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# Place of death and associated gender difference in Korea 2006–2014: Evidence from exit interviews of the Korean Longitudinal Study of Ageing



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<i>Keywords:</i> Gender	Previous research has revealed that many people wish to die at home; however, most die in healthcare in
Long-term care Place of death	stitutions. This study explored factors related to the place of death and gender differences in this regard among older adults in South Korea. Participants included older adults from the Korean Longitudinal Study of Ageing.
	Multinomial logistic regression was used to examine relationships between place of death and relevant factors.
	Most older adults died in hospitals, followed by at home and in assisted living residences. Hospital and assisted living residence deaths increased while home deaths decreased. In both men and women, higher daily living
	dependency increased the probability of dying in an assisted living residence. Women were more likely to die in
	assisted living residences than men, and for persons living in urban areas, there was a decreased likelihood of
	home death only in women. Findings support that end-of-life care is performed mostly by institutions in Korea
	and there are gendered patterns. To achieve aging in place, the place of death and community-based terminal

care should be more considered when implementing long-term care policies.

## 1. Introduction

The place of death is considered an important indicator of the quality of end-of-life care (De Roo et al., 2014). Even among diverse cultural and healthcare environments across countries, most people want to die at home; however, deaths in hospitals or care institutions are more common (Gomes, Calanzani, Gysels, Hall, & Higginson, 2013). In South Korea, 57.2% of adults wish to die at home (National Health Insurance Service, 2017a), yet 78.6% of deaths in adults aged 65 years and older occur in healthcare institutions (Statistics Korea, 2017), illustrating a mismatch between preferred and actual place of death. Indeed, many people wish to grow old in their own familiar environment, staving independently in their homes and communities for as long as possible (AARP, 2011). 'Aging in place' has been one of the most important policy goals worldwide, aimed at ensuring the dignity of older adults with community-based care (Iecovich, 2014). In this regard, exploring trends in place of death would provide a basis for answering the question of whether individuals achieve 'aging in place' where they are most comfortable until death, and what further efforts are needed to improve the quality of care during death for a growing population of older adults.

An international comparison study on the place of death for people who died from diseases (Pivodic et al., 2016) showed that 85% of

Korean people died in a hospital, which was the highest ranking among the 14 countries. Variations across countries in cause of death, sociodemographic characteristics, and health care availability make a difference in the proportions of places where death occurs. Cohen et al. (2006) revealed that a lower educational level, living alone, and nonmalignant disease were associated with dying in a hospital in Belgium. The availability of home hospice or home care services is also a crucial factor for the place of death in society (Rhee, 2016). Since 2008, when Korea launched long-term care insurance for older adults, increased access to home care services and long-term care assisted-living residences may have influenced the distribution of place of death. The trends regarding where people receive care and prepare for death have social and political implications for the quality of end-of-life care. In 2013, approximately 48.2% of long-term care expenses were used for home-based care services and 51.8% for institutional care expenses (National Health Insurance Service, 2013). For 5 years, from 2009 to 2013, institutional care expenses increased by 8.5%, but home-based care service expenses decreased. The statistics indicate that older persons are increasingly using institutional care, as the proportion of deaths within hospitals and nursing homes is also increasing (Choi et al., 2005; Hyun et al., 2013; Yun, Lim, Choi, & Rhee, 2006). In this context, the present may be a critical time to examine place of death, focusing especially on sociodemographic patterns in Korea, as it has

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been 10 years since long-term care insurance was implemented.

Women are more likely to report limitations, use of assistance, and increased disability (Murtagh & Hubert, 2004). Due to the higher life expectancy and higher dementia prevalence of women, most older adults who enter assisted living residences are women. Furthermore, women, especially older women, are more likely than men to become informal familial caregivers. Given the patrilineal family system and traditional Confucian culture, older Korean women among family members-typically wives, daughters, and daughters-in-law-are the primary caregivers (Jang, Avendano, & Kawachi, 2012; Lim, Ahn, & Ahn, 2015). After a lifetime of caregiving labor, older women may decide to enter care facilities in their later lives due to a lack of family caregivers (Jung, Sunwoo, Oh, Lee, & Choi, 2013): this may support differences in place of death by gender. We focused on whether there is a gender difference in the proportion of deaths at assisted living residences and, if so, whether the factors affecting the place of death differ by gender.

This study aimed to explore the current profile and pattern by gender in place of death and associated factors among Korean older adults. The process of knowing where older people die and why a specific population group shows a different pattern in a social context may be the first step towards better and equitable end-of-life care within the country.

#### 2. Methods

#### 2.1. Data source and study population

We used data from the first (2006) through fifth wave (2014) and exit interview data from the Korean Longitudinal Study of Ageing (KLoSA), conducted by the Korea Labor Institute and Korea Employment Information Service. The KLoSA is a nationwide panel survey conducted every two years on approximately 10,000 people aged 45 years and older since 2006. Data include financial, sociodemographic, and health-related information from middle-aged and older adults. The survey was carried out using computer-assisted personal interviewing (CAPI). The data, questionnaire, and coding guide can be downloaded at http://survey.keis.or.kr. Every two years since its beginnings in 2008, the KLoSA has conducted exit interviews with close family members of the deceased to ascertain characteristics at the time of death. Each data set provides information regarding deaths during the past two years. Information from the deceased that could not be obtained within the death survey was analyzed by referring to the main survey data obtained before the exit interview. Of the respondents included in the second through fifth exit interviews, deceased individuals with a place of death that could be clearly identified were selected for analysis. The study design and protocol were reviewed and approved by the C University Institutional Review Board (IRB No. 1041078-201708-HRSB-163-01).

## 2.2. Measurements and analyses

Place of death from the first exit interview in 2008 to the fourth exit interview in 2014 was the dependent variable. Places were classified into three categories—home, hospital, and assisted living residence—using information acquired. Homes included the home of the deceased, their children, or other relatives; hospitals included acute hospitals, general hospitals, and university hospitals; and assisted living residences included nursing homes, and group homes. Home represented the place where they lived as "home" using the questionnaire about house ownership (the participant's own house/child or relative's house). As for the hospital variable, we aggregated all hospitals including long-term care hospitals, given that the KLoSA questionnaire did not distinguish hospital type. Long-term care hospitals in Korea are classified as hospitals that have medical staff under medical insurance coverage; however, the work functions of long-term care personnel are often close to those of nursing home staff.

Factors affecting place of death, to varying degrees, based on previous studies (Gomes et al., 2013; Guerriere et al., 2015; Moens et al., 2015; Yun et al., 2006), were included as independent variables. Age (64–74 years vs. 75 years or older), gender (men vs. women), education level (less than middle school graduation vs. high school graduation or higher), household income level (three quantile groups), number of cohabitant family members (1, 2, and 3 or more), marital status (married vs. unmarried), employment status (employed vs. unemployed), and residential area (urban vs. rural) were included as sociodemographic factors. Self-rated health (good vs. poor), number of chronic diseases, and activity of daily living dependency were included as health-related factors.

Economic condition was determined as equivalent income, which was obtained using gross household income divided by the square root of the number of household members in the past year (Choi et al., 2007). These results were categorized into tertiles. For self-rated health, participants were given a questionnaire asking them to rate their own health using a 5-point Likert scale. Responses were combined into 'good' for responses of 'excellent' and 'good', and 'poor' for responses of 'average', 'moderately poor', and 'severely poor'. The KLoSA asked about chronic diseases suffered until one week prior to death, and a total of 11 diseases or injury (cerebral stroke, hypertension, diabetes, cancer, lung disease, heart disease, liver disease, dementia or memory disorder, mental disease such as depression, fracture or traffic accident sequelae, and arthritis) were included. For the level of daily living dependency, 17 questions related to activities of daily living (ADL; dressing, washing, bathing, eating, moving in and out of bed, going to the toilet, controlling continence) and instrumental activities of daily living (IADL; self-care, housekeeping, food preparation, doing laundry, going out by walking, going out using transportation, shopping, managing financial matters, using the telephone, and taking medications) up until three months prior to death were scored by assigning one point if help was needed and zero points if not, with the total score ranging from zero to 17 points.

To examine place of death trends chronologically from 2008 to 2014, a frequency analysis was carried out, *p*-trends were obtained, and differences in the place of death (home, hospital, or assisted living residences) according to characteristics of the deceased were analyzed using Pearson's chi-square test. To ascertain the relationship between place of death and associated factors, odds ratios of deaths at home and in assisted living residences were compared to deaths in hospitals by performing multinomial logistic regressions separately by gender. Age, education, income, number of cohabitant family members, marital status, employment status, residential area, self-rated health, number of chronic diseases, and level of daily living dependency were adjusted in all regression models.

### 3. Results

#### 3.1. Study participant characteristics by year

A detailed breakdown of participants according to the characteristics chosen for this study are presented in Table 1. Data from participants were analyzed, including 187 in 2008, 309 in 2010, 326 in 2012, and 438 in 2014. In every year of the study, most of the participants were men, 75 years or older, living with three or more family members, married, unemployed, and living in urban areas with lower educational and income levels. The ratio among participants with poor self-rated health was consistently high, ranging from 84.0% (2008) to approximately 99.2% (2012). The proportion of deaths in hospitals comprised the highest ratio, ranging from 59.3% (2008) to 64.4% (2014), followed by homes and assisted living residences, respectively. The distribution of place of death changed significantly over the course of the study period; deaths in hospitals and assisted living residences increased, whereas deaths at home decreased. In addition, the trends of Download English Version:

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