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Original Article

A Study on the Utilization Status by Type of Benefit in the National Long-Term Care Insurance for the Elderly

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ABSTRACT

Objectives: This study was conducted to analyze the utilization status of the National Long-Term Care Insurance system, which was introduced to address the surging demand for elderly care due to rapid population aging, and to seek sustainable development strategies. **Methods:** The analysis was performed using the National Health Insurance Corporation's Senior Cohort 2.0 database from 2008 to 2019. **Results:** The incidence rate of long-term care certification has been continuously increasing since 2011, reaching 1,346 for men and 2,117 for women per 100,000 population in 2019. The rate for women was notably higher than for men, and the gap widened over the study period. The monthly average utilization rate of long-term care benefits peaked in 2013 (90.5% for men and 93.0% for women) but maintained an overall increasing trend. Home-visit care accounted for the highest proportion, with a utilization rate of 41.6% for men and 42.8% for women in 2019. Furthermore, the monthly average usage days for facilities (29.1 days for men and 29.5 days for women) and nursing hospitals (27.1 days for men and 27.9 days for women) remained consistently high, while the usage days for day and night care services showed a steady increase, reaching 28.3 days per month for men by 2019. **Conclusions:** To address the increase in long-term care demand, it is essential to improve the equity of the grade system, reduce out-of-pocket costs, and integrate related services such as those from nursing hospitals. Additionally, it is necessary to foster a workforce with practical caregiving skills and ensure a stable working environment to enhance professionalism and reduce turnover.

Keywords: Long-Term Care Insurance, Aging, Elderly Care, Care Utilization, Healthcare Policy

1. Introduction

Our society is facing a significant social challenge: rapid population aging and a corresponding surge in the demand for elderly care [1]. The traditional family-centered support system for the elderly has reached its limit due to structural changes such as low birth rates, nuclear families, and increased female participation in social activities [2]. This situation has led to unnecessary long-term hospitalizations for the elderly due to care gaps, causing an increase in medical costs. The problem is further exacerbated by the growing number of seniors with chronic diseases like dementia and stroke who require care [3].

The weakening of caregiving functions within the family has sometimes created blind spots in long-term care, leading to social issues such as severed contact after institutionalization and even extreme incidents [4]. The financial burden of elderly care has also placed considerable pressure on individual households, leading to continuous calls for social responsibility and the establishment of a robust support system for elderly care [5].

Against this social backdrop, the Long-Term Care Insurance (LTCI) System for the Elderly was implemented in July 2008 to support stable lives for the elderly and alleviate the caregiving burden on families [5]. This system provides various care services—such as institutional care, at-home care, and special cash benefits—to individuals aged 65 and older, or those under 65 with age-related diseases that make daily life difficult. Eligibility is determined through a long-term care grade assessment [6].

Managed by the National Health Insurance Service, the system has become a key social safety net in South Korea, demonstrating positive effects such as reduced financial burden on families, increased life satisfaction for the elderly and their families, and alleviating the caregiving burden, which allowed family members to better engage in social and economic activities [5-7].

Since its implementation, LTCI System has been widely reported to have positive effects in terms of reducing caregiving costs, increasing life satisfaction, improving the quality of life for users' families, and easing the burden of care. However, despite its practical establishment, several structural limitations and areas for improvement have emerged. For instance, in the process of expanding service coverage, there have been complaints from families who were excluded due to rigid eligibility criteria. The cost burden, including co-payments, still remains, hindering the full achievement of universal welfare [8, 9]. Furthermore, in terms of service inclusivity, LTCI services are often limited to physical assistance, leading to a lack of seamless integration among health, welfare, and medical services. Many recipients are still admitted to long-term care hospitals for extended periods even after being approved for a care grade, indicating deficiencies in the continuity of care and functional connections [8, 9].

This study aims to analyze the utilization of the LTCI System according to gender, year, and benefit type. Specifically, it seeks to verify how the incidence rate of long-term care certification and benefit utilization patterns have changed over a long-term period, and whether gender-based differences have emerged in the process. While previous studies have focused on describing the situation at a specific point in time, this study is distinct in that it analyzes the dynamic changes in service demand using a 12-year long-term panel dataset. The goal of this research is to contribute to proposing policy directions for strengthening the system as a core social safety net that can effectively respond to the surging demand for long-term care and ensure the quality of life for the elderly.

2. Literature Review

2.1. Utilization Status

According to the Korea Health Panel Survey, approximately 3% of adults aged 65 and over applied for LTCI between 2009 and 2012, with about 80% of applicants being certified for a grade [10]. Subsequently, driven by the growing elderly population and the easing of certification criteria, the number of applicants and certified individuals has consistently risen, reaching approximately 12% of the total elderly population by 2022 [11].

A significant majority—approximately 80%—of certified individuals receive in-home care services at their residences rather than entering facilities, indicating a clear preference for home-based over institutional care [10]. Among in-home services, home-visit care is the most utilized, with family members such as spouses or daughters-in-law often serving as the primary caregivers [10]. Demographically, a higher proportion of beneficiaries are women, and Grade 3 is the most common certification level. In terms of cost, most users reported having no out-of-pocket payments [10].

2.2. Changes in Utilization Patterns

A growing desire among the elderly to "Age in Place" has led to a consistent increase in the utilization of in-home care services over institutional care [12]. In particular, day and night care services are emerging as a key alternative for reducing family caregiving burdens and promoting social interaction [5].

Beyond merely increasing utilization rates, recent research has focused on the issue of "certified non-users" - individuals who are approved for benefits but do not use them. While the primary reason for non-use is receiving care from family, a lack of information about services and an inability to afford co-payments have also been identified as significant barriers [13]. This suggests an urgent need for qualitative improvements to the system, such as providing tailored information and strengthening co-payment reduction schemes, to address these service gaps beyond simple quantitative expansion.

2.3. Policy Effects

The LTCI system has generated multifaceted positive effects since its introduction, extending beyond the individual beneficiaries and their families to the national healthcare system and society at large.

First, elderly individuals who utilize the services often experience more positive outcomes in terms of life satisfaction, social and leisure activities, and psychological stability compared to non-users [6]. Notably, the quality-of-life improvements are more pronounced with long-term, continuous service use, highlighting the importance of ensuring stable access. Furthermore, a substantial reduction in the psychological and economic burden on family caregivers has been consistently reported [11].

At the macro level, the introduction of the LTCI has been associated with a decrease in unnecessary hospital-

izations, leading to a general downward trend in total hospital days and national health insurance expenditures [14]. The system has also contributed to the efficiency of the healthcare system by reducing preventable medical service use through improved chronic disease management and treatment [15].

Ultimately, by socially guaranteeing elderly care, the system has enhanced the overall quality of life for the nation. It also functions as a core social safety net by generating ripple effects, including the growth of the care service industry, job creation, and the expansion of welfare infrastructure [16].

3. Research Methods

3.1. Data Source

This study conducted its analysis using data from the National Health Insurance Service (NHIS) Senior Cohort 2.0 database spanning the years 2008 to 2019. The study period was set to conclude in 2019 because, at the time of the research design and data access, it was the final year for which data was available in the database.

This DB uses a population of approximately 6.4 million individuals who were between the ages of 60 and 80 and maintained health insurance or medical aid eligibility as of January 31, 2008. From this population, an 8% simple random sample was extracted, creating a sample of 511,953 individuals. To account for natural attrition (e.g., death), an additional 8% of individuals turning 60 each year from 2009 onward were added, totaling 476,211 new participants. For this study, we set the analysis target as the initial 511,953 individuals, excluding the new participants.

3.2. Definition of Subjects and Variables

This study analyzed long-term care-related data using the Senior Cohort 2.0 database. The subjects eligible for LTCI were defined as individuals certified with Grades 1-5 or the Cognitive Support Grade under the LTCI system in each year from 2008 onwards.

The variables were defined as follows:

- Annual Incidence Rate of Long-Term Care Recognition: The number of individuals newly recognized for an LTCI grade per 100,000 population each year.
- Annual Mortality Rate of Recognized Individuals: The proportion of deaths among individuals recognized for LTCI in a given year.
- Monthly Average Utilization Rate by type of Long-Term care benefit: The percentage of all LTCI-certified individuals who use at least one LTCI benefit in each month. The raw data, based on claim dates, was restructured according to service start dates. The benefit types were categorized into in-home care (visiting care, visiting bathing, visiting nursing, day and night care, short-term care), institutional care (nursing homes, group homes for the elderly), and long-term care hospital admission. Individuals were counted for each benefit type used, allowing for duplicate counts across categories.
- Monthly Average Utilization Days by type of Long-Term Care Benefit: The average number of days per month that beneficiaries, who used a specific type of benefit, received that service in each month.

3.3. Statistical analysis

This study used frequency analysis to observe the status and trends of long-term care-related indicators. The status of individuals granted long-term care grades was determined by identifying the number of recipients each year and calculating the incidence rate relative to the total cohort population for that year. The mortality rate was calculated based on the number of deaths relative to the number of individuals with a long-term care grade. We analyzed the frequency of benefits utilization among long-term care recipients each year to determine the utilization rate and identify its trend.

All analyses were performed by accessing the National Health Insurance Service virtual room, using R-Studio as the analytical tool.

3.4. Ethical Approval

The research protocol received ethical clearance from the Institutional Review Board (IRB) of Dankook University (IRB no. DKU IRB 2025-08-034), ensuring all procedures complied with the principles of the Declaration of Helsinki. For this analysis, we utilized National Health Insurance Corporation's Senior Cohort 2.0 database (Research ID. NHIS-2025-09-2-096). As this dataset was fully de-identified and contained no personally identifiable information, the IRB waived the requirement for written informed consent.

4. Results

4.1. Annual Incidence Rate of Long-Term Care Recognition and Mortality Rate of Recognized Individuals

Figure 1 presents the annual incidence of long-term care grade recognition per 100,000 population. For the incidence

rate of long-term care grade recognition per 100,000 population, there was a slight decrease from 2009 to 2010 compared to the previous year, but it showed a continuous upward trend from 2011 onwards. Notably, the incidence rate for women was consistently higher than for men throughout the study period, and this gap tended to widen over time. As of 2019, the incidence rate for women was approximately 1.6 times higher than that of men.

Regarding the annual mortality rate of individuals with long-term care recognition, the pattern remained largely stable for both men and women (Figure 2). The mortality rate for men fluctuated between the late 15%s and early 17%s, while for women, it remained between the late 8%s and early 10%s. In contrast to the incidence rate, the mortality rate was consistently higher for men than for women throughout the study period.

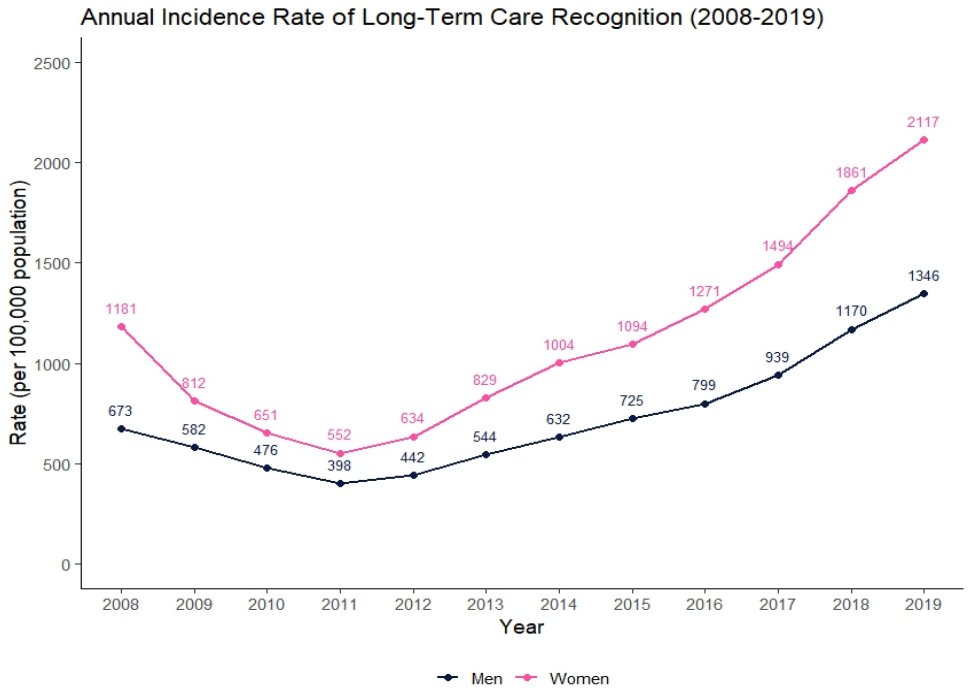

Fig. 1. Annual Incidence of Long-Term Care Recognition (2008~2019)

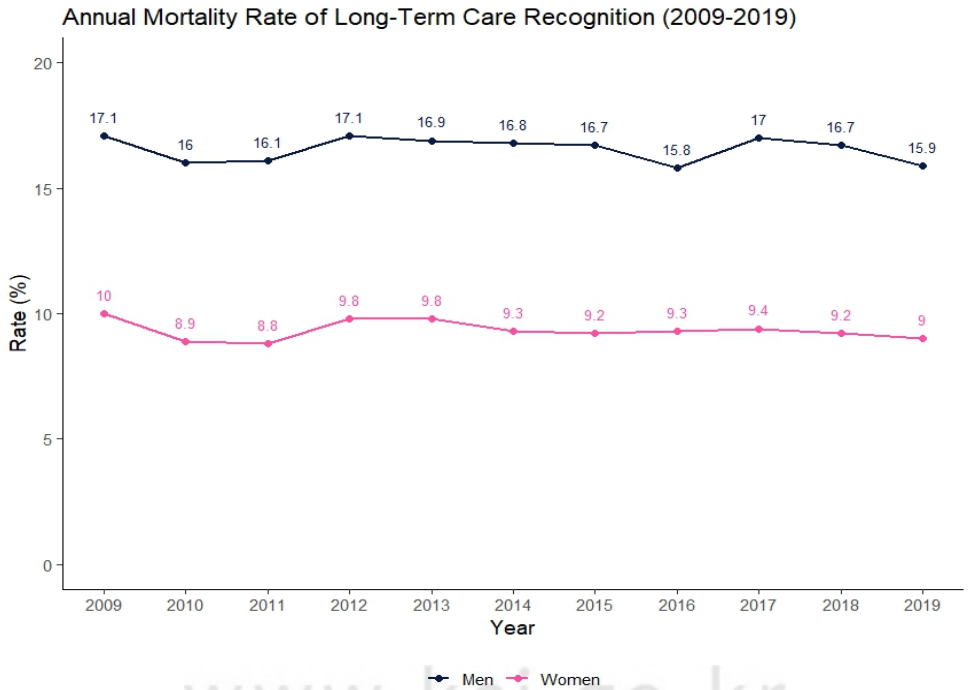

Fig. 2. Annual Mortality Rate of Long-Term Care Recognition (2009-2019)

4.2. Monthly Average Utilization Rate by Type of Long-Term Care Benefit

Table 1 shows the average monthly utilization status of long-term care benefits for recognized individuals. For both men and women, the overall average monthly utilization rate of care benefits increased from 2008 to 2019. However, both genders showed a slight decrease after peaking in 2013. The most utilized type of benefit for both men and women was home-visit care, followed by institutional care, long-term care hospital admissions, visiting bathing, day and night care, visiting nursing, and short-term care, in that order.

Notably, the utilization rate of day and night care services showed a steady upward trend, increasing 3.1-fold for men and 2.2-fold for women in 2019 compared to 2008. In contrast, the rates for visiting bathing and short-term respite care continuously decreased. Throughout the study period, women consistently maintained a higher utilization rate of care benefits than men.

4.3. Monthly Average Utilization Days by Type of Long-Term Care Benefit

Table 2 shows the average monthly utilization days by type of long-term care benefit. For both men and women, the highest average monthly utilization was for institutional care, followed by long-term care hospital admissions, day and night care, visiting care, short-term care, visiting nursing, and visiting bathing, in that order.

Table 1 Monthly Average Utilization Rate by Type of Long-Term Care Benefit (Unit: %)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Men	**70.8**	**79.1**	**87.7**	**89.7**	**89.9**	**90.5**	**89.8**	**88.3**	**88.0**	**87.4**	**86.3**	**86.4**
Visiting Care	28.4	44.9	57.0	55.1	50.3	48.8	46.3	44.0	43.4	42.2	41.0	41.6
Visiting Bathing	9.7	12.1	18.1	18.3	17.1	15.6	13.2	11.8	10.9	10.4	9.6	8.8
Visiting Nursing	1.7	1.9	1.7	1.7	1.8	1.4	1.4	1.5	1.3	1.4	1.4	1.4
Day and Night Care	3.4	3.0	3.2	3.9	4.3	4.7	5.3	6.1	7.0	8.1	9.2	10.7
Short-Term Care	1.7	2.6	0.5	0.3	0.4	0.6	0.4	0.3	0.3	0.2	0.1	0.1
Institutional Care	23.2	17.2	17.9	21.3	24.0	23.8	23.1	22.4	21.4	20.7	19.3	18.2
Long-Term Care Hospital	11.9	10.2	8.4	8.3	9.6	10.8	12.0	12.6	12.9	13.6	14.5	13.9
Women	**78.4**	**84.7**	**90.8**	**92.5**	**92.9**	**93.0**	**92.3**	**91.2**	**91.2**	**90.7**	**89.7**	**89.2**
Visiting Care	31.8	46.2	54.8	51.6	47.3	46.2	45.1	43.7	43.4	43.1	42.4	42.8
Visiting Bathing	7.7	8.5	11.1	11.0	10.1	9.1	7.8	6.8	6.4	6.9	6.7	6.7
Visiting Nursing	1.5	1.6	1.4	1.1	1.2	1.1	1.0	1.0	1.0	1.1	1.1	1.1
Day and Night Care	4.9	4.4	4.3	4.3	4.5	4.5	5.1	6.2	7.1	8.3	9.6	10.7
Short-Term Care	2.1	3.3	0.6	0.3	0.4	0.7	0.6	0.5	0.4	0.3	0.3	0.2
Institutional Care	28.1	21.8	23.7	28.1	31.2	31.1	30.1	28.7	28.2	26.7	25.0	23.4
Long-Term Care Hospital	12.0	9.6	8.3	8.7	10.0	11.1	12.0	12.6	12.5	12.9	13.2	12.9

Table 2. Average Monthly Utilization Days by Type of Long-Term Care Benefit (Unit: days)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Men												
Visiting Care	17.8	20.8	22.8	22.3	21.7	21.4	21.2	21.3	21.6	22.2	22.4	22.6
Visiting Bathing	3.2	3.7	4.2	3.9	3.7	3.6	3.5	3.5	3.4	3.4	3.4	3.4
Visiting Nursing	4.1	4.2	4.1	3.9	4.2	4.4	4.5	4.6	6.2	6.7	7.2	7.9
Day and Night Care	18.9	19.0	18.9	18.7	18.6	19.8	20.1	21.4	27.8	28.0	28.0	28.3
Short-Term Care	24.9	25.9	19.4	13.3	14.6	14.6	14.7	15.5	16.8	17.1	15.5	15.2
Institutional Care	29.2	29.0	28.9	28.9	29.1	28.9	29.0	29.0	29.2	29.1	29.0	29.1
Long-Term Care Hospital	27.0	26.2	26.1	26.0	26.2	26.5	26.7	26.8	26.9	27.0	26.9	27.1
Women												
Visiting Care	17.1	19.8	21.4	21.1	21.0	20.6	20.3	20.3	20.5	21.1	21.1	21.3
Visiting Bathing	3.5	3.5	3.8	3.7	3.5	3.5	3.3	3.2	3.2	3.2	3.1	3.1
Visiting Nursing	4.6	4.1	3.6	3.8	4.1	4.0	3.9	3.9	5.8	6.3	6.5	7.0
Day and Night Care	18.9	19.2	19.3	19.0	19.4	20.3	20.6	21.6	28.0	28.1	28.3	28.4
Short-Term Care	25.8	26.7	20.5	13.4	14.3	15.0	15.0	15.2	15.8	15.5	15.6	15.4
Institutional Care	29.6	29.4	29.4	29.5	29.5	29.4	29.4	29.5	29.6	29.6	29.5	29.5
Long-Term Care Hospital Admissions	26.8	26.7	26.8	26.9	27.1	27.2	27.5	27.6	27.7	27.7	27.7	27.9

Both institutional care and long-term care hospital admissions maintained a consistently high and stable average number of monthly utilization days throughout the study period, indicating they were used nearly every day of the month. Additionally, the average monthly utilization days for day and night care services showed a steady increase overall. The trends in average monthly utilization days were similar for both men and women.

5. Discussion

This study was conducted to explore avenues for the sustainable development and expanded social role of the LTCI System, based on an analysis of its utilization status. The findings show that the incidence of LTCI recognition has continuously increased since 2011, with a particularly higher rate among women compared to men, and a widening gender gap. Conversely, the mortality rate among recognized individuals remained stable for both genders, though it was consistently higher for men. The average monthly utilization rate of care benefits peaked in 2013 before slightly decreasing but maintained an overall upward trend. Home-visit care accounted for the largest share, and the utilization rate was higher among women. In terms of average monthly utilization days, institutional care was the most common for both genders, and the overall patterns were similar for men and women.

These results offer the following implications.

First, the continuous increase in the incidence of LTCI recognition is closely linked to accelerating aging and a rise in the prevalence of chronic diseases [17]. The trend of a higher and widening incidence rate among women is particularly noteworthy. This is directly related to a social context where the proportion of elderly women is growing due to increased life expectancy, and the number of elderly women living alone is rising due to falling marriage rates and social structural changes [18]. Therefore, to effectively and proactively respond to the increasing demand for LTCI services, it is essential to develop differentiated policy measures that account for gender-specific characteristics.

Second, the stable mortality rate among LTCI recipients, with no significant changes, indirectly suggests that LTCI services have a positive impact on maintaining the quality of life for the elderly. However, the consistently higher mortality rate among men compared to women may be linked to health disparities and the heterogeneous prevalence of diseases by gender [19]. Men are more frequently exposed to health-risk behaviors like smoking and drinking, as well as occupational exposure to harmful substances, than women [19]. Furthermore, men have a significantly higher incidence of ischemic heart disease [20], and are more vulnerable to external causes of death, such as traffic accidents and suicide [19]. The gender gap in mortality rates should therefore be interpreted as a result of a complex interplay of biological vulnerabilities, risk behaviors, and socio-environmental factors. Differentiated policy formulation based on gender characteristics should include a multi-faceted approach to address this gap.

Third, the slight decrease in the average monthly utilization rate of care benefits after its peak in 2013 is notable. This could be interpreted as the LTCI System entering a stabilization phase after an initial surge in utilization. However, it also suggests the possibility that other factors, such as a shortage of service supply or an increase in user costs, may be at play [21]. The finding that home-visit care constitutes the largest share of services might reflect a high preference for at-home care, it could also reflect difficulties in institutional admission or the societal shift toward community-centered care [22]. Moreover, this at-home care-centric utilization pattern highlights the importance of providing personalized services that consider individual characteristics and living environments. It suggests that future policy direction should focus on strengthening community-based integrated care systems [23, 24]. Ultimately, these changes in utilization rates and the distribution of service types show the need for in-depth analysis and multi-faceted policy efforts to improve the quality of LTCI services and ensure their sustainable development.

Fourth, the high and stable average monthly utilization days for institutional care and long-term care hospitals, which are used almost daily, demonstrates their essential role for bedridden patients or those who require intensive medical and care support [25]. Conversely, the steady increase in utilization days for day and night care services indicates a growing demand for resolving care gaps during the day and alleviating the burden on family caregivers [5]. This aligns with the current policy direction of the LTCI System, which emphasizes the importance of at-home services, and suggests that future policy considerations should focus on the expansion and qualitative improvement of day and night care services.

In summary, for the LTCI System to function as an essential social safety net in an aging society, it is crucial to meticulously analyze the continuously increasing incidence rate, gender differences, and service utilization behaviors. In particular, policy efforts must be sustained to balance supply with the shifting demand from institution-centered to at-home services and to improve the quality of care, thereby strengthening the system's stability and effectiveness.

To achieve this, the system needs to be improved to prevent inequities in benefit allocation under the current grade system, and proactive measures must be explored to reduce users' out-of-pocket expenses, such as long-term care hospital admission costs. Furthermore, to enhance service inclusivity, various related services—such as medical services at long-term care hospitals and visiting health programs at public health centers—must be integrated. Additionally, workforce development and management is essential for improving service quality. The focus should shift from theory-based education to training personnel with practical skills in physical activity and household support. At the same time, a multi-faceted approach should be taken to ensure stable working conditions and income for care providers, such as caregivers, to enhance their professionalism and reduce turnover rates.

6. Conclusions

This study analyzed the utilization of the LTCI System to explore avenues for its sustainable development and expanded social role. The findings indicate that the incidence of LTCI recognition is on a continuous upward trend, particularly among women. The mortality rate among recognized individuals remained stable for both genders, though it was higher for men. While the utilization rate of care benefits slightly decreased after 2013, it showed an overall increase, with home-visit care being the most utilized service and women showing a higher utilization rate.

These results suggest that to cope with the increasing demand for long-term care due to deepening population aging, it is essential to expand the service coverage, enhance service inclusivity, and improve the training and management of care providers. Specifically, there is a need to improve the equity of the grade system, reduce out-of-pocket costs for users, integrate administrative and delivery systems with related services like long-term care hospitals and develop a workforce with practical caregiving skills and ensure a stable working environment for them.

Ultimately, for the LTCI System to effectively function as a crucial social safety net that meets changing societal needs and guarantees the quality of life for the elderly, these multi-faceted policy efforts must be sustained.

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Conflicts Interest

The author declares no conflict of interest.

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