Living Arrangements, Intergenerational Ties and Well-Being of the Elderly in Beijing

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Abstract

This paper investigates living arrangements among the elderly in Beijing and examines the effect of coresidence on intergenerational ties and of intergenerational ties in general on the well-being of the elderly. I examine these connections using data from the 1999 Living Condition Survey of Beijing Residents along with Logistic Regressions.

I show that coresidence with adult children is still an important living arrangement for the elderly in Beijing. Housing resources and marriage status of the elderly play an important role in determining living arrangements. Coresidence substantially strengthens intergenerational ties related to financial support, physical support or daily care, and emotional support or communication. In urban districts, coresidence has little effect on the quality of living conditions, while strong intergenerational ties, rather than coresidence, greatly improve psychological well-being. In rural counties, coresidence impacts intergenerational ties and well-being more so than in urban districts, and strong intergenerational ties also improve well-being greatly.

I. Introduction

The traditional or Confucian family system in Chinese society, which emphasizes "filial piety" of children to support old-age parents, is generally believed to often take the form of coresidence of parents with one or more adult children. High levels of coresidence in China, as in other East Asian countries, are well known (Fei, 1982; Parish and Whyte, 1978; Tsui, 1989; Zeng, 1991). And studies show that this longstanding living arrangement persists in China despite dramatic changes in various demographic, socio-economic and institutional aspects (Hu and Ye, 1991; Unger, 1993; Logan et al., 1998). As a main social form of old-age support, coresidence is often regarded as a means of contributing to well-being of the elderly mainly due to the belief that coresidence is driven by parents' need and it would facilitate assistance or support from children. In a rapid-aging population, it is important to know how living arrangements are related to intergenerational ties between the elderly and their children and whether coresidence and strong intergenerational ties would improve the well-being of the elderly. This paper examines the reality and expectation of living arrangements of the elderly in Beijing and investigates the role of coresidence on intergenerational ties and the role of coresidence and intergenerational ties on well-being of the elderly.

The data used in this paper come from the Living conditions Survey of Beijing Residents conducted in 1999 by the Research Center of Aging in Beijing. Two thousand elderly aged 60 and older in 18 urban districts and rural counties were interviewed about living arrangement, old age support, health, daily care, and other aspects of life. Of the respondents, only 25 have no child. They are excluded in this study since the aim of this study is to investigate the role of coresidence with adult children on intergeneration ties and well-being of the elderly.

In the next sections, I start with investigating the reality of and attitude toward living arrangements of the Beijing elderly and finding characteristics of the elderly who are coresiding or willing to coreside with children. Then the paper turns to address if coresidence would strengthen intergenerational ties by looking at financial transfer, physical support or daily care and emotional support or communication. And then, the effects of coresidence and intergenerational ties on well-being of the elderly are explored. In the last section, concluding remarks and discussion are addressed.

II. The Reality of and Attitude toward Living Arrangements

Studies show that the level of coresidence in China has not changed much in the last five decades, and the proportion of coresidence is estimated to be 40-50 percent(Fei, 1982; Tsui, 1989; Zeng, 1991; Hu and Ye, 1991; Unger, 1993; Logan et al., 1998). Consistent with those studies, our data show that about 52 percent of the Beijing elderly coreside with adult children in 1999. The proportion of the elderly living with children is slightly higher in urban districts than in rural counties and for female than for male elderly (see figure 1a). In rural counties of Beijing, oldest old is more likely to co-reside with children than young old, while this is not the case in urban area of Beijing (Figure 1b). Both in urban districts and rural counties, the married elderly are less likely to co-reside with children than those separated, divorced or widowed (Figure 1c). In contrast with patriarchal tradition of Chinese family system that stressed coresidence with married sons, the present study shows the elderly having only daughters have the same proportion of coresidence with children compared to those having only sons or having both sons and daughters (Figure 1d). This is in line with other studies that found coresidence with a daughter is more likely in the absence of a son.

The Elderly in Beijing enjoy high proximity to children. In addition to 52 percent of the elderly coresiding with children, 45 percent have nearest children living in Beijing. Among those elderly not coresiding with children, about 40 percent have the nearest child living in the same street or village community, and about 70 percent have the nearest child living in the same district or county, and about 97 percent elderly have the nearest child living in Beijing, indicating a "close-by" residence arrangement.

For those elderly coresiding with children, about 35 percent live in a two-generation household, 62 percent live in a three-generation household, and only about 3 percent are in a household where more than three generations live together. This household generation distribution is similar for male and female elderly, and for urban and rural area.

Table 1 shows that in urban districts, over 40 percent elderly or their spouses own the house where they live, about 24 percent rent the house by self or spouse, only one tenth of the elderly live in a house owned or rented by children, and one fourth of the elderly living in a house owned by their employer or somebody else. There is no big difference in the ownership of house for elderly co-residing with children and those not residing with children in urban districts. In rural counties, more elders own houses than in urban districts. The rural elderly co-residing with children own fewer houses than those not living with children, and the proportion of the elderly whose current house is owned by children is 20 percent more for those co-residing with children than those not living with children.

Compared to the reality of coresidence, desire or expectation of coresidence is higher among Beijing elderly, particularly among the elderly aged 80 or older in rural counties. About 70 percent of elderly express that they are willing to live with children (55 percent are

completely or very willing, 15 percent somewhat willing) in contrast to only 52 percent current coresidence, showing a gap between reality and attitude. This gap is biggest (30 percent) among the elderly aged 80 or over in rural counties. The proportion of elderly who are willing to live with children is slightly higher for female than male, 12 percent higher for separated, divorced or widowed elderly than married elderly, and increased over age (figure 2).

Current living arrangements may strongly influence expressed preference or vise versa. Table 2 shows that elderly who are co-residing with children are more likely to be willing to live with children. Among the elderly who currently co-reside with children, only about 18 percent elderly in urban districts and 9 percent in rural counties expressed that it was completely or somewhat wrong to say that they are willing to live with children, this proportion is increased to 46 percent in urban districts and 47 percent in rural counties respectively among the elderly who currently do not live with children. It is worth to mention that half of the elderly not currently co-residing with children expressed that they are willing to co-reside with children.

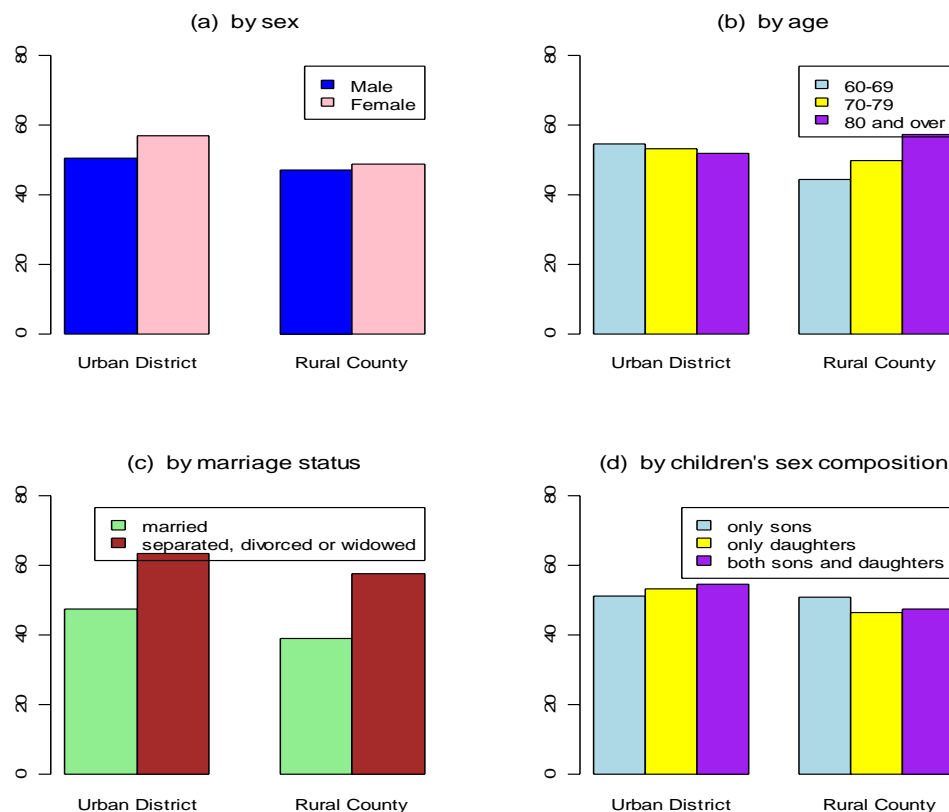**Figure 1   Proportion of elderly coresiding with Children**

Table 1 Ownership of house by living arrangements

	Urban District			Rural County		
	Not coreside	coreside	Total	Not coreside	coreside	Total
own by self or spouse	43.8	40.0	41.8	73.2	55.4	64.7
rent by self or spouse	26.0	21.6	23.6	7.0	2.4	4.8
own by children	3.3	8.3	6.0	14.6	36.9	25.2
rent by children	2.4	7.1	4.9	.5	2.1	1.3
Other(own by employer,etc.)	24.5	23.0	23.7	4.6	3.3	4.0
Total(persons)	580	677	1257	369	336	705

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Table 2   Proportion of elderly willing to live with children

	Urban District			Rural County		
	Not coreside	coreside	Total	Not coreside	coreside	Total
Completely/somewhat not willing	45.5	17.9	30.6	46.7	8.5	28.4
Somewhat willing	18.9	15.8	17.2	16.2	10.3	13.4
Completely/very willing	33.3	65.0	50.4	34.8	81.2	57.0
NA or refuse to answer	2.4	1.3	1.8	2.2		1.1
Total persons	583	682	1265	370	340	710

Figure 2 Proportion of elderly willing to live with Children
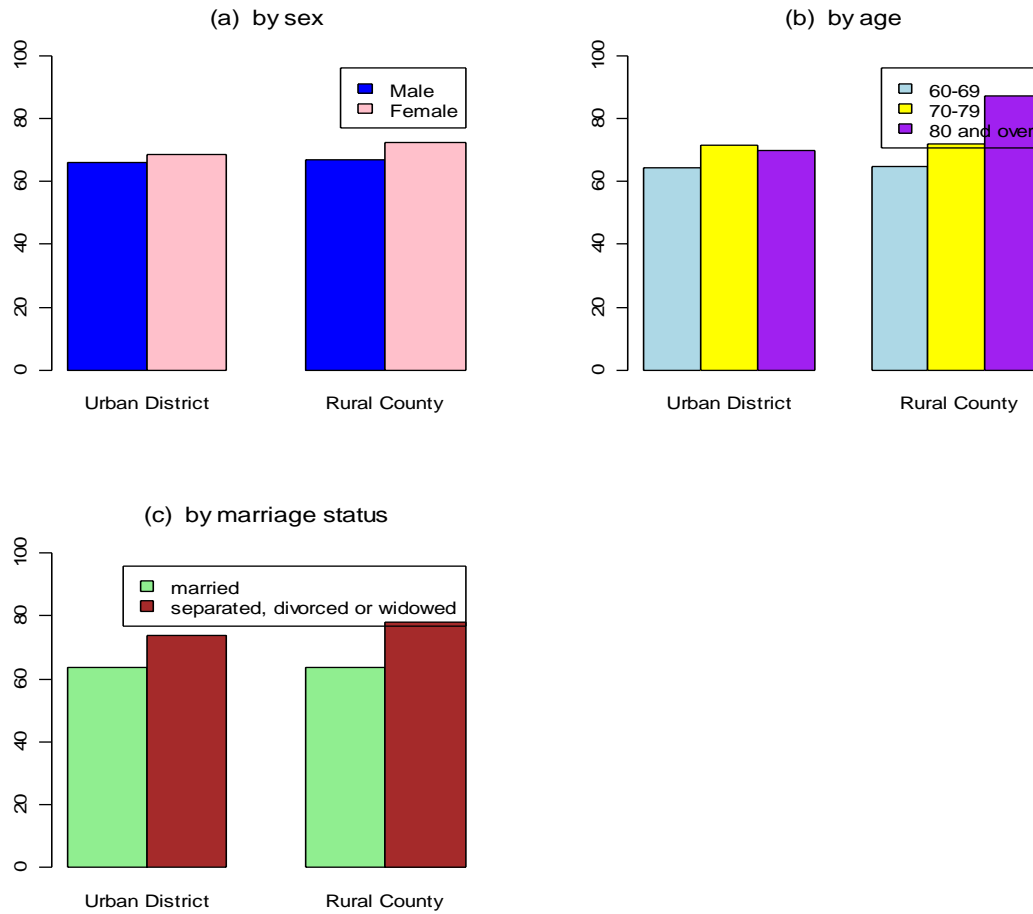
Who are more likely or willing to live with children: results of Logistic Models

In order to find the covariates of coresidence or the desire of coresidence, I perform stepwise Logistic regressions for urban districts and rural counties separately to investigate who are more likely or willing to live with children. The dependent and independent variables are listed in table 3. The dependent variable is if coresiding with children or not (not co-reside coded as 0, co-reside coded as 1) or if willing to live with children or not (not willing coded as 0, willing coded as 1). Independent variables include gender, age, marriage status, education, income, health, number of children, ownership of house, and so on.

The results show that marriage status, ownership of house and if willing to live with children have effects on current living arrangement both in urban districts district and rural counties. Those separated, divorced or widowed, those whose children own the house or pay the rent, and those who are willing to live with children are more likely to currently

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coresiding with children. In urban districts, the elders aged 70 or older is less likely to live with children than young old aged 60-69. This seems reasonable if we take into account that young old elders have more unmarried children and they also are better able to take care of grandchildren or do housework. However, it is unreasonable if considering that the oldest old are more likely be in poorer-health and widowed state and if coresidence is driven by parent's needs. In rural counties, compared to having only one child, having two or more children would increase the likelihood to coreside with children. Education, retirement pension, monthly income, self-evaluation of health, and composition of children's sex show no significant effects on current living arrangement.

For the desire or expectation of coresidence, we find currently coresiding with children considerably increase the likelihood of willing to live with children both in urban districts and rural counties. Education shows different impacts where primary school would increase the desire of coresidence and middle school or higher education decreases the desire. In urban districts, marriage status has no effect on desire of coresidence; and the elders aged 70 and over are more willing to coreside with children compared to those young old aged 60-69, which is in contrast with current living arrangement (the elders aged 70 and over are less likely to currently coreside with children), indicating a gap between desire and reality of the coresidence for the elders aged 70 and over. In rural counties, marriage status still has big effects on the desire of coresidence; and income also plays a role on the desire to live with children or not.

Comparing the results of the Logistic models for reality of coresidence to that for desire of coresidence, we find that education and income which are good indicators of SES have influence on desire of coresidence, but no effect on reality of coresidence, indicating that peoples' values and behaviors not necessarily have simultaneous response to social-economic status or changes and behaviors do not always mirror peoples' values.

Table 3 Dependent and Independent variables of Logistic regression

Dependent variable	Independent variable	category
If coresiding with children or not (0=No, 1=Yes)	1 Gender	Male, Female
	2 Age	60-69, 70-79, 80+
	3 Marriage status	Married living together Separated, divorced or widowed
	4 Education	Illiterate, Primary school, Middle school or higher
	5 Having paid job now	Yes, No
	6 Having pension or not	Yes, No
	7 Monthly income	less than 500 Yuan, 500-1000 Yuan, More than 1000 Yuan
	8 Self-evaluation of health	Poor health, So so, Good health
	9 Number of children	1 child, 2 children, 3 children or more
	10 Composition of children's sex	only have sons, only have daughters, have both sons and daughters
	11 Who own house or pay rent	own house or pay rent by self or spouse, own house or pay rent by children, other(house owned by employer, or other)
	12 Like to make friends	No, Yes
	13 participate in community activities	Never, sometimes/very often
	14 If willing to live with children	No, Yes
If willing to live with children or not (0=No, 1=Yes)	1-13 items above	
	15 If currently live with children	No, Yes

Table 4 Odds ratio of currently living with children for variables entered Logistic regression models by stepwise methods

Urban District		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Age (60-69)		Number of children(1 child)	
70-79	0.730*	2 children	2.819*
80+	0.504#	3 children or more	1.421#
Marriage status(Married living together)		Marriage status(Married living together)	
Separated, divorced or widowed	1.839***	Separated, divorced or widowed	1.629*
Who own house or pay rent(own house or pay rent by self or spouse)		Who own house or pay rent(own house or pay rent by self or spouse)	
own house or pay rent by children	2.070**	own house or pay rent by children	4.178***
other (owned by employer, etc.)	0.886	other (owned by employer, etc.)	0.830
Willing to live with children or not (No)		Willing to live with children or not (No)	
Yes	3.790***	Yes	8.357***

Note: category in ( ) is the reference group. *** p<0.001, ** p<0.01, * p<0.05, # p<0.1

Table 5 Odds ratio of willing to live with children for Variables entered Logistic models

Urban District		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Age (60-69)		Monthly Income (under 500 yuan)	
70-79	1.509**	500-1000 Yuan	0.541*
80+	1.389*	More than 1000 yuan	0.468#
Education (illiterate)		Education (illiterate)	
Primary school	1.492*	Primary school	1.882**
Middle school or higher	0.705*	Middle school or higher	0.907#
Who own house or pay rent(own house or pay rent by self or spouse)		Marriage status(Married living together)	
own house or pay rent by children	1.457#	Separated, divorced or widowed	1.953**
other (owned by employer,etc.)	1.614**	Currently co-reside with children (No)	
Currently co-reside with children (No)		Yes	7.719***
Yes	3.837***		

Note: category in ( ) is the reference group. *** p<0.001, ** p<0.01, * p<0.05, # p<0.1

III. Intergenerational Ties

In traditional Chinese culture, as in many other societies, support for the elderly was the responsibility of the family, and this often took the form of coresidence with one or married children, as well as the provision of other economic, physical, and emotional assistance as required (Hermalin and Yang, 2004). It could be expected that coresidence would facilitate and increase intergenerational transfer since coresiding parents and children are more convenient to access to each other, more involved in each other on one hand, and on the other hand, parents and children may be more likely to live together because of the need from either side or both sides. This section investigates the role of coresidence on intergeneration ties of parents with all children by looking at financial support, physical support or daily care, and emotional support.

Financial support

Financial support from children to parents is one of the main old-age supports of the elderly in China in the past. Now, it is still the first financial source of elderly in rural China where retirement pension is not widespread (table 7). Table 6 shows that elderly coresiding with children get more-often financial support from children than those not coresiding with children both in urban and rural area of Beijing. However, there is no obvious difference of financial support from the elderly to children between the elderly coresiding with children and those not (table 8). Coresidence may facilitate financial support from children to parents,

while has no effects on financial transfer from parents to children. This might be caused by upwards transfer needs from children to parents in general.

In order to see the association between coresidence and financial transfer by controlling other confounding factors, Logistic models are applied to the data. In the logistic regression, the dependent variable is frequency of financial transfer which is regarded as high (coded as 1) when both financial support from children to elderly and from elderly to children are stated as "sometimes/very often" and as low (coded as 0) in other cases. Independent variables are gender, age, marriage status, education, having paid job now or not, having pension or not, monthly income, self-evaluation of health, number of children, composition of children's sex, who own house or pay rent, if the elderly like to make friends of not, frequency of participation in community activities of the elderly (see table 3 for classifications). Table 9 shows the odds ratio of frequency of financial transfer for the variables entered the models. Consistent with the results of table 6 and 8, coresidence with children increases the frequency of financial transfer between children and the elderly by 57 percent and 70 percent in urban districts and rural counties, respectively, after controlling other confounding variables. Financial status of the elderly also matters on the frequency of transfer both in urban districts and rural counties. Good financial status of the elderly decreases the frequency of transfer between children and the elderly, indicating a main upward flow of financial support from children to parents. This is consistent with the study of Hu and Ye (1991) based on the Chinese Nine-City Aging Survey.

Physical support or daily care

Physical support or daily care is important for elderly who have difficulties in daily life, such as eating, dressing, transferring, bathing, using the toilet, cooking, shopping and so on. Table 10 shows that, for the elderly not coresiding with children, the main care provider is one's spouse; and for those coresiding with children, the main care provider is children or children's spouse. Although more elderly living with children are separated or widowed, after controlling marriage status, elderly coresiding with children still receive more daily care from children than those living independently. The main helper of money management also shows similar pattern: Children help more for the elderly coresiding with children than those not coresiding with children (Table 11).

Table 6   Financial support to elderly from children

	Urban District			Rural County		
	Not coreside	coreside	Total	Not coreside	coreside	Total
Never/very few	53.9	41.5	47.1	36.8	25.7	31.5
Sometimes/very often	46.1	58.5	52.9	63.2	74.3	68.5
Total cases	577	675	1252	367	338	705

Table 7   Distribution of First financial source of elderly

	Urban District			Rural County		
	Not coreside	coreside	Total	Not coreside	coreside	Total
retirement pension	88.1	80.7	84.1	42.7	27.2	35.3
from children	4.8	11.9	8.6	33.7	47.6	40.3
from spouse	4.1	3.6	3.8	5.5	6.6	6.0
wage	1.7	2.7	2.2	8.7	10.2	9.5
Other (rent, from relatives, etc)	1.2	1.2	1.2	9.1	8.4	8.8
Total cases	580	675	1255	365	334	699

Table 8 Financial support to children from elderly

	Urban District			Rural County		
	Not coreside	coreside	Total	Not coreside	coreside	Total
Never/very few	81.9	77.4	79.5	85.4	87.3	86.3
Sometimes/very often	19.1	22.6	20.5	14.6	12.7	13.7
Total cases	580	677	1257	369	338	707

Table 9 Odds ratio of high frequency of financial transfer for variables entered Logistic models

Urban District		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Coresiding with Children (No)		Coresiding with Children (No)	
Yes	1.565***	Yes	1.699**
Self-evaluation of health (poor)		Paid job now (Yes)	
so so	1.814***	No	2.557***
good	1.417**	Having pension (No) Yes	0.268***
Having pension (No) Yes	0.293***		
Income (less than 500 Yuan)			
500-1000 Yuan	0.885		
More than 1000 Yuan	0.510**		
Marriage status (married living together)			
Separated, divorced, widowed	1.697***		

Note: category in ( ) is the reference group. *** $p<0.001$, ** $p<0.01$, * $p<0.05$, # $p<0.1$

Table 10 Main helper of care for elderly having difficulties (in eating, dressing, transferring, going upstairs, bathing, using the toilet, cooking and shopping)

	Urban District		Rural County	
	Not coreside	coreside	Not coreside	coreside
spouse	42.9	25.6	57.5	14.2
grandchildren	6.9	7.7	1.7	2.1
nanny	23.5	12.5	5.8	
other	6.1	4.0	4.2	1.1
Children or children's spouses	20.6	50.1	30.8	82.6
(son	6.9	17.9	15.8	33.2)
(daughter-in-law	1.6	11.1	10.8	39.5)
(daughter	11.7	20.5	4.2	10.0)
(son-in-law	0.4	0.6		)
Total cases	247	351	120	190

Table 11 Main helper of managing money for elderly having difficulties in money management

	Urban District		Rural County	
	Not coreside	coreside	Not coreside	coreside
spouse	62.5	29.9	46.2	14.7
Children or children's spouses	28.1	64.2	46.1	85.3
Other	7.7	5.9	7.7	0.0

Emotional support and communication

Among the elderly not co-residing with children both in urban districts and rural counties, 30 percent mentioned that they talked with or chatted with their children when they were sad or had a bad mood. This proportion increases to 43 percent among elderly who coreside with children in urban districts and 51 percent in rural counties (table 12), indicating a more-often or easier emotional support from children when coreside together. Elderly living with children seems discuss more with children if they have big events, and also give more consultation to children if children have big events (Table 13, 14).

The role of coresidence on frequency of emotional support and communication between children and the elderly is also investigated by Logistic models after controlling other confounding covariates. High or low frequency of emotional support and communication is assigned to an elder based on if the elder talks with children when they are sad, discusses with children if they have big events to be decided, and if the children discuss with the elderly when children have big events. Dependent variables are the same with those in logistic models for frequency of financial transfer. The results (Table 15) confirm that coresidence with children increases the frequency of emotional support and communication between children and the elderly by 60 and 88 percent in urban districts and rural counties, respectively. Other than coresidence, personal characters of the elders such as liking to make friends, liking to participate in community activities would also increase the frequency of emotional support and communication between the elderly and children.

Table 12   Frequency of Multiple responses to "who do you chat with when you are sad or in bad mood"

	Urban District		Rural County	
	Not coreside	coreside	Not coreside	coreside
children	30.3	43.1	29.5	50.9
spouse	45.7	35.1	39.0	30.7
friends/other relatives	49.9	43.4	49.6	31.9
neighbor	26.6	33.7	45.3	36.5
Total respondents	545	629	369	326

Table 13   Discuss with children if elderly have big events

	Urban District			Rural County		
	Not coreside	coreside	Total	Not coreside	coreside	Total
Never/very few	23.9	16.7	20.0	26.0	18.2	22.3
Sometimes/very often	76.1	83.3	80.0	74.0	81.8	77.7
Total cases	573	666	1239	369	336	705

Table 14   Discuss with elderly if children have big events

	Urban District			Rural County		
	Not coreside	coreside	Total	Not coreside	coreside	Total
Never/very few	39.5	31.4	35.1	44.3	33.0	38.9
Sometimes/very often	60.5	68.6	64.9	55.7	67.0	61.1
Total cases	575	675	1250	368	339	707

Table 15 Odds ratio of high frequency of emotional support and communication for Variables entered Logistic models

Urban District		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Coresiding with Children (No)		Coresiding with Children (No)	
Yes	1.595***	Yes	1.880***
Like to make friends (No)		Like to make friends (No)	
Yes	1.423*	Yes	1.819**
Participate in community activities (Never)			
Sometimes	1.198		
very often	1.826***		

Note: category in ( ) is the reference group. *** p<0.001, ** p<0.01, * p<0.05, # p<0.1

IV. Well-being of the Elderly

Coresidence with children or not may cause different well being of elderly in living conditions since household population, preferences to house facilities, and household financial status may change when children show up in the household. The present study compares the well-being in living conditions of the elderly by examining whether having own room for self and/or spouse and whether the house is equipped with tap water, kitchen room, gas, bath facility and telephone. Information on other aspects of well-being rather than living conditions is not available. However, questions about psychological feeling such as if worry about old-age support, if feel lonely in most time, if feel life is hard in most time and if feel children are filial were asked in the survey. These psychological feelings indicate psychological well-being which can be regarded as proxies for actual well-being in that feelings could mirror the reality in some respects. Other than living conditions, I also investigate the role of coresidence and intergenerational ties on the psychological well-being of the elderly by looking at worries about old-age support, feeling of loneliness, feeling of difficulties in life and judgment about filial piety of children.

Figure 3 shows the proportion of elderly having own room for self and spouse by living arrangements. Fewer elderly have their own room for self and spouse when they coreside with children both in urban districts and rural counties. This is reasonable since there are more persons sharing a house and people who are short of houses may be more likely to live with children.

In general, the elderly in urban districts have more house facilities than those in rural counties (see Table 16). In urban districts, no big difference of living conditions between the elders coresiding with children and those not living with children is found by only look at tap water, kitchen room, gas, bath facility and telephone. It is possible that the house facilities analyzed here could not represent very well the wealth of the family in urban area of Beijing in that probably most households are able to afford these facilities, thus unable to tell the differences. In rural counties, differences are obvious in equipments of bath facility and telephone which represent the wealth for rural families. The proportions of elderly having bath facility and telephone in home are 18 percent and 9 percent higher respectively for the elderly living with children than those not living with children. These results suggest better living conditions (except having own room) when elderly co-reside with children in rural counties.

Most elderly in Beijing are satisfied with living conditions and housing facilities except one fifth of the elderly. Although equipped with more or better facilities in houses, the elderly in urban districts is less satisfied with living conditions compared to rural elderly (table 17). On one hand, this phenomenon could be explained by the fact that urban elderly live in smaller houses due to much higher housing prices in urban area of Beijing. On the other hand, it may reflect the more demands of urban elderly compared to rural elderly. Table 6 also shows that in urban districts, the proportion of dissatisfaction is 9 percent higher for those co-residing with children than those not co-residing with children. This is mainly because elderly co-residing with children feel house is too small. Among those unsatisfied with living conditions and housing facilities, about 70 percent elderly co-residing with children feel house is too small, while this proportion is decreased to about 48 percent for those not co-residing with children who turn to pay more attention to shortage of housing facilities. In contrast, in rural counties, elderly not living with children shows slightly more dissatisfaction to living conditions and housing facilities due to the fact that more elderly not co-residing with children feel house is too old. Among the rural elderly co-residing with children who expressed dissatisfaction to living conditions and housing facilities, 17 percent feel inconvenient to live with children.

Figure 3 Proportion of elderly having own room for self and spouse by status of coresidence
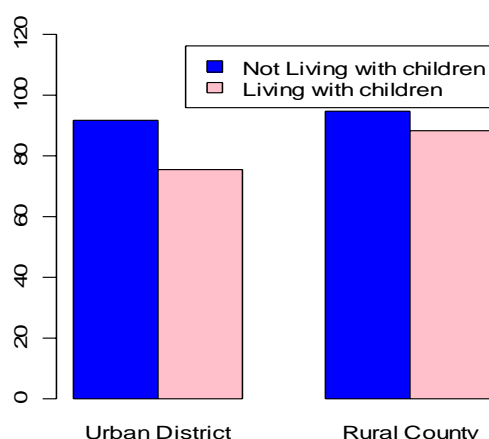

Table 16 Proportion of the elderly having the specific house facility (%)

| | Urban District | | Rural County | |
	Not coreside	Coreside	Not coreside	Coreside
Tap water	98.6	99.3	94.8	97.4
Kitchen room	94.9	97.1	92.4	95.0
Gas	92.4	93.8	73.0	75.5
Bath facility	71.2	74.3	41.7	58.7
Telephone	81.4	85.4	35.6	44.4

Table 17   Satisfaction with living conditions and housing facility

| | Urban District | | | Rural County | | |
	Not coreside	coreside	Total	Not coreside	coreside	Total
very/somewhat unsatisfied	22.3	31.4	27.2	12.4	8.6	10.6
so so	14.6	18.0	16.4	10.0	16.2	13.0
very/somewhat satisfied	62.8	50.3	56.1	77.0	75.3	76.1
refuse to answer	.3	.3	.3	.5		.3
Total	583	682	1265	370	340	710

Three fourth of the elderly in Beijing do not worry about their old-age support. In urban districts, no big differences of worries about old-age support are found between the elderly co-residing with children and those not coresiding with children and between the elderly who have high frequency of intergenerational ties and those who do not. Whereas, in rural counties, the elderly co-residing with children and having strong ties with children are less likely to worry about their old-age support compared to those not living with children or having weak ties with children (Table 18, 19). Among the elderly who express worries to old-age support both in urban districts and rural counties, the most worry is that alimony or pension is not enough (40 percent in urban districts and 60 percent in rural counties), second worry is no money to cure if sick (26 percent in urban districts and 10 percent in rural counties), third is disability (15 percent in urban districts and 9 percent in rural counties). In rural counties, the most three worries about old-age support of elderly co-residing with children are similar with those of elderly not co-residing with children. In urban districts, compared to elderly co-residing with children, more elderly not co-residing with children worry about disability and no health and daily care, showing a stronger worry about physical support among elderly without coresidence in urban districts.

Table 18   worry about old age support or not by living arrangement

	Urban District			Rural County		
	Not coreside	coreside	Total	Not coreside	coreside	Total
completely no	35.3	36.6	36.0	38.2	54.3	45.9
somewhat no	40.4	36.3	38.2	38.5	28.7	33.8
somewhat yes	22.3	22.0	22.2	20.3	14.3	17.4
completely yes	1.9	5.2	3.7	3.0	2.7	2.9
Total persons	572	673	1245	364	335	699

Table 19   worry about old age support or not by intergenerational ties

	Urban District			Rural County		
	weak ties	strong ties	Total	weak ties	strong ties	Total
completely no	36.3	36.1	36.2	28.3	57.9	45.6
somewhat no	35.5	40.2	38.1	42.4	27.4	33.6
somewhat yes	24.0	20.5	22.1	24.3	13.0	17.7
completely yes	4.2	3.2	3.6	5.1	1.5	36.3

As to the feeling of loneliness or difficulties in life and judgment about children's filial piety, status of coresidence has no influence on them in urban districts, but plays a role in rural counties even controlling status of intergenerational ties. And, elders having weak intergenerational ties with children are more likely to feel lonely or feel life is hard or children are not filial both in urban districts and rural counties (Table 20, 21, 22).

Results mentioned above are not controlled for other confounding variables. In order to do so, Logistic models considering other variables are applied to each of the psychological well-being discussed above and the results are similar to those in Table 18-22 (see appendix table A-1 to A-4). For sake of convenience, here I only discuss the result of logistic regression for total value of the psychological well-being which is added up by the values for worries about old-age support, feeling of loneliness, feeling of difficulties in life and judgment about children's filial piety. The values are assigned as shown in table 24. A total value of the psychological well-being is obtained by adding up the four values together. The

range of the total value is from 0 to 4 with 4 denotes the best psychological well-being and 0 denotes the worst. According to the distribution of the total value, a value of 4 is regarded as high psychological well-being and coded as 1 for dependent variable, and others regarded as low psychological well-being and coded as 0. Independent variables include gender, age, marriage status, education, having paid job now or not, having pension or not, monthly income, self-evaluation of health, number of children, composition of children's sex, who own house or pay rent, if the elderly like to make friends of not, frequency of participation in community activities of the elderly which are listed in table 3. Odds ratios of high psychological well-being in table 24 indicate that strong intergenerational ties would improve psychological well-being of the elderly by 123 and 132 percent in urban districts and rural counties respectively. Coresidence with children has no effect in urban districts, but would substantially improve the psychological well-being of the elderly in rural counties after controlling intergenerational ties and other variables. Health status and financial status of the elderly have positive influence on psychological well-being both in urban districts and rural counties, and, marriage status also plays a role in rural counties but not in urban districts.

Table 20 Proportion of the elderly who feel lonely in most time by intergenerational ties and living arrangement

| | Urban District | | | Rural County | | |
	weak ties	strong ties	Total	weak ties	strong ties	Total
Not coreside	20.6	13.3	17.1	28.7	14.8	21.5
Coreside	23.7	14.0	18.0	15.0	10.4	12.0

Table 21 Proportion of the elderly who feel life is hard in most time by intergenerational ties and living arrangement

| | Urban District | | | Rural County | | |
	weak ties	strong ties	Total	weak ties	strong ties	Total
Not coreside	19.5	14.5	17.1	31.1	22.0	26.4
Coreside	18.7	17.7	18.1	30.1	14.2	19.8

Table 22 Proportion of the elderly who feel children are very filial by intergenerational ties and living arrangement

| | Urban District | | | Rural County | | |
	weak ties	strong ties	Total	weak ties	strong ties	Total
Not coreside	72.2	92.6	82.0	62.3	90.1	76.8
Coreside	74.4	92.4	85.0	77.0	96.2	89.5

Table 23 Assigned values

		assigned value
worries about old-age support	No	1
	Yes	0
Feel lonely in most time	No	1
	Yes	0
Feel life is hard in most time	No	1
	Yes	0
Children are filial	No	0
	Yes	1

Table 24 Odds ratio of high psychological well-being for Variables entered Logistic models

Urban District		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Intergenerational Ties (weak)		Intergenerational Ties (weak)	
Strong	2.226***	Strong	2.318***
Health status (poor)		Coresiding with Children (No)	
so so	1.522*	Yes	2.212***
good	3.186***	Health status (poor)	
Having pension (No) Yes	2.230***	so so	2.312**
		good	4.323***
		Income (less than 500 Yuan)	
		500-1000	2.032**
		1000+	2.592*
		Marriage status (married living together)	
		Separated, divorced, or widowed	0.637*
		Like to make friends (No) Yes	1.876**

Note: category in ( ) is the reference group. *** p<0.001, ** p<0.01, * p<0.05, # p<0.1

VI. Concluding Remarks and Discussion

This paper investigates the reality and expectation of living arrangements of the elderly in Beijing and examines the role of coresidence on intergenerational ties and the role of coresidence and intergenerational ties on well-being of the elderly, by using data from the Living Condition Survey of Beijing Residents in 1999.

This study shows that coresidence with adult children is still an important living arrangement both in urban districts and rural counties of Beijing. Over half of the elderly coreside with children in 1999, and the proportion of the elderly who desire to coreside with children is even higher (70 percent). In addition to coresidence, a close-by resident arrangement of children to elderly is found, showing that Beijing elderly enjoy high proximity to children in geographic respects. House resources and marriage status of the elderly play an important role on living arrangement. Those elderly who own house are less likely to coreside with children, and those separated, divorced or widowed are more likely coreside with children. In urban districts, the older elders aged 70 and over who are more willing to coreside with children are in fact less likely to coreside with children as compared to the younger elders aged 60-69. This may suggest a possibility that coresidence in urban districts is driven by children's needs in some respects to take care of grandchildren and housework. Education and income have influence on desire of coresidence, but show no effects on actual living arrangements which are more determined by reality of housing resources and marriage status of the elderly.

The present study on Beijing residents shows that coresidence would strengthen intergenerational ties between the elderly and children in each aspect of the following: financial support, physical support or daily care, and emotional support or communication. In addition to coresidence, good financial status of the elderly decreases the frequency of financial transfer between children and the elderly, indicating a main upward flow of finaicial support from children to parents. Personal characters of the elderly such as if liking to make friends and whether liking to participate in community activities play a role on frequency of emotional support or communication. Health and marriage status of the elderly have great effects on physical support of daily care from children to elderly.

Except that fewer elderly own a room for self and spouse, well-being of the elderly in living conditions for those coresiding with children does not differ significantly from that for

those not coresiding with children in urban districts. However, in rural counties, coresidence with children improves the living conditions by adding more house facilities. As to the psychological well-being, after controlling intergenerational ties and other confounders, coresidence with children shows no influence on worries about old-age support, lonely feeling, hard-life feeling and judgment of Children's filial piety in urban districts, but still plays an important role in rural counties. Strong intergenerational ties would improve psychological well-being of the elderly substantially both in urban districts and rural counties, indicating important roles children play on the life of elderly in Chinese culture.

It is interesting to note that the elderly who only have daughters has the same proportion of coresidence with those only have sons or both have sons and daughters, and children's sex composition has no impacts on living arrangements, intergenerational ties and well-being of the elderly. This suggests two possibilities. One is that the patrilineal tradition of Chinese family system that stressed coresidence with and support from married sons could not hold in the case of only having daughters. The other possibility is the tradition per se is changing. Unfortunately, the data do not provide information on the sex of the children whom the elderly coreside with, thus, I could not test the second possibility. Whatever the possibilities are, these results would somehow weaken worries about old-age support of the elderly having only one daughter in the context of one child policy.

It is also worth emphasizing that the role of coresidence on strong intergenerational ties and the role of coresidence and intergenerational ties play on well-being of the elderly are more important for the elderly in rural counties rather than in urban districts. This is no surprising taking into account that more elderly in urban districts are able to financially independent at old ages in that receiving retirement pension which is rare in rural counties.

Due to data limitations, the present study does not distinguish ties between the elderly and the children whom the elderly are coresiding with from ties between the elderly and other children. This may cause some bias in the results on the roles of coresidence. However, the direction would not change: the elderly coresiding with children have stronger intergenerational ties with children and better well-being in general.

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Appendix

Table A-1 Odds ratio of worries about old-age support for Variables entered Logistic models

Urban district		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Age (60-69)		Intergenerational Ties (weak)	
70-79	0.539***	Strong	0.511**
80+	0.192***	Gender (male)	
Health status (poor)		Female	1.775*
so so	0.854	Age (60-69)	
good	0.476***	70-79	0.499***
Having pension (No) Yes	0.454**	80+	0.266***
		Health status (poor)	
		so so	0.649
		good	0.283***

Note: category in ( ) is the reference group. *** p<0.001, ** p<0.01, * p<0.05, # p<0.1

Table A-2 Odds ratio of feeling lonely for Variables entered Logistic models

Urban district		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Intergenerational Ties (weak)		Intergenerational Ties (weak)	
Strong	0.486***	Strong	0.419***
Health status (poor)		Coresiding with Children (No)	
so so	0.646*	Yes	0.552***
good	0.309***	Health status (poor)	
Having pension (No) Yes	0.443***	so so	0.328**
Marriage status (married living together)		good	0.276***
Separated, divorced, or widowed	2.750***	Marriage status (married living together)	
		Separated, divorced, or widowed	3.071***

Note: category in ( ) is the reference group. *** p<0.001, ** p<0.01, * p<0.05, # p<0.1

Table A-3 Odds ratio of feeling that life is hard for Variables entered Logistic models

Urban district		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Intergenerational Ties (weak)		Intergenerational Ties (weak)	
Strong	0.641*	Strong	0.635***
Health status (poor)		Coresiding with Children (No)	
so so	0.663#	Yes	0.563*
good	0.318***	Health status (poor)	
Having pension (No) Yes	0.512**	so so	0.312***
Income (less than 500 Yuan)		good	0.213***
500-1000	0.503**	Income (less than 500 Yuan)	
1000+	0.300***	500-1000	0.285***
Like to make friends (No) Yes	0.658*	1000+	0.206*
		Number of Children (1)	
		2	0.616
		3+	0.380*
		Like to make friends (No) Yes	0.375***
		Who own house or pay rent (self or spouse)	
		Children	0.799
		Other (house owned by employer, or other)	6.785***

Note: category in ( ) is the reference group. *** p<0.001, ** p<0.01, * p<0.05, # p<0.1

Table A-4 Odds ratio of feeling that children are filial for Variables entered Logistic models

Urban district		Rural County	
Variables entered model	*Odds ratio*	*Variables entered model*	*Odds ratio*
Intergenerational Ties (weak)		Intergenerational Ties (weak)	
Strong	4.502*	Strong	5.188***
Education (illiterate)		Coresiding with Children (No)	
Primary school	1.695*	Yes	2.662*
Middle school or higher	0.951	Health status (poor)	
		so so	1.467***
		good	3.134***

Note: category in ( ) is the reference group. *** p<0.001, ** p<0.01, * p<0.05, [#] p<0.1