

Care for Grandchildren and Psychological Well-being of Older Parents in Rural China

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Abstract: Using data from the baseline and follow-up surveys of “Well-being of Elderly in Anhui Province, China” conducted in 2001 and in 2003 respectively by the Institute for Population and Development Studies of Xi'an Jiaotong University, this paper used multiple regression in order to estimate the effects of care for grandchildren on psychological well-being of the grandparents. The results showed that care for grandchildren directly improved grandparents' psychological well-being, and among which the gender of grandparents or children played important roles. Controlling the out-migration of children and intergenerational supports, we found grandparents providing grandchild care to sons had better psychological well-being, which suggested that traditional “son preference” norm had an effect on psychological well-being of the grandparents. Care for daughters' grandchildren improved the psychological well-being of grandfathers, but not of grandmothers, which suggested that altruistic support had a protective effect on the grandfathers' psychological well-being, while grandmother benefited more from reciprocity between generations.

Key Words: the elderly; psychological well-being; out-migration; grandchildren

BACKGROUND

As the primary source of security for older adults in China, particularly in rural areas, adult children are most often the sole providers of basic financial support and instrumental support to their elderly parents (Lee and Xiao, 1998). In a traditional culture still strongly marked by Confucian ideals of filial piety, adult children have both the moral and legal obligation to support their elderly parents, yet, while the older adults are also important providers of support to their children (Rossi and Rossi, 1990). With traditional familial complex, older adults concern more obligations to their descendants in China (Yang and He, 2004), where care for grandchildren is a widespread phenomenon.

However, with the transforms of economic and society, the structure and function of family have changed rapidly in China. The result of this modernization has been to increase out-migration of adult labor-force, reduce the size of family, and decrease older adults' social resource attainable, which cast doubt on the continued viability of the Chinese family to serve its older members (Joseph and Phillips 1999). Since day-care in rural areas of China are scarce, grandparents become valuable resources when parents out-migrate to find work (Chen et al., 2000). The elderly parents contribute to family wealth through care for grandchildren when their adult children go out to work for more earns (Agree et al., 2002). On the other hand, the results of survey in Boyang of China show that though 63% of older adults take voluntarily responsibilities of care for grandchildren, the majority are overburdened (Li, 2004). The studies in the West also show that care for grandchildren may cause the deterioration of older persons' psychological health (Blustein et al., 2004; Minkler et al., 1997; Szinovacz et al., 1999). However, some studies reveal that care for grandchildren is beneficial to psychological well-being of the elderly who get returns and satisfaction through the help (Gattai and Musatti, 1999; Hayslip et al., 1998). However, relatively little is known about, in rural China, care for grandchildren by the older generation more broadly eliciting return intergenerational flows and its consequences.

An alternative but complementary perspective on the intergenerational relationships focuses on the gender roles. Because of effects of traditional patrilineal family system in China, there may be profound gender differences in intergenerational support in China. The main study object of this paper is that, under the background of out-migration of labor force, how cares for grandchild to adult children (sons/daughters) from different gender of the elderly affect on psychological well-being of the latter.

An alternative but complementary perspective on the rural-to-urban migration of working age adults focuses on the new roles that migration has brought older people in the developing world. Since day-care in rural areas of China are scarce, grandparents become valuable resources when parents need to migrate to find work (Chen, Short, and Entwisle 2000).

MODELS

Intergenerational Support

In societies with few social supports, family members are often intertwined in a mutually supportive web that optimizes the satisfaction of both personal and communal family needs. Several studies focus on the Chinese family have found that, as a network structure, family have conceptualized its social organization through which the distribution of resources promotes systemic integrity and maximizes individual well-being (Lee et al., 1994; Sun, 2002; Yang, 1996). Like as other social relationships, Corporate and mutual aid models are governed by a norm of reciprocity (Molm and Cook, 1995), and specify that the capacity of adult children to provide support to older parents relies on the support their parents earlier provided to them. For example, since day-care in rural China are scarce, grandparents become valuable resources when parents need to out for work (Chen et al., 2000), which is considered as a shorter-term strategy to attain mutual needs cross generations through which adult children can attain better wages ().

While intergenerational transfers as an exchange of resources, we note alternative perspectives on transfer motivations as well, such as altruistic motivations, which are attributed to those making transfers based on the economic, social and health needs of transfer recipients (Altonji, Hayashi and Kotlikoff 1992). With the traditional filial piety culture in traditional Chinese intergenerational relationships (Yang and Wu, 2002), the elderly notably stress their responsibilities and obligations to their descendants, making all their efforts for their children (including grandchildren) without any expectation for returns. Since most young grandchildren under special registered permanent residence in China splitting into urban areas and rural areas, have not migrated to cities with their parents (adult children) out for job, grandparents may serve as full-time or part-time caretakers of their grandchildren. However, in practice, two-way flows of support may reflect double-sided altruism, where each generation gives unconditionally to the other based on need (Sloan, Zhang and Wang 2002). So it is empirically difficult to differentiate reciprocity from double-sided altruism, as both are superficially manifest by two-way flows of support.

Gender and Grandchild-care

Many studies concerning the relationship between the elderly and their grandchildren found that role differences exist between older men and older women, -- the older men emphasized task-oriented involvements in spheres outside the family; the women were more likely to emphasize interpersonal dynamics and the quality of ties in the family (Hagestad, 1985). However, there are not a few articles which suggest that the differences between grandfathers and grandmothers may become less distinct during the transition from middle age to old age (eg. Cherlin and Furstenberg, 1986). Thomas (1986) found differences between grandfathers and grandmothers in the abstract context of grandparenthood in general. In the more concrete context of a specific relationship, however, the differences between grandparents in the view of the relationships were only partially found (Thomas, 1989). And it is premature to make definitive conclusions about gender differences in grandparent-grandchildren relations.

On the other hand, there are distinct differences in status and roles between sons and daughters in traditional patrilineal family system (Greenhalgh, 1985). With prominent "son preference", the elderly are apt to provide grandchild-care to their sons (Chen et al., 2000). Though Yang (2000) found that maternal, but not paternal, grandparents received greater monetary support from children when they engaged in child-care activities, in the perspective of outcome of psychological well-being, altruistic behaviors had a protective effect among grandfathers, but not among grandmothers (Fujiwara and Lee, 2007). These finding suggested that patrilineal family and "sons preference" play an important role in family support pattern and its effects on well-being of the elderly, however, paternal line, more beneficial from altruistic behaviors, may be based less on compensatory principles.

This paper will study how grandchild-care has effects on psychological well-being of the elderly in rural China. Since there are gender differences in grandchild-care and its effects on psychological well-being of the elderly, we will investigate different gender of the elderly respectively. We also consider re-distribution of resources in family through which out-migration of adult children, especially the effects of different gender. The following are our main questions.

1. Are there gender differences in the effect of grandchild-care to sons/daughters on the psychological well-being between older men and older women?

2. Does receiving intergenerational support from adult children fully explain why grandchild-care influences the psychological well-being of different gender of older parents?
3. Are there gender differences in the effect of the change of grandchild-care through out-migration of sons/daughters on the psychological well-being between older men and older women?

METHODS

Data

Data for this study were derived from the survey “Well-being of Elderly Survey in Anhui Province”, which was carried out in 2001 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, a response rate of 95.3%. 1,391 respondents completed the follow-up survey in 2003. After omitting respondents without children and cases with missing data on relevant study variables, 1,256 respondents were included in our analyses, and each interviewee has two observations.

Measurement

Dependent Variables

Psychological well-being was measured by depression by using nine questions based on the Center for Epidemiologic Studies–Depression scale (Radloff, 1977). Three items indicated feelings of positive affect (feeling happy, enjoying life, feeling pleasure), two items indicated feelings of negative affect (feeling lonely, feeling upset), two items indicated feelings of marginalization (feeling useless, having nothing to do), and two items indicated somatic symptoms (having poor appetite, having trouble sleeping). We coded the frequency with which the participant had experienced each symptom in the past week as 0 (rarely or none of the time), 1 (some of the time), or 2 (most of the time). After we reversed the coding of positive affect items, we summed the nine variables, which resulted in a depression score ranging from 0 to 18, with a

higher score indicating greater depression. The alpha reliability coefficient for the nine items was 0.78. Comparing the level in 2001 (baseline survey) and in 2003 (follow-up survey), the change of CESD was measured as dependent variable. Because the change of CESD was affected by the level at baseline survey, this level in 2001 was also included in the analysis.

Independent Variables

The contribution of respondents to the care of their grandchildren was measured as the frequency with which they provided grandchild-care for the offspring of all adult children during the past year. This variable ranged from 0-6, with 0= "not at all", 1= "seldom", 2="once per month", 3= "several times per month", 4= "at least once per week", 5= "every day, but not for the entire day", and 6= "every day, for the entire day". Summing the frequency of grandchild-care to each son, the total score is considered as the grandchild-care for sons of an older people. Similarly, grandchild-care for daughters is measured by the total score of the frequency of grandchild-care to each daughter. Comparing the level in 2001 (baseline survey) and in 2003 (follow-up), the change of grandchild-care is considered as the measure variable in analysis.

Control Variables

We considered three types of intergenerational support: financial transfers, instrumental support, and emotional support. Financial support received is measured by question "*Did the child send you (or your spouse living with you now) money, food or gift?*", We took the maximum value across all children to represent financial support received in baseline survey (Our expectation is that the amount of assistance received from a main provider, especially in families with migrant children, is more salient than the total transfer amount.). The change of financial support received was measured by comparing the level in 2001 (baseline survey) and in 2003 (follow-up survey).

Instrumental support received from children (including children's spouse and grand-children) to elderly parents during the past 12 months was measured in two areas: (1) household tasks, such as cleaning the house and washing clothes, and (2) personal care tasks such as bathing and dressing, which are classified into four scales: 0= "Seldom", 1="Several times per month", 2="At least once per week", 3= "Every day". Summing the frequency of instrumental support from each child, the

total score was considered as the instrumental support received of an elder people. And comparing the level in 2001 (baseline survey) and in 2003 (follow-up), the change of instrumental support was included in analysis.

Emotional support was measured by the three questions adapted from the intergenerational solidarity inventory (Mangen et al. 1988): (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 items 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 was computed for each child, ranging from 3-9, with a higher score indicating the higher quality of parent-child relationship. For each parent we took the highest total score across all children for each parent to indicate this construct. The reliability coefficient for these items was 0.82. Comparing the level in 2001 (baseline survey) and in 2003 (follow-up), the change of emotional support was considered in analysis.

Since we took the highest score across all children represented financial and emotional support received for each older people, the scores for these two variables did not account for variability across children within family. In order to investigate whether having children who contributed less economically or who were less emotionally close affected the psychological well-being of older parents, we calculated standard deviation for each type of support as a measure of dispersion among children in each family. Larger standard deviation scores indicated a wider range across siblings.

As the out-migration of adult children brought on change of spacial distribution of children, the out-migration status of different gender of children for each older parent was considered as control variable.

Variables describing older parents included age group, marital status, SES (education, occupation and income) and health status. As cross-sectional variables, age group (0= "60-79", 1= "80 or

older"); education (0= "no formal education", 1= "at least some formal education"); occupation or previous occupation (0= "non-agricultural", 1= "agricultural") didn't change during the interval between baseline survey and follow-up survey. As the proportion of transformation is lower than 5%, marital status (0= "widowed, divorced, separated", 1= "married, living with spouse") was considered as cross-sectional variable. However, because the income changed in the interval of two surveys, besides controlling the baseline level of the income, the decrease of income between two surveys was also considered in the analysis.

We assessed health status using two scales: functional status and chronic disease. Functional status is measured as the sum of 6 items reflecting difficulty in performing personal activities of daily living (PADL). Personal activities of daily living included bathing, putting on and taking off clothes, walking around the room, using the toilet, and eating a meal (Katz 1963). Since the functional status at survey timing in 2003 was close relative to the former status, whether functional status decreased between two surveys and the level in baseline survey both were considered in analysis. Chronic disease was indicated by the number of chronic illnesses reported by the respondents, ranging from 0 (none) to 12 (12 items). Comparing the scores of chronic diseases in 2001 and in 2003, the change of chronic diseases and the baseline level were both included as variables.

Statistical Methods

The preceding suggested that older men and older women were analyzed separately to account for gender differences in the magnitude of the relationships between grandchild-care and health. Given that men and women often exhibit different lifestyles, family and social roles, health and well-being (Lamb, 1997), we run models for males and females separately. We used ordinary least squares regression in order to predict psychological well-being with a set of hierarchical equations. We added sequentially five blocks of variables to the equations, representing, in order of entry, socio-demographic characteristics, grandchild-care, out-migration of children, intergenerational transfers, and interaction of grandchild-care and out-migration of children. This ordering provided a means to observe how variables added in later blocks explained variables entered earlier; our particular interest was the extent to which out-migration of children and intergenerational transfers

mediated the effects of grandchild-care.

RESULTS

Table 1 presents five hierarchical regression equations predicting older men's psychological well-being. The first equation reveals that older men with more income, better functional status and less chronic diseases in baseline survey have higher risks of developing depressive symptoms, and correspondingly, decrease of income, decline of functional status and increase of chronic diseases deteriorate the psychological well-being of older men. The second equation, which added grandchild-care variables by gender, shows that the level of providing grandchild-care to daughters in baseline survey and the change of grandchild-care for daughters in the interval have both negative effects on the change of depression symptoms of older men, that is the more providing grandchild-care to daughters, the better psychological well-being of grandfather, however, providing grandchild-care to sons have no significant effects. Controlling the socio-demographic characteristics and grandchild-care variables, out-migration of daughters is positive relative to the change of depression, suggesting that psychological well-being of older man is worsen if his any daughter go out from village during the survey interval.

--- Table 1 about here ---

The third equation adds intergenerational transfer variables. We find that older men who received greater amounts of emotional support from their closest child in baseline have a lower risk of developing depressive symptoms than those who received lesser amounts. And the change of emotional support is also inversely related to the change of depression. The effect of the standard deviation scores measuring within-family variation in emotional cohesion is positive and statistically significant, which suggests that older men, although benefiting psychologically from children with whom they had closest emotional relationship, are disadvantaged by other children with whom they have weaker relationship. In addition, controlling intergenerational transfer variables, the effects of the level of grandchild-care for daughters in baseline survey and its change during survey interval become lower, especially the baseline level loses significance, which implies that older men who provide grandchild-care to their daughter may have better

psychological well-being with stronger emotional cohesion with their daughters.

The final equation in Table 1 introduces two interaction terms of interest. The interaction between the change of childcare grandparents provided to sons and out-migration of sons is negative, indicating that the change of child-care is more beneficial to the psychological well-being of older men with out-migration of sons than to those without out-migration of sons.

Equations predicting older women's psychological well-being are shown in Table 2. Results presented in first equation, which only controls for the socio-demographic variables, reveals that oldest-old, higher income, better functional status, less chronic diseases in baseline survey have lower chances of developing depressive symptoms, and decrease of income, decline of functional status and increase of chronic diseases increases the risks of developing depressive symptoms of older women. Controlling the grandchild-care variables by gender, the second equation reveals that the level of providing grandchild-care to sons in baseline survey and the change of grandchild-care for sons have both negative effects on the change of psychological well-being of older women, while grandchild-care for daughters and its change have no significant effects. The third equation added out-migration of children by gender variables, shows that neither out-migration of sons nor out-migration of daughters in survey interval is significantly associated with the change of psychological well-being of older women.

--- Table 2 about here ---

Added the intergenerational transfers variables, the fourth equation indicates that the change of instrumental support and emotional support both have both negative effects on the increase of depressive symptoms, that is the more receiving instrumental support and emotional support, the better psychological well-being. However, the results also show that the standard deviation scores of financial support and emotional support are inversely associated with the change of psychological well-being of older women, suggesting that variabilities of financial support and emotional cohesion across adult children within family, that is having one child or more who contribute less economically or who are less emotionally close have higher risks of developing

depressive symptoms of older women. Finally, the two interaction terms added in the final equation do not influence the change of depression.

DISCUSSION

This paper studied how providing grandchild-care affected psychological well-being of the grandparents in rural China where out-migration of young labor force was prevailing. We found that care for grandchildren directly improved grandparents' psychological well-being, and among which the gender of providers (grandparents) and receptors (adult children) played dominative roles. The results controlling the out-migration of children and intergenerational supports showed that grandparents providing grandchild-care to sons had better psychological well-being, which suggested that it was important of traditional "son preference" norm to psychological well-being of the grandparents. However, care for daughters' grandchildren improved the psychological well-being of grandfathers, but not of grandmothers, which suggested that altruistic support had a protective effect on the grandfathers' psychological well-being, while grandmother benefited more from reciprocity between generations.

With regard to the effect of care for grandchildren on psychological well-being of older parents, we found that, the rural elderly benefited from providing grandchild-care to their adult children through which got more satisfaction. This accorded the traditional "community sense" (Yang and Wu, 2002) in China, that is the lifetime objectives of a peasant are to continue ancestor worship for their ancestors, to leave more wealth to the best of his abilities for their offspring. Older parents tried their best to contribute for their children, especially for sons, accordingly, providing grandchild-care became their responsibilities, through which satisfied themselves with their grandchildren improving their psychological well-being. Supporting the effects of "sons preference" based on Chinese traditional patrilineal family system on older parents' well-being psychological, we found that providing grandchild-care for sons are beneficial to psychological well-being of older parents, either older men or older women. Whereas, economic and instrumental reciprocation for grandchild-care provided by older parents were stronger among daughters than among sons (not reported in results). The evidence that older parents benefit psychologically more from care for their grandchildren was attributed the altruistic behaviors of

older parents who have complex of family continuousness.

We also investigated whether the link between care for grandchildren and psychological well-being was mediated by the providing grandchild-care to enable or inhibit the flow of financial, instrumental, and emotional support from adult children. We found that the return received from children who received the grandchild assistances was the primary reason why providing grandchild-care was psychologically beneficial to grandparents. This study showed that the psychological well-being of older women was more significantly influence by financial and instrumental support from adult children, which implied that the financial and instrumental transfers provided to grandparents may serve as compensation for their custodial care of grandchildren as part of a time-for-money exchange that exemplifies the functional integration between generations in the rural Chinese family. The evidence that psychological well-being of older women benefited more from this reciprocation is relative to the disadvantage of women in economic, social and health status.

Furthermore, the psychological well-being of older parents was conditioned by out-migration of adult children and changing care for grandchildren, and, to a lesser degree, by gender of the adult child. According to the results to change of psychological well-being of older men, that there was no main effect of providing grandchild-care for sons suggested that grandchild-care for son, especially provided by older grandfathers who, due to the traditional roles in family, were not classified as "the parental surrogate" type (Neugarten and Weinstein, 1964) is relevant primarily for out-migration of sons. In order to better interpret this interaction, we plot predicted values in Figure 1 with other covariates held constant. Older grandfathers who had sons out-migrating benefited psychologically increasingly more for every additional unit of grandchild-care they provided, while who had no sons out-migrating not. This may be because that older parents were satisfied psychologically more with the sons out-migrating who bear the expectation of "guang zong yao zu". However, the effects of providing grandchild-care on psychological well-being of older grandmothers were not discriminated significantly among whether having out-migration of sons suggesting that the protective effect of altruistic assistances on grandmothers' psychological well-being is less prominent than ones on grandfathers' psychological well-being.

--- Figure 1 about here ---

Anyway, we found some evidence that traditional family norms conditioned the effects of grandchild-care on older parents' psychological well-being. Culturally traditional and altruistic older parents benefited more from providing care for grandchildren. This provides evidence that older Chinese parents holding traditional family norms tend to value productivity in later life. Social mores in China encourage older people to occupy productive roles and avoid dependency. Helping children and grandchildren is away to fulfill the expectation to live an active life in old age. We also found that, although the mechanisms were different, providing assistances either for sons or for daughters benefited the psychological well-being, in some extent which suggested that, although "sons preference" of traditional notion was still strong, as socioeconomic status of women was improving under the background of socioeconomic transform and migration of labor force, sons and daughters, based on the needs of family support, tended to be equal in the intergenerational relationship.

With the limiting study purpose with which older parents were studies as objectives, this research has not reviewed the change of care for grandchildren to unit adult child out-migrating and its consequences from the perspective of adult child. The further research involves the intergenerational transfers from older parents to their children, in order to test the impact of the net flows between generations.

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**Table 1 Odds Ratios of Providing Grandchild-Care on
Depression of Older Men (N=573)**

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	11.312***	11.286***	11.144***	15.401***	15.285***
Depression (baseline)	-0.815***	-0.819***	-0.817***	-0.870***	-0.870***
<u>Socio-economic Status</u>					
Age group: 80 or older	0.220	0.255	0.203	0.169	0.188
Marital status: Married\	-0.272	-0.244	-0.296	-0.133	-0.113
Education: Literate	-0.127	-0.118	-0.087	0.073	0.027
Occupation: Non-agricultural work	-0.070	-0.056	-0.013	0.003	0.084
Income (baseline)	-0.476***	-0.469***	-0.452**	-0.531***	-0.542***
Change of Income	0.813*	0.822*	0.802*	0.856**	0.843**
Functional disabilities (baseline)	-0.396***	-0.394***	-0.393***	-0.413***	-0.400***
Change of functional disabilities	2.850***	2.796***	2.709***	2.498***	2.483***
Chronic diseases (baseline)	0.261**	0.267**	0.269**	0.244**	0.239**
Change of Chronic diseases	1.145**	1.152**	1.164**	1.092**	1.090**
<u>Providing Care for Grandchildren</u>					
Grandchild-care for sons (baseline)		-0.003	-0.005	0.002	-0.001
Change of grandchild-care for sons		-0.008	-0.010	0.001	0.039
Grandchild-care for daughters (baseline)		-0.171*	-0.183*	-0.104	-0.109
Change of grandchild-care for daughters		-0.213**	-0.214**	-0.164*	-0.159*
<u>Out-Migration of Children</u>					
Out-migration of sons			0.262	0.388	0.181
Out-migration of daughters			0.876+	0.816+	0.830+
<u>Intergenerational Support</u>					
Maximum value of financial support (baseline)				-0.364	-0.372
Standard deviation of financial support (baseline)				-0.065	-0.085
Change of financial support				-0.137	-0.144
Instrumental support (baseline)				-0.012	-0.011
Change of instrumental support				-0.007	-0.007
Maximum of emotional support (baseline)				-0.527**	-0.529**
Standard deviation of emotional support (baseline)				0.721***	0.737***
Change of emotional support				-0.531***	-0.536***
<u>Interactions</u>					
Providing grandchild-care for sons * out-migration of sons					-0.170*
Providing grandchild-care for daughters * out-migration of daughters					-0.014
R ²	0.461	0.465	0.469	0.501	0.504

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

**Table 1 Odds Ratios of Providing Grandchild-Care on
Depression of Older Women (N=683)**

Independent Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Constant	8.921***	8.970***	8.968***	13.200***	13.230***
Depression (baseline)	-0.771***	-0.781***	-0.780***	-0.834***	-0.835***
<u>Socio-economic Status</u>					
Age group: 80 or older	-0.633+	-0.260	-0.258	-0.403	-0.400
Marital status: Married\	-0.026	0.030	0.027	-0.201	-0.203
Education: Literate	-0.814	-0.731	-0.722	-0.450	-0.448
Occupation: Non-agricultural work	-0.922	-1.012	-1.017	-1.082+	-1.069+
Income (baseline)	-0.403**	-0.415**	-0.416**	-0.454**	-0.450**
Change of Income	0.970**	1.012**	1.012**	0.961**	0.953**
Functional disabilities (baseline)	-0.214*	-0.205*	-0.205*	-0.253**	-0.254**
Change of functional disabilities	2.328***	2.273***	2.268***	2.167***	2.161***
Chronic diseases (baseline)	0.172+	0.174+	0.175+	0.214*	0.213*
Change of Chronic diseases	0.876**	0.934**	0.937*	0.809*	0.803*
<u>Providing Care for Grandchildren</u>					
Grandchild-care for sons (baseline)		-0.140**	-0.137*	-0.157*	-0.156**
Change of grandchild-care for sons		-0.127*	-0.126*	-0.135*	-0.126*
Grandchild-care for daughters (baseline)		-0.143	-0.144	-0.114	-0.111
Change of grandchild-care for daughters		-0.026	-0.027	-0.016	-0.022
<u>Out-Migration of Children</u>					
Out-migration of sons			-0.101	-0.010	-0.039
Out-migration of daughters			0.065	0.020	0.053
<u>Intergenerational Support</u>					
Maximum value of financial support (baseline)				0.289	0.292
Standard deviation of financial support (baseline)				0.422*	0.422*
Change of financial support				0.084	0.082
Instrumental support (baseline)				-0.071**	-0.071**
Change of instrumental support				-0.046**	-0.045**
Maximum of emotional support (baseline)				-0.823***	-0.825***
Standard deviation of emotional support (baseline)				0.680**	0.681**
Change of emotional support				-0.710***	-0.713***
<u>Interactions</u>					
Providing grandchild-care for sons * out-migration of sons					-0.023
Providing grandchild-care for daughters * out-migration of daughters					0.071
R ²	0.428	0.437	0.437	0.494	0.494

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

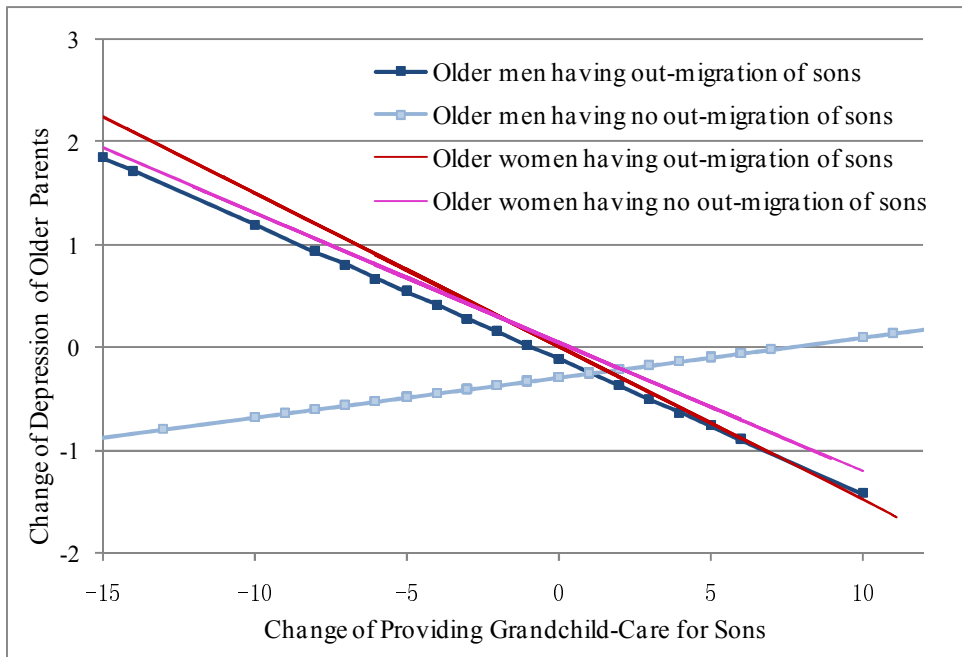


Figure 1 Predicted values of change of depression of older parents by change of providing grandchild-care for sons