

**ECONOMIC RESEARCH CENTER
DISCUSSION PAPER**

E-Series

No.E14-15

**The Role of Gender in Long-Term Care for
Older Parents: Evidence from India**

by

Yoshihiko Kadoya
Mostafa Khan

February 2015

**ECONOMIC RESEARCH CENTER
GRADUATE SCHOOL OF ECONOMICS
NAGOYA UNIVERSITY**

The Role of Gender in Long-Term Care for Older Parents: Evidence from India^{*}

Yoshihiko Kadoya[†]

Mostafa Khan[‡]

Abstract

This paper examines the role of gender in the long-term care for older parents in India. Who provides long-term care to elderly parents is still not conclusive. Provision of long-term care in developed countries may not be applicable for India because of the differences of socio-economic status. As a result, gender differences in long-term care for elderly parents in India need to be studied in light of the observed such differences. Using the data from the `Preference Parameters in India, 2011` conducted by the Osaka University, this paper finds that married sons` and their spouses serve as the primary caregiver to their parents while daughters are mostly provide care to their spouses` parents. After controlling the basic socio-economic factors like level of education of spouse, own mother, and spouse`s mother, age, and number of siblings, the results remain the same. Other family members also play a significant role in elderly parent care and parents rely least on the professional care. This paper contributes to the scarce empirical evidence on the provision of long-term care for older parents by married sons` and married daughters. The results of the study have implication for the son preference at birth in India.

Keywords: Gender differences, long term care-giving, professional care.

JEL classification codes: I3, J1, Z1

* Kadoya acknowledges the Grant-in-Aid of the Nitto Foundation for the financial supports.

† Graduate School of Economics, Nagoya University, Furo-cho, Chikusa, Nagoya 4648601, Japan. Email: yoshi.kadoya@soec.nagoya-u.ac.jp

‡ Graduate School of Economics, Nagoya University, Furo-cho, Chikusa, Nagoya 4648601, Japan. Email: saidur_rahim@yahoo.com

Introduction

This study examines the gender differences in long-term care to the elderly parents in India. The religious, cultural, and social environment of India suggest the male family members assume the overall responsibility of the family including the elderly parent care (Mandelbaum, 1948). The Indian social context also suggest that though unmarried daughters can provide care for elderly parents, married daughters have limited scope to do so as they are to leave parent's home as soon as they get married. However, there is a lack of empirical evidence on who actually assumes the responsibility of elderly parent care in India. This study tests the hypothesis that sons and their spouses are primarily responsible and involved in elderly parent care more than the married daughters do.

The studies on the role of gender in long-term parent care in the developed countries find that adult daughters are more engaged in the elderly and frail parent care (e.g., Dwyer and Coward, 1991; Horowitz, 1985; Stone, Cafferata and Shangl, 1987; Pinquart and Sorensen, 2006; Kadoya, 2011). Previous studies also emphasized the role of spouses in long term elderly care. In short, studies on the developed countries mostly reported that female members of the family are primarily the caregiver to the elderly people. However, Pinquart and Sorensen (2006), conducted a meta-analysis on 229 studies on the gender issues surrounding elderly care, reported that gender differences in caregiving were very small. The observed differences in gender role in elderly parent care could be caused by the social context and by what capacity males and females are providing elderly care (Datta, Poortinga, and Marcoen, 2003). The studies, conducted on the developed countries, on the gender differences in long-term care for the elderly parents hardly made any distinction between married and unmarried daughters that seems very important in the Indian context. As a result, married daughters role need to be evaluated with married sons and their spouses` to get a better insight about gender issues in long term parent care.

The study about long term care for the elderly parents has received greater attention in recent decades all over the world. A dramatic shift in the age structure of population justifies the concern for long term care of the elderly parents. The proportion of elderly people, people with age of 65 years and above, in the total world population will increase from 7.7% in 2010 to 15.6% in 2050 (United Nations, 2012) . The ratio in the total population in the developing countries is also expected to increase rapidly from 5.8% in 2010 to 14% in 2050; India, where population is still growing, is not an exception in that the elderly population ratio is to raise from 5.1% in 2010 to 12.7% in 2050 (United Nations, 2012). That is, a number of people who cannot take care of

themselves in developing countries is expected to be quadrupled by 2050 (WHO, 2014). Older people in general often suffer from the loss of mobility, feebleness, and other physical or mental problems. Long term care is needed in the form of nursing, community care, assisted living, residential and hospital care. With a population of over 1 billion, the problems related to the increasing share of elderly people is be very serious in India, where the elderly population has exceeded 100 million in 2011 and expected to grow over 170 million in 2026 (Agewell foundation, 2011).

Considering the traditional social structure where elderly people are treated with respect and honor, the concern about who will care for them is of crucial importance. In the traditional Indian society, keeping older parents at the old home or hiring professional care for them is not well accepted. This is almost universal that parents feel comfortable to receive care from the family members at their old age. In the Asian context where filial piety is very strong (Sung, 1998), professional cares are seen as a dishonor to the parents when children are eligible to do so. Literature on the elderly caregiving reveals that family members, especially the spouses and children are the primary caregivers to their parents (McAuley and Arling, 1984, Sangl, 1983). Literature on the developed countries also reports that wife appeared to be the primary caregiver as female life expectancy is higher than male (Shanas, 1979). Among the children adult daughters provide more care to the elderly parents than the sons do.

The interpretation of gender role in elderly parent care can be viewed in the light of several theories. Household labor (Ross, 1987), stress and coping framework (Pearlin, Mullan, Semple, & Skaff, 1990), gender-role expectations framework (Barusch & Spaid, 1989), and gender-role specialization framework (Gillian, 1982) rationalizes female`s role as the primary caregiver to elderly parents. However, empirical evidence is not stable in reporting female`s role as the primary caregiver (Yee and Schulz, 2000). The gender distribution of caregiver is also influenced by the family structure and relationship of the caregiver. The socio-cultural context of the Indian society perceives sons` responsibility to take care of their parents (Hammad and Rajoria, 2013; Dharmalingam, 1996). Traditionally, Indian society is featured with joint families where older family members live with respect and honor. Families of married sons, unmarried children, and relatives usually take care of the parents. Indian society does not consider girls as the permanent member of the family but as the member of their husband`s family once they are married (Mandelbaum, 1948). Because of such belief, Indian parents rely mostly on their sons and daughter-in-laws for long term care. China and other South Asian countries also have similar outlook towards sons and daughters as the Indian society has (Chen et al., 2012; Wang et al., 2012). In a recent study, Kadoya and

Yin (2014) provide evidence that sons (and their wives) appear to be the primary caregiver to their parents in China. They also find that with the present socio-economic settings in China, parents` dependence on sons for long-term care would not be reduced by the development of social security. Larsen, Chung, and Das Gupta (1998) found that parent`s concern for long term care is significantly associated with the preference for sons in Korea. They further concluded that long term care is a manifestation of the kinship system which is also common in China and India. The prevalence of son preference in India has also been intensified because of the reducing number of children in a family. If the first child is a girl, parents` desire for a boy child become even more high because of the fear that there would be no one to take care at their old age.

Thus, in light of the observed inconsistency in the role of gender in long-term care for elderly parents and lack of comprehensive study on the Indian context, this study aims to provide empirical evidence on the role of married sons with their spouses and married daughters.

Literature Review

Much of the studies on the gender differences in the parental care giving find that females are more involved in the caregiving activities than the males. The phenomenon is evident both for the activities of daily living (ADLs) and instrumental activities of daily living (IADLs). Dwyer and Coward (1991) found that daughters were significantly more involved in the parent care than the sons in terms of both ADLs and IADLs even after controlling care giver and care receiver`s characteristics. Girls` appearance as the primary caregiver to the frail parents is also reported in the study of Horowitz (1985). He also found that sons provide care to the parents only in the absence of the eligible female siblings and found to rely mostly on their spouses if they are married. Stone, Cafferata, and Sangl (1987) findings about females` role as the primary caregiver are also similar to the previous literature. They found that informal caregivers of the disabled elders are predominantly female. Female caregivers not only provide care to the elderly parents but also assume greater burden and stress than the male caregivers (Pinquart and Sorensen, 2006; Horowitz, 1985). The female caregivers were also in need of maintaining a balance for other involvement such as child care, workplace and other responsibilities. Coward and Dwyer (1990) studied the informal caregivers based on the composition of sibling status. They found that mostly the daughters appeared to provide more care than sons to the parents. However, daughters and sons were found to spend same amount in time per day in parent care when they are

the only children. But, daughters of the mixed gender network provide significantly more care than sons do and also face higher level of stress and burden.

The study of Lee, Dwyer, and Coward (1993) observed the gender differences in parental caregiving from a different viewpoint. Their study partially rationalizes why do women are more likely to provide caregiving services to elderly parents. They found that gender of the parent requiring care partially determines the gender of the child providing care. Adult children are more likely to care parents of the same gender and parents are also more likely to receive care from the children of the same gender. They also found that girl children are more found in parent care as elderly mothers mostly requires care. Males` role as the caregivers is studied by Stoller (1990). Informal caregiving is predominantly provided by women. Apart from husbands, sons help in caregiving activities, though occasionally and become less involved in daily household activities.

However, Miller and Cafasso (1992) did not find the significance of gender differences so strong in caregiving. They used meta-analysis technique to cumulate results of 14 studies related to gender differences in caregiving. They found no significant gender differences in care recipients and total caregiver involvement in care. Female caregivers were found to be slightly more involved in personal care and household tasks. Pinqart and Sorensen (2006) studied the stress and burden assumed by the caregiver classified by gender. They found that women bear higher level of burden and depression and lower levels of subjective well-being and physical health but did not find much gender differences in caregiving.

The use of professional old age care is supposedly related to the cultural and social circumstances. Wallace, Levy-Storms, Kington, and Andersen (1998) also found that racial differences exist in the use of long term care. Older African Americans are less likely to use nursing home care. They found the difference to be caused by cultural, class and/or discrimination that may hinder equitable access to such services.

[Insert Table I here]

Table I shows development of long term care programs in selected countries. While the long term care is almost universal in the developed countries, it is underdeveloped in India and China. Indian families play the role of long term care giver to the older members as a part of family tradition (Agewell foundation, 2013). Desai, et al. (2010) also found that most of the older people are cared by their sons` families in India.

Data

This study has used data from the `Preference Parameters in India, 2011` study conducted by the Osaka University. The study was conducted in six major cities in India; Delhi, Mumbai, Bangalore, Chennai, Calcutta, and Hyderabad. The cities were selected based on population size and geography. The study conducted a face to face interview with 1280 respondents aged between 20 and 69. Out of 1037 valid responses, the present study uses 556 responses after scrutinizing the responses based on marital status and no missing answers. The study has used multistage sampling and allocation methods while sampling the data. To choose the number of respondents from each city, the study first made a predicted number of responses on the basis of target population using the Statistical Yearbook. An area from each city is randomly selected after dividing each city into four sections (East, west, north and south), which were then stratified into separate categories by gender, age, and socioeconomic characteristics and finally, potential participants from the families were chosen using Kish grid method.

Table II shows the descriptive statistics of the variables used in this paper to explain the gender difference in long-term care for the elderly parents in India. Somewhat less than fifty percent of the respondents are male. Average age of the respondents is around 45 years with maximum and minimum age of 70 and 21 respectively. Respondents` level of education ranges from illiterate to highest level of study with mean value of school level education. Spouses` level of education is almost similar to that of the respondents. Average level of education of the parents is less than the respondents and their spouses, which indicates that the country is progressing towards higher level of education. Yearly household income and assets, measured in thousand, reveal the picture of inequality of income and assets across the society. Finally, average number of siblings shows that Indian families have three/four children per family.

Simple observation

To find the primary evidence of the proposition that married sons and their spouses provide more care to elderly parents than the married daughters, this study analyses the answers of the interviewees while responding to the question about who is the primary caregiver of the parent when they need long term care. The respondents were required to choose from the following options: you (respondent), your spouse, your brother/sister or your spouse`s brother/sister, the spouse of the parent requiring care, other family member, nursing home or assisted living home, paid home help, or

other. To eliminate the problem of overlapping responses, the respondents were asked to choose only one option. Table III summarizes the fact about primary caregiver by separating the responses based on gender. The reason for unequal number of responses for father and mother is that some respondents have only one living parent.

The responses regarding primary caregiver of the parents offer several implications for the long term care and gender discrimination at birth in India. First, as perceived, Indian parents primarily rely on their children for long term care at the old age. First three options of the answer choices indicate children and their spouses as the primary caregiver. Table III shows that 78.63% parents depends primarily on their children for long term care. The figures are supportive to the findings of other studies on the concern for the aging population in India. In a recent study made on the widow discrimination in India, Kadoya and Yin (2012) provided evidence that children and their spouses served as the primary caregiver for the mothers over 80% cases.

Second, Indian parents depend more on the sons than the daughters for long term care at the old age. Put it in other way, sons take more care of their parents than the daughters in India. When option one of the answer choice was classified based on gender, the figure provides strong evidence that sons take more care than the daughters. While sons alone provide caregiving in 32.46% cases, the figure is only 2.83% for the daughters. Including the supports of the spouses, the figures stand as 42.03 for the sons and 7.12% for the daughters. The fact support the conjectures made in the previous studies that Indian parents rely more on the sons and their spouses for long term care.

Third, parents of the female respondents would find it difficult to get long term care, particularly when they are married in a distant place. The figures of the primary caregiver need to be examined along with the third and fifth option of the answer choice, caregiving by other siblings and other family members, to get more precise scenario. In case of female respondents, care giving by other siblings is 68.7% that increases to 87.61 including other family members, which indicates that parents of the daughters need to depend either on their other children or other family members. In case of sons' role as the primary caregiver, other siblings also play a significant role (41.16%) in providing long term care for their parents but less substantial than the daughters' case. The figures of table III also reflects the outcome of traditional Indian joint family structure and the number of children parents have. Parents often have the option to get long term care from other children and family members. However, the privilege of getting long term care from other family members would eventually be narrowed on the event of eroding joint family system. It would be interesting to observe the provision for long term care of the parents having only one son or one daughter or living in a nucleus

family.

Fourth, the results do not provide any concrete indication about the role of social security in reducing parents` dependence on their sons. It is observed that parents of the girls rely on other family members instead of taking professional care. In fact, choice six and seven, which could have been a better option for the parents having only daughters and no other family members to take care of, appears to be the least sought for option for the Indian parents. Kadoya and Yin (2012) also provided evidence on the reluctance of Indian parents to rely on professional care at their old age. They found that almost all the widowed mothers relied on their families rather than taking professional care. Thus, development of social security systems may not be very productive for the Indian parents as they hardly would like to take professional care at old age.

However, the implications inferred above may be biased as the figures of Table III classify the responses based merely on the gender. In reality, other attributes of the respondents such as age, income, educational background, sibling`s status, area of residence, religion, and caste may also affect the answer. The research needs to address the issue of causal relationship between long term care and gender differences, controlling these variables.

[Insert Table II here]

[Insert Table III here]

Methodology of Empirical Models

The model

This study uses probit regression models to examine the role of gender in long-term care for the elderly parents. Probit regression model has been used as it fits well for the purpose of this study that uses binary outcome variables. The parent care variables used in the estimation models are binary in nature that assumes the value of either 0 (not involved in parent care) or 1 (involved in parent care).

Description of variable used in the estimation models

Five explained and thirteen explaining variables have been used in the regression models. The dependent variables are I_care_own (1 = respondents care their own parent), I_care_spouse (1 = respondents care parents of their spouse), Couple_care_own (1 = respondents or spouses care parents of the respondents), Couple_care_spouse (1 = Respondents or spouses care parents of their spouses), Professional_care_own (1 = parent care by the nursing home or assisted living home or

home helper). The dependent variables are dummy variables that assume the value of 1 when respondents are the caregiver to their parents or spouse's parents individually or as a couple and 0 otherwise. The first dependent variable addresses whether respondents provide care to their own parents individually, the second dependent variable addresses whether respondents provide care to the parents of spouses individually, the third dependent variable addresses whether respondents with their spouse care parents as a couple, the fourth dependent variable addresses whether respondents and their spouses care parent of spouse as a couple, and finally, the fifth dependent variable addresses whether parent of the respondents receive professional care. The variables are designed in a way so that caregiving as an individual and as a couple is understood.

Thirteen independent variables have been used to find the role of gender in long term care for elderly parents. The variable `gender` indicates the gender of the respondents that assume the value 0 for female and 1 for male respondents. If married sons are appeared to be the primary caregiver, the gender coefficient will be positive. A number of variables used to take into account the educational background of respondents and their spouses, father and mother. Education makes the caregivers more responsible and capable. Level of education of the respondents` and spouses` parents is used as a dummy variable for joining in the pension programs assuming that higher level of education would enable parents to depend less on the children and rely more on the professional care. Household income and assets are also dummy variables used to measure the capability to avail professional long-term care. Household income is the total annual income of the family and household asset is the balance of assets of the family. Sufficient income and assets enable elderly parents to access to other means of long term care and thus, reduce responsibilities of the children. This is particularly beneficial for the elderly parents who do not have any capable children to provide long-term care. The scheduled caste variable is also a dummy variable used to denote the socially and economically vulnerable and people. This variable has been used to control a particular section of the population whose social structure is different than other castes and classes (Dasgupta, Seana, Mukhopadhyay, 1999). Sibling_self and Sibling_spouse indicate the number of siblings respondents and respondents` spouse have. Our study uses these two variables to control the effect of number and gender of siblings. Previous literature found that sibling network composition affect parent care (Coward and Dwyer, 1990).

[Insert Table IV here]

Estimation models

Estimation models based on five explained and thirteen explaining variables are as follows:

$$\text{Prob}(I_care_own = 1) = a + b (\text{Gender}) + c (\text{age}) + d (\text{Education}) + e (\text{E_spouse}) + f (\text{E_father}) + g (\text{E_mother}) + h (\text{E_spouse_father}) + i (\text{E_spouse_mother}) + j (\text{hincome}) + k (\text{hasset}) + l (\text{Scheduledcaste}) + m (\text{sibling_self}) + n (\text{sibling_spouse})$$

Our study hypothesize that married sons would be more involved in caring elderly parents, which requires the gender variable used in the model to have significantly positive coefficient value. On the other hand, if the hypothesis were wrong, married daughters would be providing more care of their parents and gender would be negative.

$$\text{Prob}(I_care_spouse = 1) = a + b (\text{Gender}) + c (\text{age}) + d (\text{Education}) + e (\text{E_spouse}) + f (\text{E_father}) + g (\text{E_mother}) + h (\text{E_spouse_father}) + i (\text{E_spouse_mother}) + j (\text{hincome}) + k (\text{hasset}) + l (\text{Scheduledcaste}) + m (\text{sibling_self}) + n (\text{sibling_spouse})$$

This estimation model is quite opposite to the first model. This equation assumes that married daughters would be taking more care of their spouse`s parents and the gender would be negative. However, if the assumption is wrong, married sons would be taking more care to their spouse`s parents and hence, male dummy would be positive.

$$\text{Prob}(\text{couple_care_own} = 1) = a + b (\text{Gender}) + c (\text{age}) + d (\text{Education}) + e (\text{E_spouse}) + f (\text{E_father}) + g (\text{E_mother}) + h (\text{E_spouse_father}) + i (\text{E_spouse_mother}) + j (\text{hincome}) + k (\text{hasset}) + l (\text{Scheduledcaste}) + m (\text{sibling_self}) + n (\text{sibling_spouse})$$

This model hypothesizes that both sons and their spouses would be taking care of sons` parents, so the value of the gender would be positive. On the other hand, if the hypothesis is not correct, the value of male dummy would be negative indicating daughters are more involved in parent care.

$$\text{Prob}(\text{Couple_care_spouse} = 1) = a + b (\text{Gender}) + c (\text{age}) + d (\text{Education}) + e (\text{E_spouse}) + f (\text{E_father}) + g (\text{E_mother}) + h (\text{E_spouse_father}) + i (\text{E_spouse_mother}) + j (\text{hincome}) + k (\text{hasset}) + l (\text{Scheduledcaste}) + m (\text{sibling_self}) + n (\text{sibling_spouse})$$

This model is opposite to the third model, which hypothesizes daughters` and their spouses` involvement in parent care, so the value of gender would be negative. If the hypothesis were wrong, sons and their spouses would be the primary caregiver for the parents and the value of gender would be positive.

$$\text{Prob}(\text{Professional_care_own} = 1) = a + b (\text{Gender}) + c (\text{age}) + d (\text{Education}) + e (\text{E_spouse}) + f (\text{E_father}) + g (\text{E_mother}) + h (\text{E_spouse_father}) + i (\text{E_spouse_mother}) + j (\text{hincome}) + k (\text{hasset}) + l (\text{Scheduledcaste}) + m (\text{sibling_self}) + n (\text{sibling_spouse})$$

This model hypothesize that parents covered by the pension programs are less dependent on their children and rely more on the professional care at old age. As dependence on the sons is the primary reasons for gender discrimination at birth in India, development of social security systems is expected to reduce gender imbalance. If the hypothesis is true, E_father and E_mother would be positive. However, negative or insignificant values of E_father and E_mother would indicate that development of social security systems would not reduce gender imbalance in India.

Empirical Results

Table V shows the results of the estimation models. The LR chi square value shows that our model fits statistically well to find gender differences in long-term care. The result of the fifth model where professional care is regressed by the independent variables is not reported in the table as the value of coefficients is insignificant. We attribute this result as to the insufficient number of parents using professional long term care.

The hypothesis requires observing the value and level of significance of gender variable for the first four models to find the role of gender in long term care for elderly parents in India. Gender variable in model 1 and model 3 is positive and highly significant while that in model 2 and model 4 is negative and highly significant. Gender coefficient in the first model, respondents care their own parent, is significantly positive

meaning that married sons provide more care than the daughters. The gender coefficient in the third model, respondents as a couple care respondents` parent, is also significantly positive indicating that sons and their spouses are more involved in the parent care than the daughters and their spouses. These two models justify the role of married sons and their spouses as the primary caregiver to elderly parents. The second and fourth models are designed to check the results found in the first and third models. The second and fourth models are opposite to the first and third models. The gender coefficient in the second and fourth model are significantly negative indicating that female respondents, individually and as a couple, are involved in spouse`s parent care.

Level of education of the respondents and their spouses is not found to be an important factor affecting parent care. Only in the fourth model, spouse education is found to be affecting parent care, though not so strong. The value of E_father and E_mother are not significantly positive in the fifth model, thus, do not support the hypothesis that educated parents opt for professional care and are less dependent on their sons. However, the number of observation for the fifth model is very low that certainly limits the predictability of the model. Indian parents rarely take professional care at the old age, and also India has one of the lowest pension coverage of the employees in the world (OECD, 2013). However, the number of parents using professional care and the unreported results of the model imply that improvement of social security system may not reduce parents` dependence on children for the long term care.

In model 1, 3, and 4, age is significantly negative indicating that aged respondents` are less involved in parental care. Descriptive statistics rationalizes the fact; average age of the respondents is 46 years, which makes respondents unable to serve as a primary caregiver to the parents. Household income, household assets and scheduled caste do not have much implication for the role of gender in elderly parent care. Number of siblings has limited implication for the parent care as we find it significant only in the second model.

[Insert Table V here]

Discussion

We examined the role of gender in long-term care of elderly parents in India. However, we addressed the issue of gender differences in long-term parent care from a different viewpoint. Rather than dividing the caregiving activities by male and female members of the family following traditional methodology where female members of the family are found to be the primary caregiver (Coward and Dyer, 1990; Dwyer and

Coward, 1991; Horowitz, 1985; Stone, Cafferata, and Sangl, 1987), we examined the provision of elderly parent care by the married sons and their families and married daughters. Besides descriptive analysis and uncontrolled observation, we have also controlled a number of socio economic factors to have controlled observation on the relationship between gender and long term parent care. We found that married sons and their spouses are the primary caregiver to the elderly parents, while married daughters can hardly help their elderly parents. The social structure of India can rationalize the results. Indian combined families are composed of parents, unmarried sons and daughters and married sons and their spouses, in most of the cases. As the daughters are to leave parent`s home as soon as they get married, their minimal role in elderly parent care is justified. Other family members like spouses, unmarried sons and daughters are also found to be significantly providing long-term care. The results cannot be seen as a contradiction to previous findings of females` role in family caregiving in the developed countries. Rather, this study provides evidence of caregiving role played by sons and daughters in the context of Indian society. Previous literature on the gender issues surrounding long-term parent care in the Asian contest supports our findings. A number of literature reports the responsibility of sons as the primary caregiver to elderly parents in India (Hammad and Rajoria, 2013; Babu, Rani, and Reddy, 2003; Dharmalingam, 1996). In a recent study, Kadoya and Yin (2014) provide evidence that sons appear to be the primary caregiver to their parents in China. They also find that with the present social-economic settings in China, parents` dependence on sons would not be reduced even by the development of social security. Larsen, Chung, and Das Gupta (1998) found that parent`s concern for long term care is significantly associated with the preference for sons in Korea. They further concluded that long term care is a manifestation of the kinship system which is also common in China and India.

Empirical models find that sons individually and jointly with spouses provide long-term care to the elderly parents controlling other socio economic factors like age, education, sibling network, caste systems, household income and assets. Married daughters, on the other hand, are found to play a very limited role in elderly parent care. This study also finds that age of the caregiver negatively associated with elderly parent care indicating that aged sons and their spouses become incapable to serve elderly parents. This study also finds that level of education, caste system, sibling networks, household income and household asset hardly affect long-term care to elderly parents in India. Though previous literature (Coward and Dwyer, 1990) reported that sibling network affect elderly parent care, we have only found a limited effect in our study.

This study contributes to the field of gender differences in the long term care

for the elderly parents in at least two ways. Primary contribution of this study is to address the gender issue from a different viewpoint. Rather than focusing on the traditional method of dividing the caregiving activities by sons and daughters, this study attempts to find the caregiving role of the married sons` and their spouses individually and jointly against married daughters, which to the best of our knowledge are absent in the existing literature. Second, this study contributes to the lack of a comprehensive study on the gender issues in the long-term parent care in India.

This study has some limitations as well, which should be considered while interpreting the results. In a highly populated and geographically big country like India, sample used to conduct this study may not be sufficient. The sample is drawn from the six major cities of India; as a result, the implication of the results may not be applicable to the whole country. The study considers several control variables in the empirical models but it is not impossible that we have not included some important variables or included some relatively less important variables, which could cause the models lose some strength. Finally, the study could have been more insightful if we could report empirical results in light of respondents` status of employment and proximity of married daughters` residence. Future research should focus on how the caregiving to elderly parents is affected by the employment status of the married sons and proximity of married daughters` residence.

Conclusion

This paper provides empirical evidence on the gender differences in the long-term care for the elderly parent in India. Previous literature on the gender issues surrounding elderly parent care in the developed countries reported that female family members, particularly spouses and daughters are the primary caregiver to the elderly parents. However, in the context of the Indian society, it is presumed that sons assume the role of primary caregiver to the elderly parents. However, empirical evidence on the role of sons and daughters are limited in the Indian context. Our study contributes in the lack of empirical evidence on the gender issues surrounding elderly parent care and provides new evidence on the role of married sons and their spouses in long-term elderly parent care. Married sons and their spouses are found to be more involved in the long-term parent care than the married daughters. Other family members such as spouses and married children are also found to provide long-term care to elderly parents. Elderly parents are found not to rely on the professional care or nursing home. Besides gender issues, findings of this study have implication for the son preference at birth in India as well. Parents may have a preference for sons as they provide long-term care at

the old age.

References

1. Agewell Foundation. (2013), Health care and long term care services for old people in India, *Regional Expert Meeting at UN-ESCAP*, Held in Shanghai, China.
2. Agewell Foundation. (2011), *Human rights and status of older women in India – A national study*, Study report of Agewell Foundation, India.
3. Babu, K. V., Rani, D. U. and Reddy, M. V. S. (2003), *Economic value of children and fertility, 1st edition*, Discovery Publishing House, New Delhi, India, 102-103.
4. Barusch, A. S., & Spaid, W. M. (1989). Gender differences in caregiving: Why do wives report greater burden. *The Gerontologist*, 29 (5), 667–676.
5. Chen, Y., Li, H. and Meng, L. (2012), Parental Sex Selection and Missing Girls in China, Institute of Social and Economic Research, Osaka University, Osaka.
6. Colombo, F., Llana-Nazal, A., Mercier, J. and Tjadens, F. (2011), *OECD Health Policy Studies Help Wanted? Providing and Paying for Long-Term Care: Providing and Paying for Long-Term Care* (Vol. 2011). OECD Publishing.
7. Coward, R. T. and Dwyer, J. W. (1990). The association of gender, sibling network composition, and patterns of parent care by adult children, *Research on Aging*, 12 (2), 158-181.
8. Datta, P., Poortinga, Y. H., and Marcoen, A. (2003). Parent Care by Indian and Belgian Caregivers in Their Roles of Daughter/Daughter-in-Law, *Journal of Cross-Cultural Psychology*, 34 (6), 736-749.
9. Desai, S., Dubey, A., Joshi, B. L., Sen, M., Shariff, A. and Vanneman, R. (2010), *Human Development in India: Challenges for a Society in Transition*, New Delhi: Oxford University Press.
10. Dasgupta, S., Seana, H., and Mukhopadhyay, R. S. (1999), Caste, Class, and Family Structure in West Bengal Villages, *Journal of Comparative Family Studies*, 30 (4), 561-577.
11. Dharmalingam G. (1996). The social context of family size preference and fertility behaviour in South Indian villages, *Genus*, 52 (1/2), 83-103.
12. Dwyer, J. W. and Coward, R. T. (1991). A Multivariate Comparison of the Involvement of Adult Sons Versus Daughters in the Care of Impaired Parents, *Journal of Gerontology: Social Sciences*, 46 (5), 259-269.
13. Gilligan, C. (1982). *In a different voice*. Cambridge, Harvard University Press.
14. Hammad, B. and Rajoria, S. (2013), Economics and Sociology of Son Preference in India. *European Academic Research*, 1 (7), 1595-1605.
15. Horowitz, A. (1985). Sons and daughters as caregivers to older parents: Differences in role performance and consequences, *The Gerontologist*, 25 (6), 612–617

16. Kadoya, Y. and Yin, T. (2014), Who will care for older people in China? Exploring the implications of gender imbalance at birth, *Working with older people*, 18 (2), 97-105.
17. Kadoya, Y. (2011). Managing the human service market: the case of long-term care in Japan, University of Sydney, available at: <http://prijipati.library.usyd.edu.au/handle/2123/7602> (accessed on Feb 8, 2015).
18. Kadoya, Y. and Yin, T. (2012), Widow discrimination and family care-giving in India, *Journal of Women and Aging*, 27 (1), 59-67.
19. Larsen, U., Chung, W. and Das Gupta, M. (1998), Fertility and Son Preference in Korea, *Population Studies*, 52 (3), 317–25.
20. Lee, G. R., Dwyer, J. W., and Coward, R. T. (1993). Gender Differences in Parent Care: Demographic Factors and Same-Gender Preferences, *Journal of Gerontology: Social Sciences*, 48 (1), S9-SI6.
21. Mandelbaum, D. G. (1948). The Family in India, *Southwestern Journal of Anthropology*, 4 (2), 123-139.
22. McAuley, W., & Arling, G. (1984). Use of in-home care by very old people, *Journal of Health and Social Behavior*, 25 (1), 54-64.
23. Miller, B., & Cafasso, L. (1992). Gender differences in caregiving: Fact or artefact? *The Gerontologist*, 32 (4), 498–507.
24. OECD. (2013), *Pensions at a Glance Asia/Pacific 2013*, OECD Publishing, Paris.
25. OECD (2005), *Long-Term Care for Older People*, OECD Publishing, Paris.
26. Pearlin, L. I., Mullan, J. T., Semple, S. J., & Skaff, M. M. (1990). Caregiving and the stress process: An overview of concepts and their measures. *The Gerontologist*, 30 (5), 583–594.
27. Pinqart, M., and Sorensen, S. (2006), Gender Differences in Caregiver Stressors, Social Resources, and Health: An Updated Meta-Analysis, *Journal of Gerontology: Psychological Sciences*, 61B (1), 33-45.
28. Ross, C. E. (1987). The division of labor at home. *Social Forces*, 47 (3), 816–833.
29. Sangl, J. (1983). The family support system of the elderly. In R. Vogel & H. Palmer (Eds.), *Long-term care: Perspectives from research and demonstration*. Rockville, Aspen.
30. Shanas, E. (1979). The family as a source of support in old age. *The Gerontologist*, 19 (2), 169-175.
31. Stone, R., Cafferata, G. L., & Sangl, J. (1987). *Caregivers of the frail elderly: A national profile*. *The Gerontologist*, 27(5), 616–626
32. Stoller, E. P. (1990). Males as helpers: The role of sons, relatives, and friends, *The*

- Gerontologist*, 30 (2), 228–235.
33. Sung, K. T. (1998). An Exploration of Actions Filial Piety, *Journal of Aging Studies*, 12 (4), 369-386.
 34. Wallace, S. P., Levy-Stroms, L., Kington, R. S. and Andersen, R. M. (1998). The Persistence of Race and Ethnicity in the Use of Long-Term Care, *Journal of Gerontology: Social Sciences*, 53B (2), S104-S112.
 35. Wang, G., Su, X. and Hatton-Yeo, A. (2012), The security for Chinese older people in urban-rural one child families, *Working with Older People*, 16 (2), 88-96.
 36. World Health Organization. (2014). Fact about aging, Aging and Life Course, <http://www.who.int/ageing/about/facts/en/> (accessed on 28th January, 2015).
 37. Yee, J. L., & Schulz, R. (2000). Gender differences in psychiatric morbidity among family caregivers: A review and analysis. *The Gerontologist*, 40 (2), 147–164.

Table I Major public long-term care programs in selected countries

	India	China	UK	Germany	France	USA	Japan	South Korea
Major public long-term care program	Under- development	Under- development	Social services/ social security benefits (means-tested)	Social long-term care insurance (universal)	APA (universal)	Medicaid (means-tested)	Long-term care insurance (universal)	Long-term care insurance (universal)

Sources: OECD (2005); Colombo et al. (2011); Agewell Foundation (2013)

Table II Descriptive Statistics

	Mean	SD	Max.	Min.	Obs.
Explained variables					
1. I_care_own	0.1187	0.3237	1	0	556
2. I_care_spouse	0.1025	0.3036	1	0	556
3. Couple_care_own	0.1691	0.3752	1	0	556
4. Couple_care_spouse	0.1853	0.3889	1	0	556
5. Professional_care_own	0.0144	0.1192	1	0	556
Explaining variables					
1. Male Dummy	0.4425	0.4971	1	0	556
2. Age	0.4566	12.9043	70	21	556
3. Education	9.2032	4.4882	18	0	556
4. E_spouse	9.0558	4.5412	18	0	556
5. E_father	6.2428	4.57.73	18	0	556
6. E_mother	4.4299	3.8076	16	0	556
7. E_spouse_father	6.2824	4.6427	18	0	556
8. E_spouse_mother	4.6169	3.9372	16	0	556
9. hincome	5739.277	22926.41	100000	24	556
10. hasset	14999.1	35638.95	100000	0	556
11. Scheduledcaste	0.1097	0.3106	1	0	556
12. sibling_self	3.8237	1.6454	9	0	556
13. sibling_spouse	2.6835	1.6020	9	0	556

Table III Primary caregiver for parents according to respondent gender

		Respondent = Male (son)			Respondent = Female (Daughter)			Total		
		Own Father	Own Mother	Sub-total	Own Father	Own Mother	Sub-total	Own Father	Own Mother	Sub-total
1	You (=Respondent)	55 (32.35%)	57 (32.57%)	112 (32.46%)	6 (2.64%)	7 (3.00%)	13 (2.83%)	61 (15.37%)	64 (15.69%)	125 (15.53%)
2	Your spouse	15 (8.82%)	18 (10.29%)	33 (9.57%)	7 (3.08%)	10 (4.29%)	17 (3.70%)	22 (5.54%)	28 (6.86%)	50 (6.21%)
3	Your brother/sister or your spouse's brother/sister	70 (41.18%)	72 (41.14%)	142 (41.16%)	156 (68.72%)	160 (68.67%)	316 (68.70%)	226 (56.93%)	232 (56.86%)	458 (56.89%)
4	The spouse of the parent requiring care	6 (3.53%)	2 (1.14%)	8 (2.32)	10 (4.41%)	13 (5.58%)	23 (5.00%)	16 (4.03%)	15 (3.68%)	31 (3.85%)
5	Other family member	21 (12.35%)	21 (12.00%)	42 (12.17%)	45 (19.82%)	42 (18.03%)	87 (18.91%)	66 (16.62%)	63 (15.44%)	129 (16.02%)
6	Nursing home/assisted living home	1 (0.59%)	3 (1.71%)	4 (1.16%)	2 (0.88%)		2 (0.43%)	3 (0.76%)	3 (0.74%)	6 (0.75%)
7	Home helper	1 (0.59%)	1 (0.57%)	2 (0.58%)	1 (0.44%)	1 (0.43%)	2 (0.43%)	2 (0.50%)	2 (0.49%)	4 (0.50%)
8	Other	1 (0.59%)	1 (0.57%)	2 (0.58%)				1 (0.25%)	1 (0.24%)	2 (0.25%)
Total		170 (100%)	175 (100%)	345 (100%)	227 (100%)	233 (100%)	460 (100%)	397 (100%)	408 (100)	805 (100%)

Table IV Variables and Description

Variable	Description
Explained variables	
1. I_care_own (dummy)	Who will be the primary caregiver for your own parents when they need long-term care? (1 = respondent, 0 = others)
2. I_care_spouse (dummy)	Who will be the primary caregiver for your spouses` parents when they need long-term care? (1 = respondent, 0 = others)
3. Couple_care_own (dummy)	Who will be the primary caregiver for your own parents when they need long-term care? (1 = respondent or respondent`s spouse, 0 = others)
4. Couple_care_spouse (dummy)	Who will be the primary caregiver for your spouse`s parents when they need long-term care? (1 = respondent or respondent`s spouse, 0 = others)
5. Professional_care_own (dummy)	Who will be the primary caregiver for your own parents when they need long-term care? (1 = Nursing home/Assisted living home/Home helper, 0 = others)
Explaining variables	
1. Male_Dummy	Respondents` gender 0 = Female, 1 = Male
2. Age	Age of the respondents
3. Education	Year of education of the respondents
4. E_spouse	Year of education of the respondents` spouse
5. E_father	Year of education of the respondents` father
6. E_mother	Year of education of the respondents` mother
7. E_spouse_father	Year of education of the father of respondents` spouse
8. E_spouse_mother	Year of education of the mother of respondents` spouse
9. hincome	Yearly household income of the respondents
10. hasset	Household assets of the respondents
11. Scheduledcaste	Respondents from the scheduled caste
12. sibling_self	Number of siblings of the respondents
13. sibling_spouse	Number of siblings of the respondents` spouses

Table V Estimation Results

	(1)	(2)	(3)	(4)
	I_care_own	I_care_spouse	Couple_care_own	Couple_care_spouse
Gender	1.421*** (7.25)	-1.472*** (-5.10)	1.286*** (7.90)	-1.137*** (-6.30)
Age	-0.0126* (-1.96)	-0.00922 (-1.31)	-0.0174*** (-3.00)	-0.0158*** (-2.69)
Education	-0.0102 (-0.47)	-0.000560 (-0.03)	-0.00193 (-0.10)	-0.00461 (-0.24)
E_spouse	-0.00846 (-0.38)	0.0121 (0.52)	-0.00984 (-0.49)	0.0488** (2.45)
E_father	-0.00268 (-0.07)	-0.0290 (-0.70)	0.00971 (0.29)	-0.0271 (-0.82)
E_mother	-0.0587 (-1.33)	0.0340 (0.78)	-0.0817** (-2.21)	0.0417 (1.17)
E_spouse_father	0.00723 (0.19)	0.0498 (1.27)	0.0214 (0.64)	0.0465 (1.48)
E_spouse_mother	0.0658* (1.73)	-0.0409 (-1.13)	0.0727** (2.24)	-0.0446 (-1.46)
scheduledcaste	-0.525* (-1.67)	0.399 (1.53)	-0.227 (-0.91)	0.294 (1.29)
Hincome	0.00000244 (0.56)	-0.00000955 (-0.21)	0.00000180 (0.46)	0.00000365 (1.05)
Hasset	0.00000168 (0.62)	-0.00000227 (-0.72)	0.00000129 (0.53)	0.00000541 (0.22)
sibling_self	0.00843 (0.17)	0.148*** (2.62)	0.00390 (0.08)	0.0640 (1.31)
sibling_spouse	-0.0441 (-0.80)	-0.00630 (-0.11)	-0.0378 (-0.76)	0.0298 (0.63)
_cons	-1.322*** (-3.08)	-1.187** (-2.44)	-0.917** (-2.40)	-0.752* (-1.90)
<i>N</i>	556	556	556	556
<i>Pseudo R2</i>	0.199	0.195	0.179	0.200
<i>LR Chi Square</i>	80.50***	71.64***	90.51***	106.61***

t statistics in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$