# Intergenerational Support and Subjective Health of the Elderly in Rural China: A Gender-based Longitudinal Study

Shuzhuo Li

Institute for Population and Development Studies

School of Public Policy and Administration

Xi'an Jiaotong University

Xi'an, Shaanxi Province, 710049

China

Email: shzhli@mail.xjtu.edu.cn

Lu Song

School of Management

Xi'an Jiaotong University

Xi'an, Shaanxi Province, 710049

China

Email: songlu@stu.xjtu.edu.cn

Marcus W. Feldman

Morrison Institute for Population and Resource Studies

Stanford University

Stanford, CA 94305

USA

**Abstract:** Using data from the three waves of "Well-being of Elderly in Anhui Province, China" survey conducted in 2001, 2003 and 2006, respectively, by the Institute for Population and Development Studies of Xi'an Jiaotong University, this paper examines gender differences in the effect of intergenerational exchanges on subjective health of Chinese rural elderly. Results from a logistic analysis show that while an increase in instrumental support from children to the elderly is associated with deterioration in the subjective health of older men, financial support from the elderly to children improves the formers' subjective health. For older women, although an increase in instrumental support from the elderly to children, and mutual emotional support, improve the subjective health of older women, financial support from children to the older women has negative effect on the latter's subjective health. We conclude that reciprocal intergenerational transfers between the elderly and their children contribute to improvement in subjective health of the elderly, while more supports in demand-based transfers appears to result in deterioration of their health.
**Key Words:** gender, intergenerational support, self-rated health, the elderly

## INTRODUCTION

In China, due to rapid declines in fertility and mortality, population aging is expected to accelerate in the near future. It has been predicted that between the 2020s and 2040s, when the older population will increase most rapidly, the population aged 60 years and older will on average increase by over 4 percent per year, and total 400 million in 2039. That is, the population aged 60 years and older will increase in 12 or 13 years by 100 million, equivalent to the population of a large country (Jiang, 2005). Moreover, because there are so many migrants from rural areas, most of whom are young adults, population aging of China is more serious in rural areas than in cities. It is expected that by the middle of this century, the proportion of the population aged 65 years and older will reach 22 percent in cities and 26 percent in rural areas (Zeng, 2001). As families are the major support source for older individuals in rural areas — that is, adult children serve as the primary providers of support to their elderly parents — the traditional family system of support must confront the problem of out-migration of young adults from rural areas.

Many studies have demonstrated that social support has a positive influence on health status of the elderly (Liu et al., 1995; Litwin, 1998; Ren et al., 1999). However, gender may confound such analyses of elder health. Ho (1991) suggests that patterns of social support may vary more consistently by sex than by any other aspect of social status, such as marriage or living arrangement. Although older women tend to experience prolonged debilitating illnesses, functional impairments and worse self-rated health (Verbrugge, 1985, 1989; Penning & Strain, 1994; Silverstein et al., 1997; Rahman & Liu, 2000; Zhang et al., 2003), older men may benefit more from a lower level of social support than do women (Shye et al., 1995). Given that men and women often exhibit different lifestyles, family and roles, health and disablement outcomes (Lamb, 1997), several studies suggest that men and women be analyzed separately to account for gender differences in the magnitude of the relationships between socio-economic characteristics and health (e.g., Arber & Cooper, 1999). However, few studies have addressed the relationship between social support and health status separately for men and women.

Family is the most important source of financial or social support in most Asian countries, including China, and recent studies have investigated whether gender relates to the health of the elderly and the pattern of intergenerational exchanges between the elderly and their children, as well as the well-being of older people (Friedman et al., 2003; Sobieszczyk et al., 2003; Ghuman & Ofstedal, 2004; Ofstedal et al., 2004; Zhang et al., 2005). From these studies there is no consistent pattern of disadvantage to older women in health and well-being with respect to such variables as support received, socio-economic status (SES) and ability of daily living. Intergenerational support may be causally related to health and well-being of the elderly, or vice versa. To date, there have been few longitudinal studies of these issues. Especially in China, with contemporary challenges to the traditional culture and kinship system, the effect of family on health and well-being of the elderly requires further study. In this paper we determine whether gender differences exist in the effects of intergenerational financial, instrumental and emotional support on subjective health of the elderly. The following are our main questions.

1. Are there gender differences in subjective health between older men and older women?
2. Are there gender differences in intergenerational support between older men and older

women?

3. Are there gender differences in the relationships between intergenerational support and subjective health of the elderly?

## GENDER DIFFERENCES IN HEALTH RISK

Gender differences in health status and level of disability may cause men and women to experience different health outcomes when exposed to similar risks. Some studies have found several risk factors that differ by sex. Besides biological risks, these risk factors are related to the social roles that men and women occupy (Verbrugge, 1985, 1989), such as marital status, living arrangement and SES.

Some studies have shown that compared with the unmarried elderly, the married elderly have better physical and mental health (Goldman et al., 1995; Schone & Weinick, 1998; Lee et al., 2001), and lower mortality (Gliksman et al., 1995; Baron-Epel et al., 2004). Due to their different roles in society and the family, there are differences between older men and older women in the effect of having a living spouse on health and well-being. For example, as women are usually the primary caregivers for their spouses, widowhood is thought to have a greater negative impact on the health of older men (Verbrugge, 1985, 1989; Hu & Goldman, 1990). However, since married women depend on their spouses for economic support in countries where patriarchal kinship results in disadvantage to females in access to social and family resources, the absence of a spouse is likely to have more severe consequences for older women, due, for example, to less of economic assistance or even status in society and the family.

Older men and older women have distinct roles within the socio-cultural system and consequently derive different benefits from coresidence with their children. Unlike in western countries where elder-offspring coresidence, generally "need-based", is rare, coresidence with adult offspring (especially sons) is the norm in most Asian countries (Hashimoto, 1991; Cooney & Shi, 1999), regardless of health status or need (Martin, 1989). Research on cities in China reveals that coresidence usually provides more importantly for parents' needs than for those of children (Logan et

al., 1998). Furthermore, considering the traditional culture of a female's dependence on her husband and sons in the patriarchal family, older women may benefit more from coresidence with sons than do older men. For example, Rahman (1999) found that coresidence with a son has a positive association with the survival of older women, but not with that of older men.

Although numerous studies have documented strong, positive associations between SES and health status, the precise mechanism of the SES-health relationship is not well understood (Adler et al., 1993; Smith, 1999). In general, education increases efficiency in transforming resources into health (Smith, 1999; Hayward et al., 2000). Due to their disadvantaged position with respect to schooling and labor force participation in adulthood, older women generally have fewer economic resources, and depend more on others than do older men (Rudkin, 1993). Research on the oldest old in China by Zeng et al. (2004) shows that older women usually have less education than older men, and that older women have less access to economic resources than do older men.

Studies in developing counties have shown that gender inequality may disadvantage females and increase the risk of bad health for older women. For example, Rahman & Liu (2000) find that older women report worse health more often than do older men. A similar disadvantage has been observed in India, where Van Willigen & Chadha (1999) find that most elderly who report poor health are older women, while most who report good health are older men. They also find that older women report more symptoms than do older men. However, evidence concerning gender difference in subjective health of the Chinese elderly is scarce.

## INTERGENERATIONAL SUPPORT

Many studies have confirmed that family and/or social support improves physical and mental health (Eggebeen, 1992; Silverstein & Bengtson, 1994; Wang et al, 2005). Although, in general, children, friends or neighbors, community and government are all social support providers to the elderly, family is the crucial social institution in providing support to its members in China and other oriental nations in which the Confucian culture is deeply embedded (Frankenberg et al., 2002). Since the vast majority of Chinese rural elderly have no access to insurance or formal support, it is widely

recognized that children play an important role in the health and well-being of the elderly. Most studies concerning intergenerational support focus on the support received by the elderly parents as opposed to the support provided by the elderly parents to their children (Shi, 1993; Ofstedal et al., 1999). However, the latter may be important, depending on the nature of this support and its effect on the health status of the elderly parents.

**Financial Support**

Many studies have shown that since older women have fewer economic resources than older men, older women are dependent on their spouse or adult children for financial assistance (Ellickson, 1988; Rudkin, 1993). Other researchers, however, have suggested that older women's position relative to adult children is not one of dependence but one of authority. As women age, they receive material benefits from adult children, while older men do not tend to attract the same level of filial piety (Brown, 1982). Though the proponents of these two perspectives agree that older women rely more on family than do older men, they differ on whether women are at an economic disadvantage. In rural China, more than two-thirds of the elderly are dependent on financial assistance from their children (Xu & Yuan, 1997; Yao, 2001). Moreover, with the breakdown of the cooperative medical care system in rural areas in the 1980s, about 700 million rural people must now pay their medical fee-for-service themselves (World Bank, 1997). Since this payment depends on assistance from their children, the level of financial support from children determines the quality of medical treatment and hence the health status of the elderly. However, some studies have suggested that while lack of adequate financial support would diminish the abilities of daily life and psychological health of the elderly, too much dependence on financial support from children may also have negative effects on the physical and mental health of the elderly (Zhang & Li, 2004). On the other hand, elderly parents may be overburdened with financial support to their children, which may also have a negative effect on their lives and health status.

**Instrumental Support**

Some studies have found that the well-functioning elderly who receive the most frequent instrumental support exhibit greater risk to their future health than do similarly healthy elders who

receive less frequent instrumental support (Seeman et al., 1996). Possible reasons are that instrumental support may induce excessive dependency in older individuals, or that elderly parents prefer to be independent for as long as possible but support from children becomes important when the former have disabilities in functional activities (Silverstein & Bengston, 1994). Not only do the elderly parents who are healthier and more mobile require less assistance, but they are also more likely to provide assistance to their children. Because of the social roles and division of labor between the sexes, older women are more likely to be involved in provision of assistance, including grandchild-care and housework. To the extent that instrumental support provided to adult children integrates an older person into his/her family and improves familial contacts, the greater involvement of older women in instrumental support is a benefit to them (Ghuman & Ofstedal, 2004). It has been suggested that increased instrumental support from elders would diminish their health status (Liu et al., 1995), but there is no empirical justification for this claim.

**Emotional Support**

Many studies on the relationship between social support and health status of the elderly have shown that emotional support may be especially important for the elderly who face a variety of age-related challenges to their functional ability and health (Sugisawa et al., 1994; Reinhard & Blieszner, 2000). With their different roles in society and family, older women are more intimate with their children than are older men, so that emotional support might be expected to be more important for their well-being than that of older men (Patrick et al., 2001). However, a study in Japan suggests that emotional support is a promoter of better subjective health in older men than in older women (Okamoto & Tanaka, 2004). In China, while Wang (1990) reported a negative association between emotional support and elders' health status, the same study suggests that emotional support, both received and provided, is positively related to self-rated health of the elderly (Liu et al., 1995). A recent study finds that emotional support between generations is reciprocal, and hence is of benefit to subjective health of the elderly (Song et al., 2006).

## METHODS

**Data**

Data for this study are derived from the three waves of the survey "Well-being of Elderly Survey in Anhui Province", which was carried out in 2001, 2003 and 2006 by the Institute for Population and Development Studies of Xi'an Jiaotong University, in conjunction with the University of Southern California. A stratified multistage method was used to select potential respondents within 12 randomly selected rural townships, from each of which six villages were randomly selected. The respondents were identified from all residents aged 60 and older with a small proportionate over-sampling of people 75 years of age and older. Of 1,800 individuals identified as eligible respondents, 1,715 completed the survey in 2001, a response rate of 95.3%. 1,391 respondents completed the follow-up survey in 2003, and 1,067 respondents were re-interviewed in 2006. After omitting respondents without children and cases with missing data on relevant study variables, 1,018 respondents interviewed in all three waves were included in our analyses, and each interviewee provides three observations.

The three waves of data have two survey intervals: 2001-2003 and 2003-2006. To produce more robust estimates, similar to some previous studies in aging (e.g. Liang et al., 2005; Gu and Xu, 2007), the three waves of data are pooled together. Time 1 refers to the start-point of each interval in which subjective health may change, whereas Time 2 refers to the end-point of each interval. Therefore, Time 1 in this study could be 2001 or 2003 and Time 2 could be 2003 or 2006. In this study, the total number of observations at Time 1 is 2,036 (924 males and 1012 females).

**Measurement**

Dependent Variables

Self-rated health (SRH), the dependent variable in this study, is a global assessment of subjective health. It differs from other complicated health status indices in that SRH assesses the perceived health status and reflects a combination of physical health, mental health, and social well-being, some of which are difficult to measure. SRH is assessed using by a four-point-scale response to a question "*How is your health?*": (1) very good, (2) good, (3) average, (4) not so good. In our analysis, we condense this classification into two scales: (1) good (including "very good" and "good"), (2) poor

("average" and "not so good"). Compared to the level at Time 1, the change of SRH at Time 2 is classified as "better", "worse", and "no change", which are condensed into two groups: "better" and "no better" (including "worse" and "no change"), with "no better" considered as the benchmark in the data analysis.

Independent Variables

The independent variable, intergenerational support is subdivided into financial support, instrumental support and emotional support. The differences between Time 1 and Time 2 support for the same individual measure the change of intergenerational support provided and the change of intergenerational support received. Because the change of support is affected by the level at Time 1, this level is also included in the analysis.

Financial support received is assessed by answers to the question "*Did the child send you (or your spouse living with you now) money, food or gifts?*". This is a measure of the total amount received from each child during the past 12 months. If the respondents did not respond with the exact amount, the options were the following categories based on Chinese RMB currency: 0= "none", 1= "less than 50", 2= "50-99", 3= "100-199", 4= "200-499", 5= "500-999", 6= "1000-2999", 7= "3000-4999", 8= "5000-9999", 9= "More than 10,000". The median value of each interval is taken as the amount of financial support from children. We first compute the sum of financial transfers received from all children by one elderly person. The log of this sum is taken to be the financial support received by an elder at Time 1. Financial support provided is assessed by answers to the question "*Did you (or your spouse living with you now) send the child money, food or gifts?*" Scoring of financial support provided is the same as for financial support received. Comparing the amount at Time 1 and Time 2, the change of financial support received is coded as 0 if there is no increase (including decrease), 1 if there is an increase. Similarly, the change of financial support provided, comparing level at Time 1 and at Time 2, is coded as 0 if there is no increase (including decrease), 1 if there is an increase.

Instrumental support received from children (including children's spouse and grandchildren) by elderly parents during the past 12 months is reported as two kinds: (1) *household tasks, such as*

*cleaning the house and washing clothes*, and (2) *personal care tasks, such as bathing and dressing*, each of which are recorded as four values: (1) Every day=7.5, (2) At least once per week=1.5, (3) Several times per month=0.5, (4) Seldom or None=0; this scoring follows the method proposed by Bian et al. (1998). The sum of the two kinds of assistance by one child is taken as the measure of instrumental support from a child to his/her elderly parent. Summing the measures of instrumental support from each child across all children at Time 1, the total score is considered as the support received at Time 1 by an elder. The scoring of instrumental support provided is the same for instrumental support received. Comparing Time 1 and Time 2, the change of instrumental support received or of instrumental support provided is coded as 0 if there is no increase (including decrease), 1 if there is an increase.

Emotional support is assessed using the three questions: (1) *"Overall, how close do you feel to (this child)?"* (2) *"Overall, how well do you and (this child) get along together?"* (3) *How much do you feel that (this child) would be willing to listen when you intend to talk about your worries and troubles?* The responses are coded as follows: 1="Not at all close/not at all well/not at all", 2="Somewhat close/somewhat well/somewhat", 3="Very close/very well/very much". An additive scale is computed, ranging from 3-9, with a higher score indicating a higher quality of parent-child relationship. The alpha reliability coefficient for these items is 0.86. We take the mean of the total score across all children for each elderly parent at Time 1 to indicate the emotional support, avoiding multicolinearity between emotional support and number of children. Comparing Time 1 and Time 2, the change of emotional support is coded as 0 if there is no increase (including decrease), 1 if there is an increase.

Control Variables

Age is represented as three age groups: (1) younger than 70 = "0", (2) 70-79 ="1" and (3) 80 or older ="2". Marital status of the elderly is coded as a dummy variable, with unmarried (widowed, divorced, and never-married) contrasted with married. Living arrangement is categorized in three groups: (1) living without children or grandchildren="0", (2) living with children (including grandchildren) ="1" and (3) living with grandchildren, but no children="2".

For SES variables, since the rural elderly population generally has little education, education is coded as 0 if the respondent is illiterate and 1 if literate. Occupation (before retirement) is categorized in two groups: farming or housework is coded as 0; non-agricultural work as 1. Income is coded as 1 if the respondent and/or their spouse receive income from work or a pension during the past 12 months. In general, higher SES means a person is better educated, is a non-agricultural worker, and is financially independent. The levels at Time 1 of control variables above are controlled in analysis.

Health status was measured as the sum of 15 items reflecting difficulty in performing personal activities of daily living (dressing or undressing, walking around the room, getting out of bed, standing up from a chair), instrumental activities of daily living (preparing meals, shopping, doing housework, taking the bus or train, managing money), and activities requiring physical strength, mobility, and flexibility (lifting a 10 kg. bag of rice, climbing one flight stairs, walking 100 meters, and stooping, crouching or kneeling). An elder is considered as functionally limited in a given activity if he or she has any degree of difficulty in performing that activity without help. Functional status is measured by the number of functional limitations at Time 1, ranging from 0 (none) to 15 (15 items), with a higher score indicating worse health status.

**Methods**

Given the gender differences in family and social roles, health, disablement outcomes and intergenerational support with their children, we run models for males and females separately. In addition, to correct for intra-subject correlation due to multiple observations of respondents in the pooled data set (Liang & Zeger, 1986), random effect logit models are employed using STATA (STATA, 2005).

We first describe the SRH among older men and women in different age groups. After stratifying the participants at the Time 1 interview into age groups of five years (60-64, 65-69, 70-74, 75-79, as well as 80 years and older), we report by gender the percentage of older people who report “good” health and have better health between Time 1 and Time 2. Second, we compare the change in intergenerational support between the elderly and their children to see whether there is a gender difference in intergenerational support between Time 1 and Time 2. Last, using a sample of male and

female older people in two separate random-effect logistic regression models, controlling for other health risks such as marital status, living arrangement, SES and functional disabilities, we analyze the association between SRH and intergenerational support in terms of gender. That is, we ask whether there is a gender difference in the effect of intergenerational support on subjective health of the elderly.

## RESULTS

Table 1 shows the distribution of SRH at Time 1 and the change between Time 1 and Time 2 among older persons in age groups across intervals of 5 years for males and females. We find that, in general, as age increases the percentage of respondents reporting "good" self-rating of health decreases. While the percentage of respondents with "good" self-rated health among young older men is significantly higher than that among young older women (60-64, 65-69, 70-74 and 75-79), the gender difference in SRH is not significant among the oldest elderly (80 years and older). Comparing the levels at Time 1 and at Time 2, the percentage of older men having "better" SRH is higher than older women at all ages, although this gender difference is not significant.

**--- Table 1 about here ---**

In Table 2, we show that there is a gender difference in intergenerational support between the elderly and their children. While the financial support provided by older women (0.83) is significantly less than by older men (1.16), instrumental exchanges received and provided between older women and their children (respectively 5.05 and 5.64) are greater than between older men and their children (respectively 2.29 and 3.54). As a whole, older men provide more financial support to their children than older women do, while older women exchange more instrumental support with their children than older men.

**--- Table 2 about here ---**

During the period between Time 1 and Time 2, the percentage of change in financial support received is highest: 57.47 percent of older men and 58.72 percent of older women received increased financial support from their children. Only 16.45 percent of older men received more instrumental

support, which is lower than that for older women (29.95 percent). However, 30.30 percent of older men provided more instrumental support, higher than that of older women (25.63 percent). In addition, about 42 percent of the elderly engaged in more emotional support with their children. As a whole, Table 2 shows that while the percentage of older men who provided more support to their children is higher than that of older women, the percentages of older women receiving more instrumental support are significantly higher than those of older men. There are no gender differences in financial support received by the elderly (or its change) and emotional support (or its change) between the elderly and their children.

Table 3 shows the results of testing for relationships between intergenerational support and SRH of the elderly by gender, controlling for health risk factors at Time 1. We see that, while older men who provide financial support to their children at Time 1 have a greater probability of being in "better" SRH (OR=1.147), increase of instrumental support received reduces the probability of being in "better" SRH (OR=0.363), but instrumental support received at Time 1 increases the probability that older men report "better" health (OR=1.024). For older women, while financial support received at Time 1 diminish the probability of being in "better" SRH (OR=0.729), increase of instrumental support provided enhances the probability of being in "better" SRH (OR=1.548). Increase of emotional support between Time 1 and Time 2 enhances the probability that older women have "better" health (OR=1.648).

**--- Table 3 about here ---**

Table 3 also shows that there are gender differences with respect to the relationship between the subjective health and socio-demographic characteristics of the elderly. Married older women are less likely to assess themselves as being in "better" health than older women without spouse (OR=0.279), which suggests that older women with a spouse obtain no benefit from their marriage, but may suffer the burden of caregiving to their spouse .Living with grandchildren (no children), older men are more likely to be in "better" SRH (OR=1.491). However, financial independence reduces the probability that older men have "better" SRH (OR=0.506), which implies that paid work may have a negative impact on subjective health of older men, probably because compared to those depending on their

children, working older men have to dedicate their energy and time to earn money which might have a negative effect on their health.

## DISCUSSION

Our assesment of gender differences in the effects of intergenerational support is divided into financial support, instrumental support and emotional support, on subjective health of the elderly in rural China.

As reported elsewhere (Idler, 2003), we confirm that the SRH of older women is worse than that of older men in rural China. This is because with lower mortality and longer expectation of life, older women suffer longer lasting disability and lower quality of later life than do older men. On the other hand, because economic resources generally have direct effects on the health status of the elderly, older women who have fewer resources usually assess their health status "worse" than do older men. However, there is no gender difference in subjective health of the oldest old; this might be due, first, to the gender difference in mortality of the elderly (most of oldest old are female), and second, to the selection by death, which leaves the surviving oldest old assessing their health status as better.

Our study suggests that there are gender differences in intergenerational support between the elderly and their children. The increase in the amount of financial support provided by older women to their children is significantly smaller than that provided by older men. This may be because most older women do not have income, and therefore can make less financial transfers to their children. However, there is no gender difference in the change of financial support that the elderly receive. Compared with older men, older women usually receive and provide more instrumental support. One reason for this is the gender difference in roles in society and the family. Another is that women offer more instrumental support throughout their lives than do men (Barker et al., 1998), and as a consequence of their close emotional bond with their children become the major recipients of their children's help (Fei, 1983).

We find that there are gender differences in the relationship between intergenerational support and subjective health of the elderly. Financial support provided by older men to their children is positively associated with increase of the formers' subjective health, possibly because with

independence, older men can generally afford financial assistance to their children without risking their health status. However, for older women, financial support received by older women from their children is negatively associated with increase of subjective health. This suggests that although there is no gender difference in the flow of financial support received, because they are economically disadvantaged, older women may suffer excessive dependency, which induces worse subjective health.

More instrumental support received from their children is negatively associated with increase of the subjective health of older men, while an increase in instrumental support provided has a positive effect on subjective health of older women. This suggests that elderly parents prefer to be independent for long as possible but support from children becomes important when the elderly develop disabilities in functional activities. The redundancy of adequate instrumental support received may overburden the mental health of older men, or even increase the risk to their subjective heath. However, instrumental support provided from older women to their children may be reciprocated by support from children.

We also find that an increase in mutual emotional support has a positive effect on subjective health of older women, but not older men, suggesting that older women may be more sensitive to the sentiment between generations. This is consistent with the pattern suggested by Silverstein et al. (1995) that because of the traditional gender-based division of domains in families, transfers of the emotional component of family life generally occur towards mothers rather than towards fathers.

As a whole, there is a pattern of demand-based exchange in the intergenerational support between the elderly and their children in rural China. More supports do not have positive effect on the health status of the elderly, but may undermine their autonomy, or even worsen their subjective health. This suggests that an increase in demand-based transfers, such as financial support and instrumental support from children to the elderly is negatively associated with an increase of older people's subjective health. By contrast, increase in financial and instrumental support that the elderly can offer does not cause deterioration in their subjective health, but appears to solidify reciprocity between elderly parents and their children. Those elderly who provide economic or instrumental assistance become the recipients of feedback from their children, which improves the mental status and

subjective health of the former. Differences in socio-economic resources and division of labor may result in a gender difference in the relationship between intergenerational support and subjective health of older individuals. While the subjective health of older men is sensitive to financial support provided and instrumental support received, which is consistent with the traditional control of economic resources held by male family members, older women are affected by financial support received and instrumental support provided, which accords with the idea that females are the traditional kinkeepers in the family. We also find that increase in emotional support has significantly positive effect on the subjective health of older women. Thus emotional support between adult children and their elderly parents, especially an elderly mother, becomes stronger, perhaps in order to cope with the needs of the elderly, and this in turn strengthens the intergenerational relationship.

Due to the son preference of family support in rural China, further studies should focus on the gender difference between adult children with respect to flows of supports and in the effects of intergenerational support on health status and well-being of the elderly. In our regression analyses, fewer results of the relationship between intergenerational support and SRH of the elderly are significant (see Table 3), which may be because the transfer involving each child has different effects on the subjective health of elderly parents. Multi-level analysis will be necessary to clarify differences among children in the relationship between intergenerational support and the health or well-being of the elderly.

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**Table 1 Gender Difference in Self-rated Health of the Rural Elderly: At Time 1 and Change (N=2,036)**

| Age Group | Males | | Females | | Gender difference (Chi test) |
|---|---|---|---|---|---|
| | Number of obs. | Percent of risk population | Number of obs. | Percent of risk population | |
| **SRH at Time 1: Good** | | | | | |
| 60-64 | 101 | 42.26 | 57 | 28.93 | ** |
| 65-69 | 124 | 43.21 | 66 | 25.10 | *** |
| 70-74 | 75 | 44.12 | 55 | 27.09 | ** |
| 75-79 | 63 | 36.21 | 72 | 26.67 | * |
| 80+ | 16 | 33.33 | 36 | 20.34 | + |
| **Change of SRH[a]: Better** | | | | | |
| 60-64 | 51 | 21.25 | 36 | 18.18 | n.s. |
| 65-69 | 52 | 17.99 | 38 | 14.45 | n.s. |
| 70-74 | 32 | 18.82 | 28 | 13.79 | n.s. |
| 75-79 | 29 | 16.57 | 30 | 11.11 | + |
| 80+ | 12 | 24.00 | 24 | 13.48 | + |

(1) [a] Change of SRH: Compared to the level at Time 1, the change of SRH at Time 2 is classified as "better", "worse", and "no change", which are condensed into two groups: "better" and "no better" (including "worse" and "no change").

(2) N is the total number of observations.

(3) *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$； + $p < 0.1$; n.s., not significant.

Data Source: The survey of "Well-being of Elderly in Anhui Province, China" conducted in 2001, 2003 and 2006.

**Table 2 Gender Difference in Intergenerational Support between the Rural Elderly and Their Children: at Time 1 and Change (N=2,036)**

| Intergenerational Support | Males (N=924) | Females (N=1112) | Gender Difference |
|---|---|---|---|
| **At Time 1:** | | | |
| Financial support received | 2.80 | 2.76 | n.s. |
| Financial support provided | 1.16 | 0.83 | *** |
| Instrumental support received | 2.29 | 5.05 | *** |
| Instrumental support provided | 3.54 | 5.64 | *** |
| Emotional support | 7.34 | 7.36 | n.s. |
| **Change[a]:** | | | |
| Financial support received | 57.47 | 58.72 | n.s. |
| Financial support provided | 22.62 | 16.46 | *** |
| Instrumental support received | 16.45 | 29.95 | *** |
| Instrumental support provided | 30.30 | 25.63 | * |
| Emotional support | 41.23 | 42.18 | n.s. |

(1) [a] per 100: the percentage of older men/women with increase of support, comparing the level between Time 1and Time 2.

(2) N is the total number of observations.

(3) *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$; n.s., not significant.

Data Source: The survey of "Well-being of Elderly in Anhui Province, China" conducted in 2001, 2003 and 2006.

## Table 3 Odds Ratios of Intergenerational Support on Self-rated Health by Gender (N=2,036)

| Independent Variables | Male | Female |
|---|---|---|
| **Intergenerational Support:** | | |
| Financial support received: Time 1 | 0.864 | 0.729* |
| Change of financial support received (Increase) | 1.014 | 0.869 |
| Financial support provided: Time 1 | 1.147* | 1.018 |
| Change of financial support provided (Increase) | 0.906 | 1.245 |
| Instrumental support received: Time 1 | 1.024* | 1.009 |
| Change of instrumental support received (Increase) | 0.363* | 1.060 |
| Instrumental support provided: Time 1 | 0.983 | 1.000 |
| Change of instrumental support provided (Increase) | 1.018 | 1.548** |
| Emotional support: Time 1 | 0.886+ | 0.945 |
| Change of emotional support (Increase) | 1.063 | 1.648** |
| **Socio-demographic Characteristics** | | |
| Age group | | |
| 70-79 | 0.799 | 0.632+ |
| 80 or older | 1.277 | 0.919 |
| Marital status（Married） | 0.928 | 0.279** |
| Living arrangement | | |
| Living with children (including grandchildren) | 1.302 | 0.479+ |
| Living with grandchildren (no children) | 1.491* | 0.490+ |
| **Socio-economic Status:** | | |
| Education (Literate) | 0.952 | 1.390 |
| Occupation (Non-agricultural work) | 0.638 | 1.315 |
| Income (Having income) | 0.506* | 0.962 |
| **Health Status:** | | |
| Functional disabilities | 0.945* | 0.922** |
| **N** | 924 | 1112 |
| **chi2** | 371.69*** | 474.64*** |

(1)The reference categories of the categorical variables are omitted, including no increase of financial support received, no increase of financial support provided, no increase of instrumental support received, no increase of instrumental support provided, no increase of emotional support, 60-69, unmarried, living without children or grandchildren, illiterate, farming or housework, having no income.

(2) All variables of socio-demographic characteristics, SES and health status are measured at Time 1.

(3) Odds ratios and their significant level are corrected for intra-subject correlation due to multiple observations of respondents in the pooled data set.

(4) N is the total number of observations.

(5) *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; + $p < 0.1$

Data Source: The survey of “Well-being of Elderly in Anhui Province, China” conducted in 2001, 2003 and 2006.