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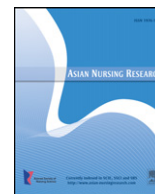
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## Research Article

# Informal Caregiving Patterns in Korea and European Countries: A Cross-National Comparison

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## SUMMARY

**Purpose:** This ecological study examined demographic and institutional differences in informal caregiving. We conducted a cross-national study about the characteristics of informal caregivers in 12 European countries and Korea.

**Methods:** Data were collected from individuals aged 50 years and older participating in the 2004/2005 Survey of Health, Ageing and Retirement in Europe and the 2006 Korean Longitudinal Study of Ageing. We examined the associations between informal caregiving and macrolevel characteristics (gross domestic product, total fertility rates, labor force participation rates, level of women's empowerment, long-term care resources).

**Results:** Korea and some southern European countries, notably Spain and Italy, had high percentages of women, homemakers, coresidents, and spouses in informal caregiving roles. In contrast, Northern European countries such as Denmark and Sweden had high proportions of employed informal caregivers. Lower female labor force participation was associated with higher proportions of women caregivers. A higher proportion of women caregivers in the population were also associated with a lower national gross domestic product per capita.

**Conclusion:** Our findings suggest that several contextual and institutional variables are associated with the proportion of women participating in caregiving.

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## Introduction

Informal caregivers such as family or friends providing unpaid care, represent a major source of care for disabled persons in almost all countries. Despite the substantial physical and psychological burdens associated with this role, it remains the most common form of long-term care even in developed countries. Most societies are characterized by rapidly aging populations, increased prevalence of nuclear family structures, and higher rates of women participating in the labor force, yielding diminishing resources available for caregiving. Few studies have examined the prevalence of informal care and the characteristics of caregivers in different countries. Due to large cross-national variations, a comparison of informal care patterns across countries is useful in order to

disentangle the impact of policies and institutions that may influence formal and informal care behavior. It has been established that most informal caregivers are female family members, especially spouses or adult children, including daughters-in-law (Sundström, 1994). Aging parents in East Asia live with their sons if possible, and caregiving for them is traditionally the responsibility of daughters-in-law (Campbell & Ikegami, 2000; Yoon & Ryu, 2005).

Major determinants of state reliance on female informal care include; (a) traditional culture (e.g., Confucian system of elder care in East Asia), including systems of patriarchy and strict division of gender roles where women stay home and are assigned to domestic roles including the caregiver role, and (b) women's empowerment and economic autonomy, which predicts that as more women enter the labor force, the less likely they are to be involved in informal caregiving. Consequently, per capita GDP could be expected to be lower in countries where there is a higher proportion of women involved in informal care, because they are at home looking after dependent elders instead of being in the paid workforce. (Indeed, this situation gives rise to the feminist adage that when a man

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marries his parent's caregiver, the national GDP goes down). Because of family obligations, competition with males, and sexual discrimination, women have difficulty finding employment in the industrial sector of the economy. In advanced industrial nations, there is a positive relationship between economic development and female labor force participation. Continued economic growth and expansion of the tertiary sector of industrialized economies, where female labeled jobs are concentrated, increases the demand for female workers (Pampel & Tanaka, 1986). Economic growth is likely to be lower in countries with a higher proportion of women involved in informal care because they are at home looking after dependent elders instead of being in the paid workforce.

We sought to examine macrolevel societal characteristics associated with higher national reliance on informal caregiving. At the micro level, informal caregivers may adopt their caregiving role for many different reasons, including tradition, lack of family resources to pay for nursing home care, and dearth of formal long-term care resources (Wiener & Cuellar, 1999). We note that the proportion of elderly in the country does not necessarily correlate with the size of the informal care sector, but different societies have different ways of coping with that need. A low fertility rate—as occurs in Korea—is often pointed out as a factor that worsens the aged dependency ratio (e.g., the ratio of people over age 65 vs. those in the working age group) over the long term. However, in the short term, we hypothesize that fertility rate is one of the index for national policy for family and women. Therefore, countries with low fertility are mirrored in many fertility-related human behaviors such as women's labor force participation, women's burden of gender role and other dimensions. This appears to be the pattern in countries such as Korea and Japan, where fertility rates are below population replacement levels, notwithstanding the fact that women's labor force participation is not as high as in most other highly industrialized countries. If the norm of informal caregiving burden by women results in lower fertility, it could lead to a vicious cycle further worsening the dependency ratio in the future, implying even greater caregiving burden.

By its very nature, culture and traditions are slow to change, so that societies must turn to state sector policies to address the challenges of population aging and the rising demand for care of dependent elders. Public policies have attempted to maintain networks of informal care, but few countries offer programs that provide adequate support for informal caregivers. In their report for the World Health Organisation, Brodsky, Habib, and Hirschfeld (2003) categorized extant support programs into five types; (a) emotional counselling/training programs, (b) respite care to provide temporary relief (Australia, Germany, the United Kingdom, the United States, and Germany), (c) paid or unpaid leave for employees to take care of a family member (Sweden, the US, and the UK), (d) tax benefits for the caregivers and direct or indirect payments for caregiving (Austria, France, Germany, the US, and the Netherlands), and (e) pension credits (Germany and the UK). Debates about the form and content of support programs for informal caregivers have focused on balancing familial with social responsibility, horizontal equity, and the possible discouragement of women from participating in the labor force.

In this study, we sought to provide a cross-national comparative perspective on informal caregiving in 13 countries, using both microlevel data and ecological data. Our study has four objectives. First, we provide a descriptive, cross-national comparative profile of the prevalence and characteristics of informal caregivers in 12 European countries (Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Greece, Switzerland, Belgium, and Israel), and Korea, based on microlevel data from the Survey of Health, Ageing and Retirement in Europe (SHARE) and the Korean Longitudinal Study of Ageing (KLoSA).

Our second objective was to conduct an individual-level analysis of the demographic characteristics of informal caregivers in each country. In every country women are more likely to be involved in informal caregiving than males. However, we hypothesized that this gender difference in the allocation of the informal caregiver role will be strongest in traditional Confucian societies such as Korea; followed by Mediterranean societies with strong familial orientation (Greece, Spain, and Italy); followed by Western European countries with a Christian Democratic tradition (Germany and Austria); and weakest in Nordic countries with a strong welfare state, and strong state provision of formal caregiving support (e.g., Denmark, Sweden).

Our third objective was to turn to ecological level analyses of macrolevel societal characteristics in relation to the size of the female informal caregiving sector. We hypothesized that (a) total fertility rate will be inversely correlated with informal care, (b) women's labor force participation is inversely correlated with informal care, (c) as a result of (b), per capita GDP is inversely correlated with informal care, and (d) there are no relationship between the percentage of aged individuals, the percentage of elderly in long term care facilities, and the size of informal care sector.

Our fourth and final objective was to develop a typology of societies based on a  $2 \times 2$  matrix, with the axes corresponding to the prevalence of female-provided informal care and the total fertility rate (Figure 1). A high percentage of female informal caregivers in society implies a high level of demand for caregiving (e.g., due to population aging), and/or a low level of state support for the formal caregiving sector. We hypothesize that there is an inverse correlation between women's involvement in informal care and women's reproductive decisions (i.e., the total fertility rate, on the vertical axis). In other words, the greater the demand for informal caregiving by women, the lower their fertility rate. Using data from our 13 countries, we sought to test whether the countries in our sample fit the pattern we describe.

## Methods

### Data

The data used in this study were collected from KLoSA (<http://www.klosa.re.kr>) and SHARE (<http://www.share-project.org>). These data were derived from each study website. In this study, we sought to provide a cross-national comparative perspective on informal caregiving in 13 countries, using both microlevel data and ecological data. Nationwide data about detailed informal caregiving are not yet available from other countries. SHARE baseline data also provides an excellent opportunity to explore our hypotheses because it includes caregiving questionnaires in 12 different European countries, which would represent sufficiently wide range of Western social contexts.

KLoSA has been launched with its baseline survey in 2006. One of its purposes was to gather data to be used for international comparative research. The 12 European Union nations have been conducting panel surveys of those aged over 50 since 2004 named SHARE. KLoSA data was initially designed benchmarking SHARE. The baseline surveys of KLoSA and SHARE (for European countries) are the best dataset to investigate our study purpose, because they are all nationwide representative, and their questionnaires on informal caregiving are quite similar in the baseline surveys.

KLoSA focused on Koreans aged 45 years and older living in households selected according to multistage stratified probability sampling (based on geographical area) and was designed to produce a sample that was representative of the nation. With the list of households in the main sampling units and relevant tools,

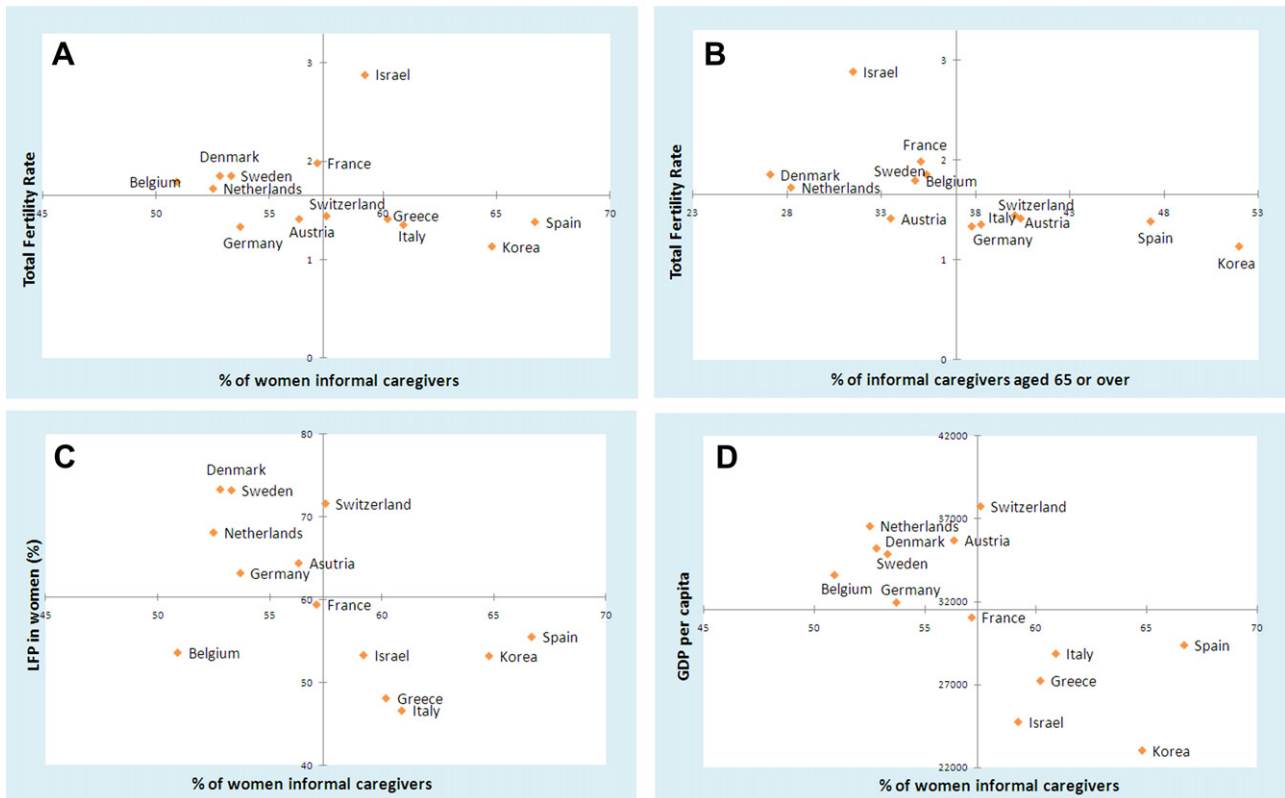


Figure 1. (A) Percentages of women informal caregivers and total fertility rates. (B) Percentages of informal caregivers who are aged 65 years or older and total fertility rates. (C) Percentages of women informal caregivers and the rates of women's participation in the labor force (LFP) in 2006. (D) Percentages of women informal caregivers and the gross domestic product (GDP) per capita in 2006 in 12 European countries and Korea.

interviewers visit the households and identify compatibility of each. Interviewers conduct the interviews all eligible family members (aged 45 and above) in the sampled household. A total of 10,254 individuals completed interviews conducted by trained interviewers. The household response rate was 70.7%, and the individual response rate within households was 75.4%. Detailed information about the survey has been reported elsewhere (Jang, Cho, et al., 2009; Jang, Kawachi, et al., 2009).

SHARE is a multidisciplinary and cross-national panel database of micro data on health, socioeconomic status and social and family networks of more than 45,000 individuals aged 50 or over. As such, it responds to a Communication by the European Commission calling to examine the possibility of establishing, in cooperation with member states, a European Longitudinal Aging Survey. By now SHARE has become a major pillar of the European Research Area and in 2008 was selected as one of the projects to be implemented in the European Strategy Forum on Research Infrastructures. The original sample in the SHARE study included households with at least one person aged 50 years or older. The weighted average response rate among the 12 countries participating in the SHARE in 2004/2005 was 61.8%, and the within-household response rate was 86.0%. The unweighted total of eligible individuals was 22,777 persons in 15,537 households (Börsch-Supan & Jürges, 2005). At times, other household members acted as proxies and reported the pertinent information about eligible but unavailable household members. We limited our analysis to the population of informal caregivers aged 50 years or older ( $N = 8,528$ ) when assessing the distribution of caregivers. We used data from the total population aged 50 years or older in 13 countries (total of 35,799 persons) when assessing the factors for acting as familial informal caregivers.

## Measurements and analysis

### Informal caregivers

The KLoSA asked, "Are there any members of your household who are unable to carry out activities of daily living, such as eating, washing, dressing, etc.?" "Have you provided any help to household members with activities of daily living during the past 12 months? If so, who was helped?" and "Did you help anyone not living with you with the instrumental activities of daily living (IADL), such as household chores, transportation, grocery shopping, financial management, etc.? If so, who was helped?" If respondents answered affirmatively to these questions, interviewers then asked them about their relationships with care recipients. The SHARE questions inquired about care provided to persons outside and inside households: "Is there someone living in this household whom you have helped regularly during the last 12 months with personal care, such as washing, getting out of bed, or dressing?", "Did you give help to others outside the household?", "Which family member from outside the household, friends or neighbours, have you helped in the last 12 months?" If respondents answered affirmatively to these questions, interviewers then asked them about each person cared for. For both SHARE and KLoSA, individuals who helped family members, friends, or neighbours with ADL or IADL during last 12 months were classified as caregivers.

With regard to the characteristics of caregivers within each country dataset, we analysed the descriptive characteristics (frequencies and percentages) of caregivers including sex, age, marital status, coresidence with care recipient, employment status, and relationship with care recipient. We stratified the caregiver samples into two age groups: 50–64 years, and 65 years and older. Respondents' marital status was categorized as "married and living

with a partner” versus “other”. Living arrangement was dichotomized into living with the care recipient (1) or other (0). The employment status of respondents was divided into three groups: employed (1), unemployed (2), and housewife or out of the labor market (3). With regard to relationship to care recipients, respondents helping their parents were categorized as “children”, those helping their spouses were categorized as “spouses”, and those helping others were categorized as “others”. Using logit model, we checked the main characteristics of informal caregivers in each country. Outcome variable was informal caregiver or not (1 = caregiver, 0 = noncaregiver), and age, gender, marital status, educational level, employment status, and self-rated health were included in the model as the independents.

#### National data

In our ecological analyses, we examined the relationships by Pearson correlation between the percentage of female informal caregivers and older caregivers in each society and other aggregated characteristics, including proportion of elderly people in long-term care facilities, women’s participation rate in the labor force, proportions of female legislative or managerial level workers, total fertility rate in 2006, life expectancy for men and women in 2006, proportion of elderly people in the total population in 2006, and GDP per capita in 2006. All data were collected from the Organisation for Economic Co-operation and Development statistics. To develop a typology of societies based on a 2 × 2 matrix, axes were set to correspond to the prevalence of female-provided informal care and the total fertility rate and other national ecological data.

#### Results

Table 1 presents the descriptive characteristics of informal caregivers from the microdata in 12 European countries and Korea. The proportion of women caregivers was largest in Spain (66.7%), followed by Korea (64.8%), Italy (60.9%), and Greece (60.2%). About 36.9% of Danish women, 35.1% of Belgium women, and 35.0% of Swedish women responded that they were informal caregivers, among the highest proportions in the countries in our sample. In Korea, only 7.1% of men and 8.0% of women responded that they were informal familial caregivers. More than half of the informal caregivers in Korea were older adults aged 65 years old or older, whereas middle-aged caregivers were more common in European countries. Informal caregivers in most countries were not in the paid workforce; however, more than 50% of Swedish (53.5%) and Danish (52.1%) caregivers were employed. Most informal caregivers across countries in our sample were married. Korean informal caregivers were much more likely to live with care recipients (88.1%) than were those in other countries. As expected, Korean caregivers were also more likely to be married to care recipients (47.4%), whereas less than 25% of the caregivers in European countries were spouses.

Figure 1A illustrates our 2 × 2 matrix: The vertical axis represents the percentage of women engaged in informal care, and the horizontal axis represents the total fertility rate. We created corresponding figures for the percentage of caregivers who are elderly (Figure 1B), labor force participation of women (Figure 1C), and per capita GDP (Figure 1D). Countries with low total fertility rates, such as Spain, Korea, Italy, and Greece, were characterized by high proportions of women and elderly caregivers. However, France, Sweden, Denmark, and Netherlands were characterized by both relatively high total fertility rates and low proportions of female caregivers (Figure 1A). This correlation matrix appears to be similar to the association between the proportion of older informal caregivers and the total fertility rate (Figure 1B). Germany exhibited low rates of female informal caregivers as well as a low total fertility rate.

Spain, Korea, and Italy (in descending order of high proportions of female caregivers) were also characterized by lower rates of female participation in the labor force (Figure 1C) and accompanying lower GDP per capita (Figure 1D). The trends of correlation were found between proportion of female informal caregivers and women’s labor force participation rate, and per capital GDP. This correlation seems to come from two groups which are in the second quadrant (Korea, Spain, and Italy) and in the fourth quadrant (Denmark, Sweden, and the Netherlands). We used macrocomparative analysis with correlation, and scatter-plot trend to focus on explaining enduring cross-national differences. However, general linear reality assumes that social world consists of fixed entities with variables attributes (Abbott, 1988). Thus it is hard to show that every nation of a phenomenon follows essentially the same rule. But the value of this work might be to contrast specific instances (case of a nation) of a given phenomenon as a means of grasping the peculiarities of case.

Correlation coefficients from ecological analyses of aggregated country characteristics revealed that total fertility rates were negatively correlated with the proportions of women caregivers (correlation coefficient:  $-.59$ ). Countries with lower total fertility rates were more likely to have elderly women caregivers. As hypothesized, lower rates of female participation in the labor force were associated with higher proportions of female caregivers. GDP per capita was negatively associated with the proportion of women caregivers; that is, countries with low GDPs were characterized by more women caregivers (Table 2).

Table 3 presents the logistic coefficients of being in the caregiver role, based on logistic regression models. For each country in our sample, we examined the associations between caregiver role and the following individual characteristics: Sex, age, marital status, educational level, employment status, and self-rated health. With the exception of Spain, Italy, Greece, Switzerland, and Korea, men aged 65 years old or older were less likely to be informal caregivers than were middle-aged men. Middle-aged women were more likely to be caregivers than men in the Netherlands, Italy, Denmark, Greece, and Korea. Unlike their European counterparts, Korean elderly women were more likely to be informal caregivers ( $\beta = 1.09$ ) than were Korean middle-aged men. Those who were married and living with their spouse were more likely to be informal caregivers than were those with any other marital status, and this association was found in all countries. Employment status was not associated with being in a caregiver role except Netherlands. Respondents rating their own health as poor are less likely to help someone else because of their own health problems; this hypothesis was supported in Germany, Sweden, the Netherlands, and Denmark, but not in other countries. Italy and Korea showed positive coefficients, indicating that the role of caregiver might have been adopted out of necessity and irrespective of self-rated health status.

#### Discussion

This descriptive study examined the distributions of informal caregivers in Korea and 12 European countries using baseline microdata from the KLoSA and SHARE. As expected, most caregivers in our sample countries were married women. Most of the caregivers in all European countries, with the exception of Spain, were 50–64 years of age and lived apart from care recipients. Korean caregivers were more likely than caregivers in other countries to be older and to be married to care recipients. About 88% of the Korean informal caregivers were living with care recipients compared with less than a quarter in most European countries.

Korean culture has traditionally emphasized caregiving by daughters-in-law (particularly the wife of the oldest son), but this is changing rapidly (Yoon & Ryu, 2005). Our results indicate that the



**Table 1** Characteristics<sup>a</sup> of Familial Informal Caregivers in 12 European Countries and Korea According to Data from SHARE and KLoSA Baseline Surveys

Characteristics	Austria	Germany	Sweden	Netherlands	Spain	Italy	France	Denmark	Greece	Switzerland	Belgium	Israel	Korea
<b>No. of family informal caregivers (unweighted)</b>	403	810	1033	972	457	580	729	610	540	247	1349	571	227
<b>Sex (%)</b>													
Men (% of survey respondents)	43.7 (22.7)	46.3 (27.6)	46.7 (34.9)	47.5 (34.6)	33.3 (15.6)	39.1 (20.3)	41.9 (24.0)	47.2 (38.5)	39.8 (17.4)	42.5 (24.0)	49.1 (38.8)	40.8 (20.8)	35.2 (7.1)
Women (% of survey respondents)	56.3 (21.2)	53.7 (27.7)	53.3 (35.0)	52.5 (33.9)	66.7 (22.4)	60.9 (25.5)	57.1 (25.4)	52.8 (36.9)	60.2 (22.2)	57.5 (28.7)	50.9 (35.1)	59.2 (25.5)	64.8 (8.0)
<b>Age (%)</b>													
50–64 yr	59.6	62.2	64.6	71.8	53.7	61.7	64.9	72.9	66.5	59.9	65.2	68.5	48.0
65+ yr	40.4	37.8	35.4	28.2	47.3	38.3	35.1	27.1	33.5	40.1	34.8	31.5	52.0
<b>Job status (%)</b>													
Employed	22.3	38.6	53.5	40.4	20.6	23.8	37.3	52.1	33.5	44.1	31.8	46.8	27.8
Unemployed	2.0	6.5	2.8	2.1	4.8	1.6	4.8	6.3	1.7	1.2	6.1	4.4	41.9
Homemakers and others	75.7	54.9	43.7	57.5	74.6	75.6	57.9	41.6	64.8	54.7	62.1	48.8	30.4
<b>Marital status (%)</b>													
Unmarried	29.5	17.3	25.5	14.3	23.2	16.4	25.4	29.2	23.7	29.2	20.7	16.6	14.1
Married	70.5	82.7	74.5	85.7	76.8	83.6	74.6	70.8	76.3	70.8	79.3	83.4	85.9
<b>Living with recipient (%)</b>													
No	76.2	81.6	90.9	87.8	49.2	65.9	81.6	93.3	80.0	82.6	84.7	74.3	11.0
Yes	20.8	18.4	9.1	12.2	50.8	34.1	18.4	6.7	20.0	17.4	15.3	25.7	88.1
<b>Relationship with recipients (%)</b>													
Spouse	17.6	13.3	8.2	11.4	23.9	18.9	12.8	7.6	16.1	14.5	12.8	21.4	47.4
Children <sup>b</sup>	33.9	46.7	46.6	46.7	46.8	43.7	48.4	42.4	44.5	44.4	40.1	42.6	36.3
Other relatives	48.5	40.0	45.2	41.9	29.3	37.4	38.8	50.0	39.4	41.1	47.1	36.0	16.3

Notes. SHARE = Survey of Health, Ageing and Retirement in Europe; KLoSA = Korean Longitudinal Study of Ageing.

<sup>a</sup> Weighted percentage of each characteristic among total informal caregivers; <sup>b</sup> Including sons, daughters, sons-in-law, daughters-in-law.

**Table 2** Correlation Coefficients Between Countries' Characteristics and Proportion of Female and Aged Informal Caregivers in 12 European Countries and Korea

Countries' characteristics	Proportion of older caregivers ( $\geq 65$ yr) among total caregivers	Proportion of women caregivers among total caregivers
	Coefficients ( <i>p</i> )	Coefficients ( <i>p</i> )
Total fertility rate (2006)	-.62 (.039)	-.59 (.052)
GDP per capita (2006)	-.58 (.057)	-.68 (.018)
Life expectancy in men	-.24 (.469)	-.11 (.727)
Life expectancy in women	.41 (.203)	.48 (.131)
Proportion of the elderly in LTC facilities	-.41 (.263)	-.57 (.100)
Empowerment of women (% of female legislative, managerial workers)	-.28 (.398)	-.41 (.206)
Labor force participation by women	-.40 (.212)	-.75 (.008)
Older population among total population (%)	-.47 (.139)	-.13 (.688)
Proportion of women caregivers among total caregivers	.75 (.007)	1

Note. LTC = long term care.

main source of care has recently become the older adult in the household, primarily the spouse. Given that married women are now much more likely to work outside the home than they once were, a severe shortage of long-term social support for disabled members of the household often results in the caregiving role being transferred to older women in the household (Chae & Jeon, 2004; Jeon, Jang, Rhee, Kawachi, & Cho, 2007). Denmark and Sweden are characterized by higher proportions of younger adult and employed informal caregivers. It is likely that caregivers from younger generations are more involved in paid work and more likely to be responsible for young children and a household separate from that of the patient (Grande, Farquhar, Barclay, & Todd, 2006; Harding, Higginson, & Donaldson, 2003; Higginson & Priest, 1996; Payne, Smith, & Dean, 1999).

Some researchers have stressed the need to pay attention to gender differences in caregiving (Dahlberg, Demack, & Bamba, 2007). In our study, three countries with relatively high percentages of women caregivers (Spain, Korea, and Italy) were characterized by low rates of female participation in the labor force and low GDP per capita. SHARE data revealed that intensive caregiving negatively affected labor force participation among middle-aged women in both northern and southern European countries. The data revealed high rates of coresident care in Korea and Spain, likely reflecting more intensive care in these countries because coresidence may reflect a greater need among care recipients (Carmichael & Charles, 2003; Ettner, 1995) and, consequently, a greater time commitment by caregivers. Given that the adoption of a caregiving role was associated with nonparticipation in the labor market in these countries, the GDP per capita may also be affected by this depletion of the labor force. Crespo (2006) argued that a sustainable aging society needs caregivers to be engaged in both caregiving and in the paid workforce, even if the correlation between the proportion of caregivers who are female and female workforce participation rates is not causal but reflects other factors about the society, including salary levels for women.

We found an inverse correlation between women's involvement in informal care and women's reproductive decisions (e.g., the total fertility rate on the vertical axis). In other words, the greater demand for informal caregiving by older women is associated with a lower fertility rate among young women. Our 2 × 2 matrix results in a typology of four different types of society, characterized by

varying combinations of informal care and fertility rates; (a) societies with a high female informal care burden and low fertility (e.g., Korea), (b) societies with high levels of state support for caregiving (e.g., low informal care sector) and high fertility (Nordic countries), and two off-diagonal types; (c) states with a high informal care burden and high fertility, and (d) states with high levels of state support for caregiving but low fertility. Type (c) states would be associated with a division of roles, that is, the women who are involved in informal care are not the same ones as those having children. Type (d) societies may be those that are in transition from type (a) to type (b), that is, where a welfare state has made efforts to provide support for caregivers, but where fertility rates remain stuck below replacement levels. Some countries, especially those following family-centered conservative ideologies, consider informal care to be a family or moral issue rather than a social and policy issue (Chee, 2000; Sung, 1990). The Asian tradition of filial duty based on Confucianism (Sung) and the European tradition of Christian democracies may produce a double burden of young women caring for children for and working people engaging in elder care. Similar characteristics were associated with these two forms of caregiving, despite age differences between informal caregivers (older age) and women in childbearing (younger age), such as low fertility rates among the younger generation and a high percentage of informal caregiving role among the older generation. It is likely a phenotype of gender role burden for each age cohort among Korean women.

In contrast, Denmark, Netherlands, Sweden, and Germany had relatively more integrated long-term care systems than did other countries. Despite the differences among these four countries, they appear to share a similar long-term care policy orientation (Brodsky et al., 2003). The main common features of long-term care in these countries included administratively integrated and comprehensive services along with effective care networks and case management. We found the smallest gender differences in the allocation of informal caregiver roles in Nordic countries (with a strong welfare state and strong state provision of formal long-term care support). Germany was an interesting case, providing high levels state support for caregivers and family-friendly policies (e.g., women may take up to 3 years off work after having a baby and be guaranteed their job when they return to work (Brodsky et al.). However, this is a recent phenomenon and represents an explicit attempt by the German government to motivate couples to have more children. Fertility rates have not changed to date but might in the future and Germany may eventually end up in the upper-left quadrant. Germany may set an example for traditional Confucian societies such as Korea and other societies working to balance an aging population with the need to maintain replacement fertility levels.

Another notable finding of our ecologic analysis was the lack of relationship between the proportion of the elderly population admitted to long-term care facilities and gender differences in the allocation of the informal caregiver role. Focusing on institution-based long-term care may not solve women's informal care burdens or encourage women's labor-force participation. Additionally, we found no relationship between the percentage of aged individuals and the proportion of women engaging in informal care.

Providing care for disabled elderly adults has been described as a stressful experience that may erode the physical and psychological health of the caregiver. Most research on the health of caregivers has focused on depressive symptoms and the burdens of caregiving. These studies have usually included two kinds of predictor variables; (a) factors that are unique to the caregiving context (patient characteristics, duration and amount of caregiving), and (b) factors associated with general risks for impaired psychological health, such as financial stress and being

**Table 3** Logistic Regression Coefficients (β) for Being Familial Informal Caregivers in 12 European Countries and Korea According to Data from SHARE and KLoSA Baseline Surveys

Characteristics	Austria	German	Sweden	Netherlands	Spain	Italy	France	Denmark	Greece	Switzerland	Belgium	Israel	Korea
<b>Sex &amp; age (yr)</b>													
Men aged 50–64	Reference												
Men aged 65+	-.64*	-.58**	-.70**	-.52*	-.18	-.48*	-.47*	-.86**	-.45	-.60	-.45**	-.21	.53*
Women aged 50–64	.14	.11	.04	.19*	.32	.39*	.40	.31	.47*	.02	.05	.41*	.77**
Women aged 65+	-.30	-.53**	-.69**	-.69*	-.08	-.08	-.43	-.79**	-.15	.01	-.67**	.01	1.09**
<b>Marital status</b>													
Single <sup>a</sup>	Reference												
Married & living together	.68**	.42**	.34**	.69**	.002	.63**	.56**	.51**	.65**	.30	.61**	.60**	.92**
<b>Education<sup>b</sup></b>													
Unemployed or others	.18**	.02	.02	.09*	.09	.22**	.11**	.12*	.13**	.15	.07*	.19**	.15*
<b>Job status</b>													
Unemployed or others	Reference												
Employed	-.33	-.08	-.02	.32*	-.12	.13	.01	.04	-.02	-.04	.14	.14	-.11
<b>Self-rated health<sup>c</sup></b>													
.1 very good ~ 5: very poor	.06	-.36**	-.23**	-.17*	-.07	.20*	-.10	-.17*	-.009	-.17	-.04	-.21**	.10
<b>n</b>	1,847	2,929	2,957	2,837	2,336	2,502	2,945	1,620	2,705	.33	3,663	2,445	6,080

Note. SHARE = Survey of Health, Ageing and Retirement in Europe; KLoSA = Korean Longitudinal Study of Ageing.

<sup>a</sup> Including divorced/widowed/separated/never married; <sup>b</sup> Educational level categorized as eight (0–7) for 12 European countries (SHARE), and as six (0–4) for Korea (KLoSA); <sup>c</sup> 1 = very good to 5 = very poor.

\**p* < .05. \*\**p* < .01.

female (Ory, Hoffman, Yee, Tennstedt, & Schulz, 1999; Pinquart & Sörensen, 2003). Caregivers do not choose to become caregivers; indeed, in the present study, adopting this role was not a planned event (Brodsky et al., 2003). Our analyses showed that adoption of the caregiving role in Italy and Korea seemed to result from the limited choices available, irrespective of the health status of caregivers, in that being a caregiver in these countries was associated with self-rated poor health. We found the opposite trend in several other countries, such as Germany, Sweden, the Netherlands, and Denmark, where those with poor self-rated health were less likely to be caregivers.

Our findings are limited in several respects. Because our data were drawn from different countries, we cannot rule out cultural variations in the meaning of “help with activities of daily living”. People with certain cultural backgrounds may tend to report differently about the same conditions. Because few consensually-accepted definitions of informal caregivers have been developed (i.e., those including operational definitions of time spent or duration of care), we defined informal caregivers as those who reported helping family members with ADLs or IADLs. Additionally, no detailed data about the intensity of care (e.g., the frequency of care) were available for our analyses. The SHARE and KLoSA included information about the average frequency of caregiving, but the questionnaires used in these datasets were not comparable. Therefore, we could not interpret the different proportions of family caregivers among total populations across countries. Our macrolevel analysis is also subject to the usual caveats about ecological inference. Several possible associations may not have been observable due to the time lags that characterize national characteristics. Additional studies including longitudinal trends with large *n* regression analysis are needed to examine causality and to elucidate how such variables might explain national statistics.

## Conclusion

Korea, Spain, Italy, and Greece exhibited similarly high percentages of women, homemakers, coresidents, and spouses among informal caregivers. Denmark and Sweden were characterized by high proportions of employed informal caregivers. Relieving women of their informal caregiving roles and enabling them to share these roles with formal care providers and other resources might increase the participation of women in the labor force and thereby enhance the economic development of societies.

## Conflict of interest

The authors declare no conflict of interest.

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