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The Role of Gender in Long-Term Care for Older Parents: Evidence from India[1]

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Abstract

This paper examines the role of gender in the long-term care of older parents in India, as who provides long-term care to elderly parents is still not conclusive. The provision of long-term care in developed countries may not be applicable to India because of the differences in socioeconomic status; as such, gender differences in the long-term care of elderly parents in India need to be studied in light of these observed differences. Using data from the 'Preference Parameters in India, 2011' conducted by Osaka University, this study found that married sons and their spouses serve as the primary caregivers to their parents, while daughters mostly provide care to their spouses` parents. After controlling basic socioeconomic factors such as the level of education of one's spouse, mother, and mother-in-law; age; and number of siblings, the results remained the same. Other family members also play a significant role in elderly parent care, and parents were found to rely least upon 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 this study have implications for the son preference present at birth in India.

Keywords: Gender differences, Indian studies, Long-term Care, Population aging, Professional care

JEL classification codes: I3, J1, Z1

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Introduction

This study examined gender differences in the long-term care of elderly parents in India. Older people in general often suffer from losses in mobility, feebleness, and other physical or mental problems, thus requiring long-term care in the form of nursing, community care, assisted living, or residential and hospital care. Studies regarding the long-term care of elderly parents have received greater global attention in recent decades, which is justified by the dramatic shift in the age structure of the population; the proportion of elderly people (i.e., those who are 65 years of age and over) in the total world population will increase from 7.7% in 2010 to 15.6% in 2050 (United Nations, 2012), and the ratio in the total population in developing countries is also expected to increase rapidly from 5.8% in 2010 to 14% in 2050. That is, it is expected that the number of people who will not be able to take care of themselves in developing countries will quadruple by 2050 (WHO, 2014). India, where the population is still growing, is no exception in that the elderly population ratio is expected to increase from 5.1% in 2010 to 12.7% in 2050 (United Nations, 2012). According to other estimates, with a population of over 1 billion the elderly population exceeded 100 million in 2011, and is expected to grow to over 170 million by 2026 (Agewell Foundation, 2011). Hence, problems related to the increasing share of elderly people are becoming very serious in India.

Considering India's traditional social structure where elderly people are treated with respect and honor, concerns about who will care for them is of crucial importance. In the Asian context where filial piety is very strong (Sung, 1998), professional care of parents when children are eligible to do so is seen as a dishonor. Furthermore, in traditional Indian society, keeping older parents at nursing homes or hiring professional

care for them is not widely accepted, and it is almost universal that parents feel more comfortable receiving care from family members in their old age. Furthermore, literature on elderly caregiving has revealed that family members, especially spouses and children, are the primary caregivers to their parents (McAuley and Arling, 1984; Sangl, 1983).

The religious, cultural, and social environment of India suggests that male family members assume the overall responsibility of family matters, including elderly parent care (Mandelbaum, 1948). The Indian social context also suggests that although unmarried daughters can provide care for elderly parents, married daughters have limited scope to do so as they leave their parents' home soon after marriage. There is, however, a lack of empirical evidence on who actually assumes the responsibility of elderly parent care in India.

The interpretation of gender roles in elderly parent care can be viewed in light of several theories. These include household labor (Ross, 1987), the stress and coping framework (Pearlin et al., 1990), gender-role expectations framework (Barusch and Spaid, 1989), and gender-role specialization framework (Gillian, 1982), which all rationalize females as the primary caregivers to elderly parents. Literature in developed countries also reports that wives appear to be the primary caregivers to their husbands, as the female life expectancy is higher than that of males (Shanas, 1979). Furthermore, previous studies in developed countries on the role of gender in long-term parent care have found that among children, adult daughters are more engaged in parent care for the elderly and frail than sons (e.g., Dwyer and Coward, 1991; Horowitz, 1985; Stone et al., 1987; Pinquart and Sorensen, 2006; Kadoya, 2011), and also emphasized the role of spouses in long-term elderly care. In short, studies from developed countries mostly

reported that female family members are the primary caregivers to the elderly. However, empirical evidence to support this is not stable (Yee and Schulz, 2000), as Pinquart and Sorensen (2006) conducted a meta-analysis of 229 studies on the gender issues surrounding elderly care and reported that gender differences in caregiving were very small; the observed differences in gender roles in elderly parent care could be caused by the social context and by what capacity males and females provide elderly care, and are also influenced by the family structure and relationship that caregivers have with their elderly parents (Datta et al., 2003). In addition, studies from developed countries on gender differences in the long-term care of elderly parents hardly made any distinction between married and unmarried daughters, which seems very important in the Indian context; as such, the role of married daughters needs to be evaluated alongside married sons and their spouses in order to gain better insight regarding gender issues in long-term parent care.

The socio-cultural context of Indian society perceives sons as shouldering the responsibility of caring for their parents (Hammad and Rajoria, 2013; Dharmalingam, 1996), as traditional Indian society is comprised of joint families where older family members live with respect and honor, and the families of married sons, unmarried children, and relatives usually take care of elderly parents. Indian society does not consider girls as permanent members of the family, but rather as members of their husband`s family once they are married (Mandelbaum, 1948). Because of this belief, Indian parents rely mostly on their sons and daughters-in-law for long-term care. Moreover, the prevalence of son preference in India has been further intensified because of the decreasing number of children in a family; if their first child is a girl, parents` desire for a boy becomes even stronger because of the fear that there will be no one to

take care of them in their old age. China and other South Asian countries also share a similar outlook with India towards sons and daughters (Chen et al., 2012; Wang et al., 2012); for example, in a recent study, Kadoya and Yin (2014) provided evidence that sons (and their wives) appear to be the primary caregivers to their parents in China. They also found that with the present socioeconomic settings in China, parents` dependence on sons for long-term care would not be reduced by developments in social security. Larsen et al. (1998) found that parents' concern for long-term care was significantly associated with the preference for sons in Korea, and further concluded that long-term care is a manifestation of the kinship system, which is also common in China and India.

Thus, in light of the observed inconsistencies in gender roles in the long-term care of elderly parents and a lack of comprehensive studies on the Indian context, this study aimed to provide empirical evidence on the role of married sons, their spouses, and married daughters with respect to long-term care of elderly parents. Specifically, this study tested the hypothesis that sons and their spouses are more responsible and involved in elderly parent care than married daughters are.

Literature Review

Many of the studies on gender differences in parental caregiving have found that females are more involved in caregiving activities than males. This phenomenon is evident for both activities of daily living (ADLs) and instrumental activities of daily living (IADLs). ADLs and IADLs are the classification of activities often used in the studies of healthcare to refer the ability of any person to perform regular activities and live independently in the society. ADLs include the functions needed to perform

regularly such as feeding, bathing, dressing, physical mobility, personal hygiene and so on. IADLs are not as fundamental as ADLs but needed to live independently in the society such as shopping, housekeeping, money management, safety measures, response to emergency situation, and so on. For example, Dwyer and Coward (1991) found that daughters were significantly more involved in parent care than sons in terms of both ADLs and IADLs, even after controlling for caregiver and care receiver characteristics. Females as primary caregivers to frail parents was also reported in a study by Horowitz (1985), who also found that sons provided care to their parents only in the absence of eligible female siblings, and would rely mostly on their spouses to provide care if they were married. The findings from a study by Stone et al. (1987) were also similar to those from previous literature, as they found that informal caregivers of disabled elders are predominantly female. Female caregivers not only provide care to their elderly parents, but also assume greater burdens and stress than male caregivers (Pinquart and Sorensen, 2006; Horowitz, 1985). In addition, these female caregivers are also often in need of maintaining a balance for other commitments involving child care, workplace, and other responsibilities. Coward and Dwyer (1990) studied informal caregivers based on the composition of sibling status, and found that daughters appeared to provide more care to their parents than sons, although daughters and sons were found to devote the same amount of time per day to parent care when they are only children. However, daughters of mixed gender networks provide significantly more care than sons do, and also face higher levels of stress and burdens.

A study by Lee et al. (1993) observed the gender differences in parental caregiving from a different viewpoint, as their study partially rationalized why women are more likely to provide caregiving services to elderly parents. They found that the

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gender of the parent requiring care partially determined the gender of the child providing care, as adult children were more likely to care for parents of the same gender, and parents were also more likely to receive care from children of the same gender. They also found that daughters are more prevalent in parent care because it is predominantly elderly mothers that require care. Males` role as caregivers was also studied by Stoller (1990), although informal caregiving is predominantly provided by women. Apart from husbands, sons help in caregiving activities, albeit occasionally, and they are less involved in daily household activities than daughters.

However, Miller and Cafasso (1992) used a meta-analysis technique to cumulate the results of 14 studies related to gender differences in caregiving and found no significant gender differences pertaining to care recipients and total caregiver involvement, although female caregivers were found to be slightly more involved in personal care and household tasks. Pinquart and Sorensen (2006) studied the stress and burdens assumed by caregivers of both genders, and found that women bear higher levels of burdens and depression and lower levels of subjective wellbeing and physical health, but did not find much gender difference in caregiving.

The use of professional old age care is supposedly related to cultural and social circumstances; for example, Wallace et al. (1998) found that racial differences exist in the use of long-term care, as older African Americans are less likely to use nursing home care. Moreover, they found that differences caused by culture, class, and/or discrimination may hinder equitable access to such services. Besides cultural issues, kinship, cost-effectiveness, stress of the caregiver, and capacity to provide advanced care are some important issues that determine the choice of informal versus formal care. Palm (2013) reported that although professional care is suitable for elderly people

requiring advanced care, cost-effectiveness is often an impeding factor. Informal caregiving, which is thought to be more cost-effective than formal care, can only be a viable alternative if the home caregivers have the capacity to do so. Palm (2013) also stated that healthcare technologies have enabled the shift of advanced care for the elderly from institutions to homes, which ultimately ensures more comfort for elderly care recipients. However, he also emphasized the emotional as well as economic stress faced by informal caregivers in this process; if the needs and stress of informal caregivers are overlooked, elderly care recipients may face the risk of mistreatment and abusive care.

[Insert Table I here]

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

Data

This study used data from the "Preference Parameters in India, 2011" study conducted by Osaka University in six major cities in India: Delhi, Mumbai, Bangalore, Chennai, Calcutta, and Hyderabad; the cities were selected based on population size and geography. Face-to-face interviews were conducted with 1280 respondents between the ages of 20 and 69, and out of 1037 valid responses, the present study used 556

responses after scrutinizing the responses based on marital status and having no missing answers. The study 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 the target population using the Statistical Yearbook. An area from each city was 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 the Kish grid method.

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

[Insert Table II here]

Simple observation

To find the primary evidence to support the proposition that married sons and

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their spouses provide more care to elderly parents than married daughters, this study analyzed the answers of interviewees in response to the question concerning who the primary caregiver of a parent is 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 responses regarding the primary caregiver by separating them based on gender. The reason for the unequal number of responses between fathers and mothers is that some respondents have only one living parent.

[Insert Table III here]

The responses regarding the primary caregiver of parents offer several implications for long-term care and gender discrimination in India. First, as perceived, Table III shows that 78.63% of Indian parents primarily rely on their children and children's spouses for long-term care in old age, constituting the first three options of the answer choices. This figure supports findings from other studies with respect to the aging population in India, as in a recent study on widow discrimination in India, Kadoya and Yin (2012) provided evidence that children and their spouses served as the primary caregivers for their mothers in over 80% of cases.

Second, Indian parents depend more on their sons than daughters for long-term care in their old age; in other words, sons care more for their parents than daughters.

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When option one of the answer choice was classified based on gender, strong evidence emerged that sons devote more care than daughters; while sons alone provided caregiving in 32.46% of cases, this figure was only 2.83% for daughters, and when including the support of spouses, these figures became 42.03% and 7.12%, respectively. This supports the conjectures made in previous studies that Indian parents rely more on sons and their spouses for long-term care.

Third, the parents of female respondents would find it difficult to receive long-term care from them, particularly when they are married and living in distant places. The figures regarding the primary caregiver need to be examined along with the third and fifth options of the answer choices (i.e., caregiving by other siblings and other family members) in order to gain a more precise outlook. In the case of female respondents, caregiving by other siblings is 68.7%, which increases to 87.6% when including other family members, indicating that parents of daughters need to depend either on their other children or other family members. In the case of sons as primary caregivers, other siblings also play a significant role (41.16%) in providing long-term care for their parents, although less substantial than in the case of daughters. The figures in Table II also reflect the outcomes of traditional Indian joint family structure and the number of children that parents have. Specifically, parents often have the option to get long-term care from other children and family members; however, the privilege of receiving long-term care from other family members would eventually be narrowed down due to the eroding joint family system. It would be interesting to observe the provisions for long-term care of parents with only one son or daughter living in a nucleus family.

Fourth, the results do not provide any concrete indications about the role of

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social security in reducing parents` dependence on sons. It was observed that parents of females rely on other family members instead of receiving professional care. In fact, choices six and seven, which could be better options for parents with only daughters and no other family members to take care of them, appear to be the least sought after options for Indian parents. Kadoya and Yin (2012) also provided evidence on the reluctance of Indian parents to rely on professional care in their old age, and found that almost all widowed mothers relied on their families rather than opting for professional care. Thus, the development of social security systems may not be very productive for Indian parents, as they would be hardly likely to utilize professional care in old age.

However, the implications inferred above may be biased, as the figures of Table III classify the responses based merely on gender. In reality, other attributes of respondents such as age, income, educational background, siblings' status, area of residence, religion, and caste may also affect the findings. As such, this research needs to address the issue of a causal relationship between long-term care and gender differences while controlling for these variables.

Empirical Estimation

The models

This study used probit regression models to examine the role of gender in the long-term care of elderly parents because these models allow estimation of binary outcome variables. The parent care variables used in the estimation models are binary in nature and assumed values of either 0 (not involved in parent care) or 1 (involved in parent care).

Description of the variables used in the estimation models

In the regression models, 5 outcome and 13 predictor variables were used. The dependent variables were I_care_own (1 = respondents care for their own parent), I_care_ spouse (1 = respondents care for parents of their spouse), Couple_care_own (1 = respondents or spouses care for respondents' parents), Couple_care_spouse (1 = respondents or spouses care for spouses' parents), and Professional_care_own (1 = parent care is by a nursing home, assisted living home, or home helper). The dependent variables were dummy variables that assumed the value of 1 when respondents were caregivers 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 their spouses individually, the third dependent variable addresses whether respondents care for their parents with their spouses as a couple, the fourth dependent variable addresses whether respondents and their spouses care for their spouse's parents as a couple, and finally, the fifth dependent variable addresses whether respondents' parents receive professional care. The variables are designed in this way to distinguish between caregiving done as an individual and as a couple.

[Insert Table IV here]

The 13 independent variables used in this study include "gender," which indicates the gender of respondents; it assumed a value of 0 for female respondents and 1 for male respondents. If married sons were the primary caregivers, then the gender coefficient will be positive. A number of variables were used to take into account the

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educational background of respondents and their spouses, fathers, and mothers, as education is assumed to make caregivers more responsible and capable. The level of education of respondents` and spouses` parents was used as a dummy variable for joining the pension programs by assuming that a higher level of education would enable parents to depend less on their children and rely more on professional care. Household income and assets were also dummy variables used to measure the capability to avail professional long-term care. Household income refers to the total annual income of the family, and household assets, to the balance of assets of the family. Sufficient income and assets enable elderly parents to access other means of long-term care and thus reduce the responsibilities of their children; this is particularly beneficial for elderly parents who do not have any children capable of providing long-term care. The scheduled caste variable was also a dummy variable used to denote socially and economically vulnerable people. This variable was used to control for a particular section of the population whose social structure is different from that of other castes and classes (Dasgupta et al., 1999). Sibling_self and Sibling_spouse indicate the number of siblings that respondents and their spouses have. Our study used these two variables to control for the effect of number of siblings, as previous literature has found that sibling network composition affects parent care (Coward and Dwyer, 1990).

Estimation models

Estimation models based on the 5 explained and 13 explaining variables are as follows:

(1) Prob(I_care_own = 1) = a + b (Gender) + c (age) + d (Education) + e

(E_spouse) + f (E_father) + g (E_mother) + h (E_spouse_father) + i

(E_spouse_mother) + j (hincome) + k (hasset) + l (Scheduledcaste) + m

(sibling_self) + n (sibling_spouse)

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

(2) Prob(I_care_spouse = 1) = a + b (Gender) + c (age) + d (Education) + e

(E_spouse) + f (E_father) + g (E_mother) + h (E_spouse_father) + i

(E_spouse_mother) + j (hincome) + k (hasset) + l (Scheduledcaste) + m

(sibling_self) + n (sibling_spouse)

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

(3) Prob(couple_care_own = 1) = a + b (Gender) + c (age) + d (Education) + e

(E_spouse) + f (E_father) + g (E_mother) + h (E_spouse_father) + i

(E_spouse_mother) + j (hincome) + k (hasset) + l (Scheduledcaste) + m

(sibling_self) + n (sibling_spouse)

This model hypothesizes that both sons and their spouses would be caring for sons` parents, and so the gender value would be positive. On the other hand, if this hypothesis is incorrect, the value of the male dummy would be negative, indicating that daughters are more involved in parent care.

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

This model is opposite to the third model, and hypothesizes that daughters and their spouses are primarily involved in parent care, and so the gender value would be negative. If the hypothesis is wrong, sons and their spouses would be the primary caregivers of their parents and the gender value would be positive.

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

This model hypothesizes that parents covered by pension programs are less dependent on their children and rely more on professional care in old age. As

dependence on sons is the primary reason for gender discrimination at birth in India, the development of social security systems is expected to reduce gender imbalances. If this 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 the development of social security systems would not reduce gender imbalances 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 for determining 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 to the insufficient number of parents relying on professional long-term care.

[Insert Table V here]

        The hypotheses for the first four models require observing the value and level of significance of the gender variable in order to determine the role of gender in the long-term care of elderly parents in India. The gender variables in models 1 and 3 are positive and highly significant, while those in models 2 and 4 are negative and highly significant. The gender coefficient in the first model (respondents care for their own parent) is significantly positive, meaning that married sons provide more care than daughters. The gender coefficient in the third model (respondents care for their parents with their spouses) is also significantly positive, indicating that sons and their spouses

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are more involved in parent care than daughters and their spouses. These two models justify the role of married sons and their spouses as the primary caregivers to elderly parents. The second and fourth models were designed to check the results found in the first and third models, and are opposite to them. The gender coefficients in the second and fourth models are significantly negative, indicating that female respondents, individually and as part of a couple, are involved in their spouse`s parent care.

The level of education of respondents and their spouses was not found to be an important factor affecting parent care. Only in the fourth model was spouse's education found to affect parent care, although not strongly. The values of E_father and E_mother were not significantly positive in the fifth model, and thus do not support the hypothesis that educated parents opt for professional care and are less dependent on their sons. However, the number of observations for the fifth model was very low, which certainly limits the predictability of the model. Indian parents rarely opt for professional care in old age, and the pension coverage rate of employees in India is among the lowest worldwide (OECD, 2013). However, the number of parents using professional care and the unreported results of the model imply that improvements to the social security system may not reduce parents` dependence on children for long-term care.

In models 1, 3, and 4, age was significantly negative, indicating that older respondents are less involved in parental care. Descriptive statistics rationalizes this fact; the average age of respondents was 46 years, which makes older respondents unable to serve as primary caregivers to their parents. Household income, household assets, and belonging to a scheduled caste do not have much implication for the role of gender in elderly parent care. In addition, number of siblings has limited implication for parent care, as we found it significant only in the second model.

Discussion

We examined the provision of elderly parent care by married sons and their families in addition to married daughters. Besides descriptive analysis and uncontrolled observation, we also controlled a number of socioeconomic factors in order to control observations on the relationship between gender and long-term parent care. We found that married sons and their spouses are the primary caregivers to elderly parents, while married daughters hardly help their elderly parents. The social structure of India can rationalize these results, as in most cases Indian combined families are comprised of parents, unmarried sons and daughters, and married sons and their spouses. As daughters leave their parents' home as soon as they are married, their minimal role in elderly parent care is justified. Other family members such as spouses and unmarried sons and daughters were also found to be significant in providing long-term care. The results cannot be seen as a contradiction to previous findings of females` role in family caregiving in developed countries; rather, this study provides evidence of the 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 context supports our findings, as a number of studies reported the responsibility of sons as primary caregivers to their elderly parents in India (Hammad and Rajoria, 2013; Babu et al., 2003; Dharmalingam, 1996). In a recent study, Kadoya and Yin (2014) provided evidence that sons also appear to be the primary caregivers to their parents in China. They also found that with the present socioeconomic setting in China, parents` dependence on sons would not be reduced even with the development of social security. Furthermore, Larsen et al. (1998) found that parents' 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.

Our empirical models found that sons, both individually and jointly with spouses, provide long-term care to their elderly parents, even when controlling for other socioeconomic factors such as age, education, sibling network, caste system, and household income and assets. On the other hand, married daughters were found to play a very limited role in elderly parent care. This study also found that the age of the caregiver was negatively associated with elderly parent care, indicating that older sons and their spouses become incapable to serve elderly parents. In addition, level of education, caste system, sibling network, and household income and assets were found to hardly affect the long-term care of elderly parents in India. Although previous literature (Coward and Dwyer, 1990) reported that sibling networks affect elderly parent care, we found only a limited effect in our study.

This study contributes to the field of gender differences in the long-term care of elderly parents in at least two ways. The primary contribution of this study is to address the gender issue from a different viewpoint, as rather than focusing on the traditional method of dividing caregiving activities by sons and daughters, this study attempted to determine the caregiving role of married sons and their spouses individually and jointly compared with married daughters, which to the best of our knowledge is absent in the existing literature. Second, this study contributes to the lack of a comprehensive study on the gender issues in 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 large country like

India, the sample used to conduct this study may not be sufficient. The sample was drawn from six major cities in India; as a result, the implications of the results may not be applicable to the whole country. This study considered 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 to lose some strength. Finally, the study could have been more insightful if we reported empirical results regarding how respondents` status of employment and the proximity of residences of married daughters to their elderly parents affected caregiving, which are two factors that future research should focus upon.

Conclusion

      This paper provides empirical evidence on gender differences in the long-term care of elderly parents in India. Previous literature on the gender issues surrounding elderly parent care in developed countries reported that female family members, particularly spouses and daughters, are the primary caregivers to elderly parents; however, in the context of Indian society it is presumed that sons assume the role of primary caregivers to elderly parents, although empirical evidence on the role of sons and daughters in the Indian context was limited prior to our study. Thus, our study contributes to the lack of empirical evidence on 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, as married sons and their spouses were found to be more involved than married daughters. In addition, other family members such as spouses and married children were also found to provide long-term care to elderly parents, who were found not to rely on professional care or nursing homes. Besides gender issues, findings

from this study also have implications for the son preference present at birth in India, as parents may have a preference for sons because they provide long-term care for them in their old age.

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

India	China	UK	Germany	France	USA	Japan	South Korea
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)

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 respondents' 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 spouse's 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 respondents
3. Education	Years of education of respondents
4. E_spouse	Years of education of respondents` spouses
5. E_father	Years of education of respondents` fathers
6. E_mother	Years of education of respondents` mothers
7. E_spouse_father	Years of education of respondents` fathers-in-law
8. E_spouse_mother	Years of education of respondents` mothers-in-law
9. hincome	Yearly household income of respondents (unit: thousand Rs)
10. hasset	Household assets of respondents
11. Scheduledcaste	Respondents from the scheduled caste
12. sibling_self	Number of siblings of respondents
13. sibling_spouse	Number of siblings of respondents` spouses

Table V Estimation Results

	(1) I__care_own	(2) I__care_spouse	(3) Couple_care_own	(4) Couple_care_spouse
Gender	1.421***	-1.472***	1.286***	-1.137***
	(7.25)	(-5.10)	(7.90)	(-6.30)
Age	-0.0126*	-0.00922	-0.0174***	-0.0158***
	(-1.96)	(-1.31)	(-3.00)	(-2.69)
Education	-0.0102	-0.000560	-0.00193	-0.00461
	(-0.47)	(-0.03)	(-0.10)	(-0.24)
E_spouse	-0.00846	0.0121	-0.00984	0.0488**
	(-0.38)	(0.52)	(-0.49)	(2.45)
E_father	-0.00268	-0.0290	0.00971	-0.0271
	(-0.07)	(-0.70)	(0.29)	(-0.82)
E_mother	-0.0587	0.0340	-0.0817**	0.0417
	(-1.33)	(0.78)	(-2.21)	(1.17)
E_spouse_father	0.00723	0.0498	0.0214	0.0465
	(0.19)	(1.27)	(0.64)	(1.48)
E_spouse_mother	0.0658*	-0.0409	0.0727**	-0.0446
	(1.73)	(-1.13)	(2.24)	(-1.46)
scheduledcaste	-0.525*	0.399	-0.227	0.294
	(-1.67)	(1.53)	(-0.91)	(1.29)
Hincome	0.00000244	-0.000000955	0.00000180	0.00000365
	(0.56)	(-0.21)	(0.46)	(1.05)
Hasset	0.00000168	-0.00000227	0.00000129	0.000000541
	(0.62)	(-0.72)	(0.53)	(0.22)
sibling_self	0.00843	0.148***	0.00390	0.0640
	(0.17)	(2.62)	(0.08)	(1.31)
sibling_spouse	-0.0441	-0.00630	-0.0378	0.0298
	(-0.80)	(-0.11)	(-0.76)	(0.63)
_cons	-1.322***	-1.187**	-0.917**	-0.752*
	(-3.08)	(-2.44)	(-2.40)	(-1.90)
N	556	556	556	556
Pseudo R2	0.199	0.195	0.179	0.200
LR Chi Square	80.50***	71.64***	90.51***	106.61***

t statistics in parentheses

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