suggesting that white collar respondents are particularly mobile. Education has some but moderate effects.

Finally, there is a surprising effect of time to follow-up. Longer follow-up is associated with a greater probability of shifts among survivors. For survivors, greater time between surveys likely provides greater opportunity for shifts in coresidence. The same is not true for decedents, where effects of time are not significant. Follow-up time is shorter for decedents overall, perhaps compressing opportunities, and decisions about changes in coresidence may have more to do with the impending death and the need for care than other reasons that may associate with time. Still, this variation in the effect is at least a bit puzzling.

In order to show the combined effect of ADL limitations at follow-up by coresidence and decedent status, predicted probabilities are presented in Figures 1 and 2. Figure 1 plots the probability that an individual with no limitations at baseline shifts coresidence. Figure 2 plots the probability for an individual with two ADL limitations at baseline. Figure 1 shows that increasing limitations by follow-up greatly increase the chance that a non-coresident becomes coresident. The probability increases for decedents, for instance, from about .45 for those remaining without disability to about .60 for those developing five disabilities by follow-up. For baseline coresidents, more limitations reduce the chances of becoming a non-coresident. For instance, among decedents the probability goes from .20 to .10 when moving from zero to five limitations. Comparing Figures 1 and 2 suggests some influence of the number of baseline limitations on the probability of a coresident shift for survivors. Specifically, the slopes are slightly less dramatic in Figure 2, suggesting that survivors with ADL limitations at baseline may already have made the change in coresidence that addresses their needs.

Figures 1 and 2 about here

Also of note in both figures is that decedents, more so than survivors, experience a greater probability of shifting coresidence, regardless of baseline status. This is somewhat non-intuitive for the coresidents since it means that someone who lives with a child stops living with a child prior to death more frequently than had they not died. It also means, however, that decedents are in a greater state of coresident flux than survivors. To aid in interpretation we turn to an additional question from the CLHLS decedent questionnaire which asked the next of kin who the decedent's main caregiver was at time of death. The result is shown in Table 4. Among all four groups, a child is most frequently listed as the main caregiver. But, among those making the move from coresident to non-coresident, the child is the main caregiver only 53% of the time compared to 92% of the time for those that remained coresident. Similarly, among non-coresidents at baseline, the child is

named as the main caregiver 43% of the time for those that remained non-coresident but 82% of the time among those that became coresident. While causal direction cannot be assured from this information, it does suggest that changes in coresidence are at least partly a function of who is providing pre-death care.

Table 4 about here

DISCUSSION

The theme of child coresidence is destined to gain momentum within the gerontology literature that examines the consequences of population aging in rapidly developing societies. The reasons for a burgeoning interest relate to the demographic and economic transformations that accompany rapid social change. These have the potential to threaten cultural underpinnings in ways that could alter relations between elderly members of the society and others. Given traditions that are often described as being geared toward ensuring altruistic and filial behaviors, and given the previously abundant supply of children resulting from high fertility rates, such changes pose challenges related to maintaining support structures, especially for the very old. They also imply that increased obligations may be placed on the formal sector. There is good reason, therefore, to monitor child-coresidence in a country like China to determine whether traditional forms of organization are being maintained in the face of rapid social change.

To date, living arrangement transition studies in China and other parts of Asia have not specifically examined the period prior to death. This is, however, a critical period and likely consequential for our understanding of old-age support. In the situation of decedents, the study showed a picture of highly adaptable residential situations, perhaps more so than might have been expected. Shifts in coresidence among decedents occurred with greater regularity than among survivors, especially among the very old that were non-coresident at baseline. Almost half of these

individuals changed to living with a child during the inter-survey period, a rate that was calculated to be an average of about 3.7% per month given assumptions about timing and number of coresidence shifts. In comparison, non-coresident survivors shifted at a rate of about 1.1% per month. This marked difference tells us something about both the reasons for shifting coresidence and about the period before death. It is known that the last few months of life can be difficult for the very old, particularly with respect to challenges related to the need for instrumental support with formal and informal support needs intensifying. Our results suggest that adult children are likely responsive, and living situations do change according to these increases in needs.

Dividing over 20,000 baseline observations into decedent and surviving coresidents and non-coresidents at baseline, the study examined predictors of a coresidence shift and provided some explanation for these. On balance, the study lends support to the altruistic framework and somewhat less to the demographic. This is based on the finding that across all the groupings covariates associated with need, specifically physical functioning as measured by ADL limitations at baseline and follow-up, material needs as measured by receipt of pension, and existence of a main support source as measured by marital status at baseline and follow-up, were by far the strongest determinants of shifts in coresidence. Taken together, this is suggestive of care giving needs underlying coresidence choices. It should be emphasized that although decedents tend to be in a greater state of flux vis-à-vis coresidence, determinants of shifts in coresidence are similar across survivorship or baseline coresident status. A main finding is that those that experience an increase in disability are more likely to change to living with a child and less likely to move in the other direction whether they died during the inter-survey period or whether they survived. This result portends well for overall notions of the maintenance of filial obligations and altruistic notions of family even within a rapidly changing China.

It may be surprising that coresidents soon to die are more likely to move out of a situation where they are living with children than are survivors. Additional analyses not reported here indicate that this cannot be explained by the soon to be deceased moving to an institutional setting. Alternatively, the reason seems to be that the time before death is simply a time of instability and adjustment. Results that were shown indicated that the caregiver of the decedent may determine the direction of the shift. A shift away from living with a child is more likely when someone other than a child, such as a spouse or other family member, is the main caregiver.

While the study provided suggestions about what happens to coresidence prior to death among very old in China, limitations suggest the need for further investigation. First, despite the longitudinal nature of the data, causal connections are difficult to establish. It is uncertain, for instance, whether movement out of coresidence occurs because another network member had subsumed the role of caretaker, or whether movement out prompted a change in caretaker. Second, our study does not indicate who is moving. That is, data does not distinguish situations where the older adult is moving in with a child or a child is moving in with the older adult. Each situation may occur for different reasons. Third, the reporting of ADLs by different sources may be problematic. At baseline, some limitations are reported by proxies. At follow-up, all limitations for decedents are reported by proxies. Proxy reports may be different from self reports, and proxy reports given after time has passed may be subject to recall error. Yet, results provided here are so robust that it is hard to imagine slight adjustments based on differences between proxied and non-proxied responses would change the overall conclusions. Fourth, it is unknown when a shift in coresidence occurred or whether there was more than one over time. The former issue may be particularly problematic for decedents who moved only for a very short period, such as a few days, just before death. The rate of coresidential shifting among decedents could, in this case, be reflective of the need for short-term care rather than longer-term planning. Yet, even in the case of short-term moves, the main

points of our findings remain valid. That is, there is coresident reaction to needs among both decedents and survivors, and decedents, likely for a large number of reasons that relate to additional needs, are more likely to shift status.

Future research should examine how much and what type of care is being provided by children that live nearby and elsewhere. Research on coresidence in China and other rapidly developing societies has often ignored situations of near or pseudo-coresidence. If there is a change in living situations occurring in these countries, it could be one towards more independent living. Yet, while the form of the living situation may change, the function may remain intact. That is, older people may still receive the assistance they require, but delivered by family members and adult children who set up independent residences not far from their elderly parents.

Finally, as China and other rapidly developing societies experience continued social change, the fate of intergenerational living arrangements are uncertain, especially when declines in family size register for elders in need of old-age support. For the current sample, family sizes are still relatively large. It is quite possible that as long as there are numbers of living children, need dominates living arrangement decision making. When family sizes drop to one child, a situation that will be quite common in China as well as other countries in the region in the near future, informal access may change, which may also result in necessary changes to institutional access and services. How this impacts on coresidential living will need to be closely observed.

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Table 1: Distributions of covariates by survival and coresident status at baseline

Baseline coresident status	Non-coresident		Coresident	
Survival status	Decedents	Survivors	Decedents	Survivors
Demographic characteristics				
Mean age	84.3	83.0	84.9	83.6
% Female	50.6	56.5	62.3	66.9
% Rural resident	68.0	67.6	72.5	70.6
Availability				
Number children				
% With 1 child	12.6	11.7	12.7	12.0
% With 2 or 3 children	27.5	29.3	31.9	32.3
% With 4 or 5 children	35.7	36.0	33.0	32.4
% With 6+ children	24.1	23.0	22.4	23.2
% that have a son	89.6	88.3	90.8	92.4
Socioeconomic characteristics				
Main lifetime occupation				
% Agricultural occupation	37.9	42.3	38.3	45.0
% White collar occupation	5.8	8.9	4.3	5.3
% Industrial occupation	44.6	37.8	46.0	35.3
% Other	11.7	11.0	11.4	14.5
Education				
% No education	61.3	62.3	68.3	66.7
% Primary education	30.7	29.1	24.9	25.7
% More than primary	7.8	8.4	6.2	7.2
% Education unknown	0.2	0.2	0.6	0.5
Needs				
% Main support is pension	19.7	21.5	11.4	14.6
Marital status				
% Married at follow-up	36.5	39.3	12.6	16.2
% Married at baseline only	8.5	7.4	8.1	6.3
% Not married either time	55.1	53.3	79.3	77.5
Mean baseline ADL limitations	0.7	0.2	0.8	0.3
Mean follow-up ADL limitations	2.2	0.4	2.6	0.6
Mean time to follow-up	16.0	28.1	16.3	27.8

All differences across coresident and survival status significant to $p<.00$.

Table 2: Probability of a coresident shift by survival and coresidence status at baseline

	Non-coresident at baseline		Coresident at baseline	
	Decedents	Survivors	Decedents	Survivors
Baseline N[a]	2,553	4,210	7,575	9,122
Number that shifted[a]	1,327	1,233	1,088	1,330
Probability of shifting unadjusted for months to follow-up[b]	.471	.282	.154	.155
Average months to follow-up	17	28	19	28
Monthly rate of shifting adjusted for time to follow-up[b]	.0368	.0117	.0087	.0060

a Unweighted.
b Assuming one change in coresidence over the average number of months of follow-up for every person shifting status.

Table 3: Logistic regression - log odds ratios predicting shift in child-coresidence by baseline coresidence and survival status

	Non-coresident at baseline vs. Coresident at follow-up		Coresident at baseline vs. Non-coresident at follow-up	
	Decedents	Survivors	Decedents	Survivors
Demographic characteristics				
Age	.008	.025^	-.005	-.005
Female	-.144	.100	.146	.079
Rural resident	.068	.188	.133	-.002
Availability				
Number children (comparison 1)				
2 – 3	.535^	.172	-.139	.118
4 – 5	.064	-.107	-.044	.031
6 +	.016	-.049	-.014	.093
Has a son	-.127	.358*	.103	.253
Socioeconomic characteristics				
Occupation (comparison agriculture)				
White collar	.653^	.087	-.061	.462*
Industry	.149	.048	.012	-.089
Other	-.305	.193	.111	-.233
Education (comparison none)				
Primary	.044	.268^	.098	-.014
More than primary	.232	.047	.169	-.614**
Unknown	.281	.580	-1.980^	.324
Needs				
Main source of support is pension	-.461^	-.265^	.423*	.067
Marital status (comparison married at follow-up)				
Married at baseline but not follow-up	1.410**	1.212**	-1.075**	-.098
Not married at baseline or follow-up	1.261**	.755**	-.976**	-.842**
ADL Limitations				
ADL limitations at baseline	.011	.074	.004	-.109
ADL limitations at follow-up	.123**	.272**	-.133**	-.159**
Baseline X follow-up interaction	---	-.071^		.049^
Time to follow-up	.005	.023*	-.000	.029**
Constant	-2.158	-4.924	-.510	-1.645
Log likelihood	-1615.8	2356.3	-3137.7	-3800.3
Chi-square (model)	73.2**	128.1**	47.7**	100.0**

** $p < .01$ * $.01 < p < .05$ ^ $.05 < p < .10$

Figure 1: Predicted probability of shifting coresidence status among those without ADL limitations at baseline, by number limitations at follow-up, originating and survival status

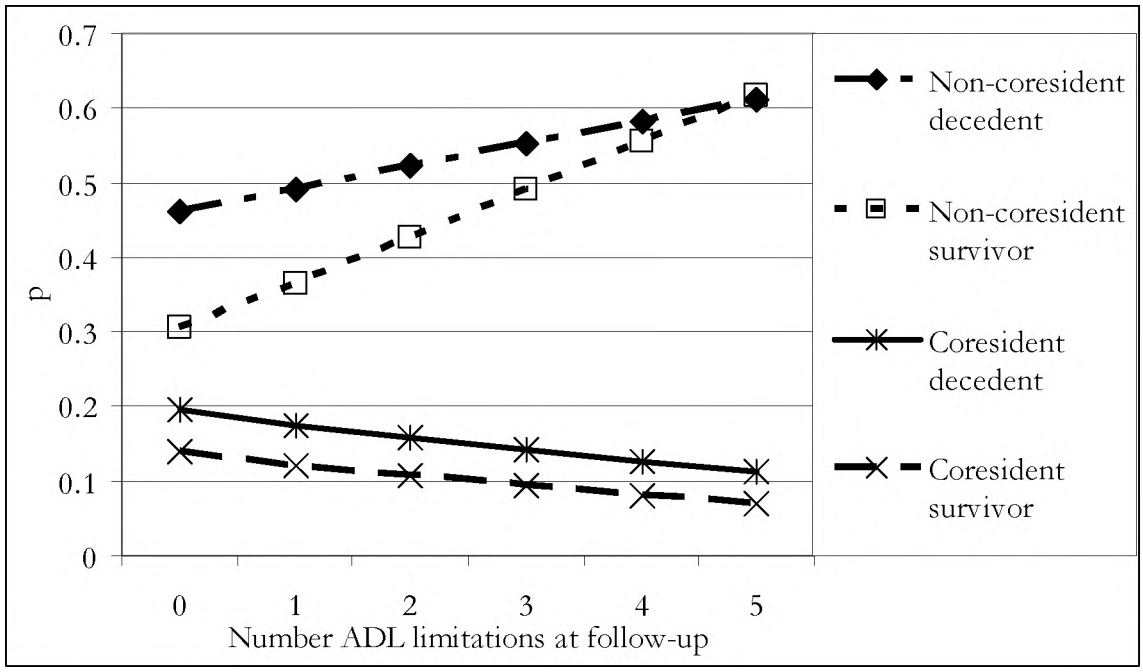

Figure 2: Predicted probability of shifting coresidence status among those with two ADL limitations at baseline, by number of limitations at follow-up, originating and survival status

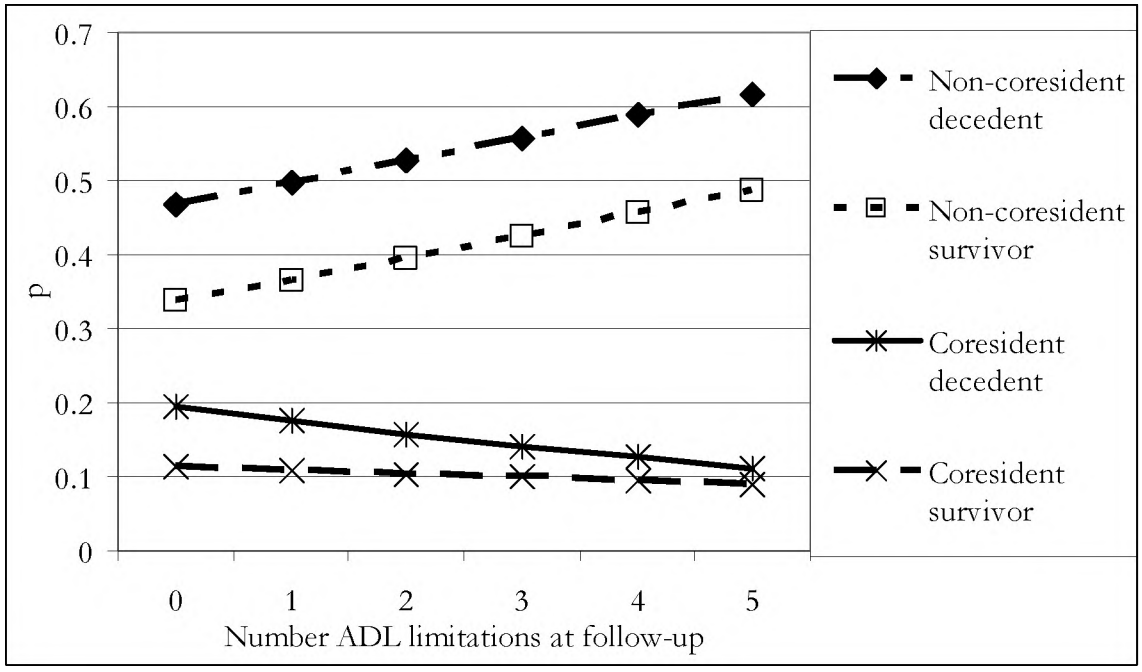

Table 4: Distribution of main caregiver at time of death by coresident status at baseline and follow-up

Coresident status at baseline	Non-coresident		Coresident	
Coresident status at follow-up	Non-coresident	Coresident	Non-coresident	Coresident
Main caregiver at time of death				
- Child	43.3	82.4	53.4	92.0
- Spouse	30.7	4.1	11.4	2.1
- Other family/friend	11.1	7.0	19.8	3.6
- Service	5.2	1.3	2.3	0.5
- None	9.7	5.3	13.0	1.8
	100.0	100.0	100.0	100.0