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Components of Elderly Long-term Care System in Iran and Selected Countries: A Comparative Study

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Abstract

Context: With the increasing number of the elderly suffering from chronic diseases and disabilities, elderly long-term care (LTC) has been the subject of attention by health and welfare policymakers. This study aimed to compare the components of LTC for the elderly in Iran and selected countries.

Methods: This comparative study was conducted in 2020. The search was conducted in three databases (PubMed, Scopus, and Web of Science), two search engines (Google Scholar and Google), and the websites of WHO and the Ministry of Health and Welfare of the selected countries from 2000 to 2020 to find relevant documents on the subject. The selection of countries was based on three criteria: the type of health system, having the highest percentage of the elderly population, and the development status. Finally, Germany, France, Sweden, Japan, South Korea, Turkey, Thailand, and Iran were included in the study. The findings were organized using a common LTC framework.

Results: In this study, the common framework of LTC systems, including beneficiaries, benefits packages, providers, and financing, was used. The study results showed that developed countries had formal LTC systems with specific mechanisms, but each country had differences in the implementation of different components of this system. On the other hand, in most developing countries, sporadic measures were taken in this field.

Conclusions: In general, developed countries have adopted different LTC system approaches in the organization, financing, type of services, and generosity of benefits. In choosing the appropriate LTC model in developing countries, factors such as the health system, resource constraints, social, and cultural status should be considered.

Keywords: Long-term Care, Elderly Care, Comparative Study, Iran

1. Context

With the beginning of the third millennium, the phenomenon of population aging has become a global issue more than before (1, 2). It is estimated that the proportion of the world's population aged 60 or above will double between 2015 and 2050 (3). The aging phenomenon was initially limited to developed countries, but in recent years, this phenomenon has been seen in many developing countries, too (4). Statistical indicators show that the population aging in Iran has started due to increased life expectancy and reduced fertility rates (5, 6). According to international statistics, 21.7% of Iran's population in 2050 will be over 60 years old (7). The increase in the elderly population in Iran is in a way that it is introduced as a megatrend affecting health (8). The rapidly aging population, coupled with the increasing number of the elderly with comorbidity has posed a fundamental challenge to health systems that have historically been designed to provide episodic and curative care (9, 10). This historical approach to health care is not in line with the population's current and future needs. The World Health Organization supports fundamental reforms in health and long-term care systems to support healthy aging (3, 11).

Long-term care (LTC) is one of the most important public health priorities (11). Providing LTC has attracted much attention, particularly from health and welfare policymakers. Expansion of the LTC system has become a political goal in many countries with increasing life expectancy and a high burden of chronic illness (12, 13). Many developing countries are now focusing on expanding the LTC capacity before aging becomes a major challenge (14). As part of universal health coverage, LTC emphasizes ensuring access to

elderly care without financial hardship (11).

The LTC system consists of health and social services provided to the elderly with chronic illnesses and physical or mental disabilities to help them achieve and maintain optimal functioning and health (15). The LTC is distinct from acute and episodic medical interventions because this type of care is provided over a long time as integration into individuals' daily lives (16). Such services are provided in people's homes, nursing homes, or LTC hospitals (17).

A brief look at the Iranian health system shows that despite the significant number of the elderly in need of LTC (18), there is no LTC system tailored to their needs. The elderly go to public hospitals and use the same procedures as other patients, regardless of their illness. Complex procedures and repetitive costs may delay the diagnosis and treatment and also increase the costs (19). In Iran, LTC is mostly provided informally by family caregivers, and long-term care insurance is not developed (20). Given that providing LTC for the elderly is a step towards achieving UHC, this study aimed to compare the LTC components in Iran and selected countries. It tries to identify selected countries' experiences to assist planners and policymakers in designing a sustainable and effective LTC system.

2. Methods

This comparative study was conducted in 2020. A six-step protocol, including determining the countries to be studied, determining the areas to be studied, searching for relevant documents, selecting documents, extracting data, and reporting, was used to perform this comparative review (21). Searching for electronic resources based on the keywords of long-term care, elderly care, aging care, financing, service delivery, and selected countries was conducted. These keywords were combined with PubMed and Scopus databases, Google Scholar, Google search engine, as well as the websites of the Ministry of Health, the World Bank, WHO, and OECD. The inclusion criteria for studies were as follows:

1) All articles and reports related to LTC in the selected countries;

2) Papers published between 2000 and 2020;

3) Papers published in the English and Persian languages.

Reports and articles that were inconsistent with the objectives of the study were excluded. Totally, 19 documents were included in the study.

The inclusion criteria for countries were the type of country's health system financing, countries with the highest percentage of the elderly population, and the development status of countries. The reason for choosing them was that based on these criteria, we would eventually select a diverse group of countries based on the type of country's health system financing and level of development in which the population aging index was high (22). Also, having successful experiences and policies in implementing the LTC system and having credible evidence available were considered in selecting the countries. In this regard, the literature review and experts' opinions were used. As a result, Germany, France, Sweden, Japan, South Korea, Thailand, Turkey, and Iran were selected for comparing their LTC system components (Table 1).

In this study, we used the common model of the LTC system that was used in previous studies. Because this framework represents the main characteristics of LTC systems, it was used to classify and organize the findings. This pattern is the result of the interaction of four components: (1) beneficiaries (who use LTC); (2) benefits package (what services are provided); (3) providers who deliver LTC services; and (4) financing (who pays for LTC) (12, 14, 23-25).

After the literature review, the LTC system variables were identified, and the data were gathered using a researcher-made checklist based on the LTC framework (25). The researcher-made checklist contained all the information related to the objectives of the study. The extracted data were classified according to the components of the analysis and were then organized into comparative tables. A comparative table was completed for the eight selected countries. Comparative tables included components such as the demographic/health indicators, beneficiaries, benefits package, providers, and financing in the selected countries. For this purpose, differences and similarities between the countries were compared based on the information extracted from the comparative tables. Framework analysis was used to analyze the data, and the data analysis was performed using comparative analysis tables, which compare the components of elderly LTC.

3. Results

3.1. The Feature of the Selected Countries

Among the selected countries, Japan had the highest life expectancy (84.6) and the highest ratio of the population aged 65 or above (28%). On the other hand, Iran had the lowest life expectancy (76.7) and the lowest proportion of the population aged 65 or above (6.4%) among other countries. Also, about the fertility rate (birth per woman), Korea had the lowest (1.09), and Iran had the highest rate (2.15). Regarding the old-age dependency ratio (65+/20 - 64), Japan had the highest ratio (51%), and Iran had the lowest ratio in this index (10.2%) (22). Regarding the number of LTC beds in LTC facilities or hospitals, Sweden (66.4) had the highest number of beds per 1000 people aged 60 or

Table 1. The Selection Process of Countries

	National Health Service (England, Sweden, Italy, Newzealand, Greece)	National Health Insurance (Canada, Australia, Republic of South Korea, Thailand)	Social Health Insurance (Germany, France, Netherlands, Austria, Japan, Switzerland)
Population aged 65 or above (% of the total population	Italy, Greece, Sweden, Portugal, Latvia	-	Japan, Germany, Croatia, France
Development rate			
Developed	Sweden, Denmark, Finland	Canada	Japan, Germany, France
Developing	Iran, Turkey	Republic of South Korea, Thailand	Egypt
Selected countries	Sweden, Turkey, Iran	Republic of South Korea, Thailand	Japan, Germany, France

above, and Turkey had the lowest rate of beds per 1000 people aged 60 or above (8, 26). No official statistics were available for this index in Iran and Thailand. Sweden had the highest percentage of LTC spending at 3% of GDP (3.2%) (27). Statistics on LTC spending were not found for Iran, Thailand, and Turkey (Table 2).

3.2. Beneficiaries: Who Uses LTC?

The first component of an LTC system discusses who uses its services. One of the key dimensions of any LTC system is determining eligibility criteria for LTC benefits and services. Among the selected countries, most countries developed the eligibility criteria exclusively based on the need for LTC and age, regardless of financial status or other variables. Only Turkey considered a means test in addition to the need for care. Sweden and Germany did not consider age (28). Due to limited access to LTC and the lack of an LTC system in Iran, no criteria have been defined for determining eligible elderly (20). In Thailand, there was no standard (29).

Concerning the assessment of LTC needs, the majority of the selected countries had standard instruments to identify eligible individuals. Germany designed a five-level instrument to determine LTC needs based on the individual's level in six variables: mobility, cognitive and communication skills, behavioral and psychological problems, self-care, the ability to manage treatment, and social environment with different weight points (30). France used a six-level scale called AGGIR, in which only people in Gir 1 to Gir 4 could receive benefits (31). Sweden made decisions based on the National Standard for Classification of Function, Disability, and Health to determine the level of disability but had no formal and accurate tool for assessing disability (32). Japan had relatively seven care-level categories for assessing physical and mental needs, which were again divided into two types. Care-level 1-5 was for disabled individuals in need of long-term care in basic daily living activities, and levels of support 1 and 2 were for people who could live independently (33). Korea had a six-level care for determining dependency (34). In Iran, the Bartel three-level scale was used to classify the level of needed care (20). In Turkey and Thailand, there were no specific instruments for assessing dependency (28, 29). Regarding the target population of Germany, all age groups were taken into account, but in particular, the population age 60 or above was considered in France and Thailand, while Iran considered the population over 60 (25, 30), and Japan and Korea considered the population over 65. Japan also covered the age group 40-64 years with age-related illnesses, regardless of the income level and access to informal caregivers (Table 3) (14, 35).

3.3. Benefits Package: What Services Are Provided?

As shown in Table 3, there were no standard LTC benefit packages in the selected countries, and each country defined the benefit packages according to its circumstances. The benefits packages in selected countries included both health and social aspects of care with differences in the type of services provided.

In Germany and Sweden, benefits were a combination of in-kind, cash benefits, and informal caregivers' benefits (30, 32). Germany provided benefits to informal caregivers such as health insurance, LTC subsidies, and retirement benefits (23, 30). In Germany, benefits were not based on income, and the benefits were also the same across the country (30). In Japan, Korea, and Thailand, the focus was on providing in-kind benefits. In Japan, services were provided regardless of the income level, and no cash benefits were paid to individuals; direct benefits were paid to family members (14, 33, 36).

In France, too, cash benefits were paid exclusively to the elderly (31). In Korea, in remote areas where the in-kind benefit was not available, cash benefits were paid to people (14). In Turkey, in addition to in-kind benefits, cash benefits were paid to eligible individuals (28). In Iran, for the elderly, there was financial support from various organizations. A program called "empowerment of the elderly" by the Welfare Organization provided in-kind benefits for the purchase of rehabilitation and medical equipment for the

Table 2. Demographic/Health Indicators in Selected Countries

Variable	Country							
	Germany	France	Sweden	Japan	Korea	Turkey	Thailand	Iran
Population 2019, million	83.5	65.1	10	126.9	51.2	83.4	69.6	82.9
Life expectancy at birth total, y	81.3	82.7	82.8	84.6	83	77.2	77.2	76.7
Population Aged 65 or Above (% of Total Population)								
2019	21.6	20.4	20.2	28	15.1	8.7	12.4	6.4
2030	26.2	24.1	22.2	30.9	24.7	9.6	12.3	19.6
Old-age dependency ratio (65+/20 - 64)								
2019	36.1	36.5	35.5	51	22.4	14.8	19.3	10.2
2030	47.7	44.9	40.3	57.7	41	20.8	32.3	15.8
Fertility rate total (births per woman) 2019	1.6	1.85	1.85	1.37	1.09	2.05	1.51	2.15
Long-term care beds in institutions and hospitals (per 1000 population aged 65 or over) 2015	54.4	55.7	66.4	34.3	58.2	8	-	-
Public expenditure on health as percentage of GDP	11.25	11.31	11.02	10.94	7.6	4.22	3.75	8.66
Public expenditure on LTC as percentage of GDP	1.3	1.7	3.2	2	0.8	-	-	-

Table 3. Beneficiaries, Benefits, and Provider Packages of Long-term Care

Variable	Country							
	Germany	France	Sweden	Japan	Korea	Turkey	Thailand	Iran
Beneficiaries of LTC								
Eligibility criteria	Needs-tested	Needs-tested	Needs-tested	Needs-tested	Needs-tested	Needs-tested /means-tested	Needs-tested	-
Assessment LTC tool	5-level care	6-level care (AGGIR)	-	7-Level	6-level	-	-	3-level Barthel scale of ADL
Target population	All ages	60 or over	All ages	Unconditional for those aged 65+ limited to age-related diseases for those aged 40 - 64	65 or older or being younger than 65 and suffering from a "geriatric disease"	65+	60+	60+
Benefit Package of LTC								
Health/social (type of benefits delivered)								
Health	√	√	√	√	√	√	√	√
social	√	√	√	√	√	√	√	√
In-kind/in cash (nature of benefit)								
In-kind	√		√	√	√	√	√	√
Cash	√	√	√	-	-	√	√	√
Providers of LTC								
Formal or informal?	Formal	Formal	Formal	Formal	Formal	Informal	Informal	Informal
Institutional or home-based care?								
Institutional	√	√	√	√	√	√	√	√
In home	√	√	√	√	√	√	√	√
Private or public?								
Public		√		√	√	√	√	√
Private	√	√	√	√	√	√	√	√

elderly. Moreover, older people, defined as poor by the Welfare Organization who needed to be admitted to a nursing home, were exempt from paying the fee (20).

3.4. Providers: Who Provides Services?

As shown in Table 3, all selected developed countries had formally organized LTC for the elderly, while develop-

ing countries, except Korea, did not provide formal LTC but offered it in a fragmented and incoherent manner.

Provided services in most of these countries included institutional care and home care. In Germany, services were provided in the form of home care or institutional care. In-home care included various nursing services and personal assistance (30), and if the beneficiaries chose in-kind services, they had the right to choose providers. The LTC in France was offered in three forms: home care services, home nursing care services, and combined services (care and nursing care). In France, institutional care was provided in three forms: residential homes, nursing homes, and hospital long-term care units, equivalent to acute ward beds and specialized centers for people with Alzheimer's disease or other chronic conditions (37). In Sweden, LTC services included home help in regular housing (home care), special housing (institutional care), day activities, home medical services (home nursing care), meal services, and transportation services (38). Services provided in Japanese LTC were divided into two categories: LTC benefits and preventive benefits. The LTC benefits were divided into three categories: home care, institutional care, and community-based care. Home care included home services, home visits, home baths, home rehabilitation, welfare equipment, daycare, and short-stay care. The three types of institutional care included LTC welfare facilities, LTC health facilities, and LTC medical facilities. In Japan, community-based care included daycare for dementia patients, dementia group homes, and care in specific institutions such as private nursing homes and long-term welfare institutions. Service providers included local governments, semi-public welfare companies, non-profit organizations, hospitals, and for-profit companies, licensed and supervised by the local government (33, 39). In Korea, institutional LTC included LTC hospitals and LTC facilities, and home care services included home care, home nursing, day and night care, short-term care, and welfare equipment. Korean institutions were both for-profit and non-profit (14, 40). In Turkey, institutional mechanisms for LTC were mostly in the form of rest homes, rehabilitation centers, and daycare services in municipal facilities. Home health care also included diagnosis, treatment, follow-up, rehabilitation care, and nursing home care. The private sector provided services for the elderly because public capacity was inadequate, but the services were expensive and available in metropolitan areas. People who, according to a hospital report, needed LTC and could receive care at home, may receive care at a public institution or go to a private institution (28). In Iran, institutional LTC was provided in nursing homes and day and night rehabilitation and care centers to provide educational, rehabilitation, and recreational services, as well as municipality's community-based care (20). In Thailand, institutional LTC was provided in the form of residential homes, assisted living care, nursing homes, LTC hospital, and hospices (29).

In Germany, the Ministry of Health was legally responsible and was the legislator of the LTC system (25), but in France and Sweden, local governments such as municipalities played a major role (32, 37). In Sweden, the responsibility for health and social care services was divided into three levels of government. At the national level, the government's role was restricted to formulating policy goals, legislating, facilitating, and controlling bodies. County councils provided medical care and health services. Municipalities were legally obliged to provide social and housing services (38). In countries such as Iran, Turkey, and Thailand, there was no coordination to provide LTC services, and benefits were provided through a set of sporadic schemes and interventions. Also, in most countries, more services were delivered by a combination of public and private providers. In Germany, for example, providers were both for-profit and non-profit: few of them were in the public sector (30). Providers in Japan included public, private, non-profit, and for-profit organizations, and they were licensed and supervised by the prefectural government (33); however, in Turkey, Iran, and Korea, it was private.

3.5. Financing: Who Pays for LTC?

As shown in Table 4, Germany, France, Japan, Sweden, and Korea used the public financing system with universal coverage to develop their LTC systems. Japan had no private insurance. Iran and Turkey financed LTC more privately and had no insurance mechanism or systematic financing systems for it (20, 28). The LTC insurance in Germany included both social LTC insurance and private LTC insurance. Social LTC insurance covered 90% of the population while private LTC insurance covered 10%, both of which were mandatory and designed with specific benefits. Registration in this insurance was created after the registration in health insurance (14, 30). In France, the financing was mixed and based on the Beveridge and Bismarck models. Families also played an important role in financing. In Sweden, LTC was financed publicly from taxes, cost-sharing, and out-of-pocket payments, and there was no private insurance (31). In France, health/nursing care was financed by health insurance (at home or nursing homes) (37). In Japan, the main insurers were municipalities, half of which were funded by premiums and the other half by public revenue taxes. Individuals could use LTC services covered by insurance by paying a 10% copayment. In people over 65, the premium was deducted from their pensions. In people aged 40 - 64, the LTC premium amount was added to the health care premium (14, 33, 41). Japan's LTC insurance scheme was characterized by what

might be called the still decentralized approach (14, 42). In Korea, the main insurer was the National Health Insurance, where LTC financing was separate from health insurance, but the National Health Insurance managed both to reduce administration costs. The participation rate was 6.55% of health insurance premiums; in other words, every person who participated in health care insurance also paid for the LTC insurance. Financing was a combination of premiums (60% - 65%), tax subsidies (20%), and users' co-payments (14, 40).

3.6. Service Delivery Structure

In Germany, all providers (public, private, for-profit, and not-for-profit) could contract and provide services as long as they met national quality standards. Sickness funds were legally responsible for financing LTC, and the federal states were responsible for providing the infrastructure for LTC (30). In France, the LTC policy was located between different policy-making, health, social, and medical-social sectors and included several government levels: the state, regions, departments, and municipalities. In France, the government defined national health and social policies through legislation, and different levels of territories were involved in the management and financing of these two sectors. Regional and local departments implemented national health policies under government supervision, while decentralized local departments were responsible for social policies. In the elderly care sector, departments had legal responsibility for defining local policies' direction, financing, and implementing the APA, and regulating care services in their territory. Moreover, municipalities could develop special voluntary measures to support the elderly. Local departmental authorities played a key role in defining policies related to the elderly, as well as planning, coordinating, and financing the APA's main part. They also approved licenses for care services and defined pricing policies for nursing homes and home care services (37). At the central government level in Sweden, the Ministry of Health and Social Affairs was responsible for drafting laws on health care, social insurance, and social issues. This law was used as a basis for planning, financing, and providing services (38). In Japan, municipalities acted as the main insurers of LTC schemes. At the same time, the national government played an active and important role in implementing the insurance scheme and determining eligibility and certification of care. It also determined the price of each level of care and service in addition to its contribution to payment. This division of responsibilities between different levels of the government is sometimes characterized as a decentralized yet centralized approach. In Japan, the central government determined individuals' eligibility, the services provided, and the amount spent on services (14, 33). In Korea, the NHI was also responsible for managing the LTC insurance, but supervision and accreditation for institutional LTC were done under the Ministry of Health, Welfare, and Family (14, 40). In Turkey, the law entrusted providing services for the disabled elderly to the Ministry of Family and Social Policy. The Ministry of Health provided medical services, and the Ministry of Labor, and Social Security provided retirement benefits. Like many social services, municipalities were active in providing services to their communities, but since 2014 care services have been delivered by municipalities and other public institutions under the Ministry of Family and Social Policy (28). In Iran, the Welfare Organization was responsible for institutional LTC (20).

4. Discussion

The purpose of this study was to compare the LTC systems between Iran and selected countries using the common framework of LTC systems consisting of four sections: beneficiaries, benefits packages, providers, and financing. The results of this study showed that each of the selected countries had designed their LTC systems according to their circumstances, and there was no agreement about the ideal type of the LTC system (23, 25).

In this study, most countries made the eligibility criteria of the elderly population based on individuals' care needs (30, 42, 43). However, in Turkey, in addition to the needs, the means test was also considered for determining the eligibility of the individuals (28). One of the most important aspects of managing the LTC systems is determining the number of beneficiaries and the basis for calculating the costs and resources required to implement the LTC (44). Eligibility criteria are usually based on dependency but can include other parameters such as age, income, or family status (45). Identifying and selecting beneficiaries is very important, and countries have different approaches to doing this. Despite the heterogeneity, countries have focused on standardizing eligibility criteria, which are important for ensuring transparency and fairness (12, 25). Most developed countries have developed instruments for assessing the needs and determining the level of disability of the elderly, which have evolved. In the past, these instruments were mostly based on physical disabilities, which in recent years have also been based on mental disabilities (25, 30). In the study of Jeon et al., eligibility for LTC benefits was criticized for focusing on physical function (40). A formal and accurate needs assessment was a key aspect of Japan's LTC system (46). In Sweden, there was no formal standardized method for assessing the needs (32), but in developing countries, except South Korea, none had a systematic and accurate instrument to as-

Table 4. Financing of Long-term Care

Country	Variable					
	Public/Private	General Tax	Social Insurance	Compulsory or Voluntary Contributions	Sources of Financing	Health or Social Expenditure (or Other)?
Germany	Public universal long-term care insurance systems		√	Compulsory	Premiums 2.55% of income up to a ceiling	Long-term health care costs covered by social health insurance
France	Pubic		√	Compulsory	Taxes (national and local), social health insurance, families	Long-term health care costs covered by national health insurance
Sweden	Pubic	√		Compulsory	Tax (local) + copayment (3-4%)	-
Japan	Public universal long-term care insurance systems		√	Compulsory	Payroll tax/ General revenue/ Income-related premium	Medical services covered by health insurance
Korea	Pubic		√	Compulsory	Social insurance + government and municipal subsidies (taxes) + copayment	Two separate financing schemes (National Health Insurance and long-term care insurance)
Turkey	Mix	-	-	-	Tax; out-of-pocket	-
Thailand	Mix	-	-	-	Out-of-pocket	-
Iran	Mix	-	-	-	Tax; out-of-pocket	-

sess the LTC needs (20, 28, 29, 47). The results of the study by Sasat et al. (29) showed that due to the lack of standardized instrument for care assessment in Thailand's LTC facilities, there were no target services, no specific criteria for admission, no clear boundaries of provided services, and no specific methods for classifying facilities.

The benefits of the LTC vary widely across countries (48). Regarding the benefits package, all selected countries offered health and social services. The health services included palliative care, nursing, medical services, and social services, including accommodation services and personal assistance (25, 45). Some countries offered the LTC benefits flexibly (49). In Japan, benefits were provided exclusively as in-kind, and cash benefits were not paid to the elderly and family caregivers (41). In France, benefits were cash-only, but in other countries, in addition to in-kind benefits, there were also cash benefits. In Germany, there were cash benefits for encouraging informal caregivers (39). In Korea, cash benefits were rarely seen. Only for the elderly in remote areas who cannot be directly served and, unlike countries such as Germany, cash benefits are not encouraged due to concerns about the possibility of abuse and provision of low-quality care (14). Many countries have set maximum and minimum levels of benefits that strike a balance between coverage and sustainability. Moreover, many countries have defined different levels of benefits for different beneficiaries (25). Tamiya et al. mentioned that there are differences in the benefit packages defined between different countries. For example, a country like Japan acts generously in terms of coverage and benefits according to international standards (39).

Although LTC is formally delivered in developed countries, it is mostly informal in developing countries. In Thailand, the LTC policy emphasizes supporting informal home care and community-based care (20, 28, 36, 48). In the selected countries, LTC is provided both at institutions and homes. In Germany, the central government is responsible for managing the service delivery, but the provinces provide the service infrastructure (49), and municipalities have recently strengthened their role in providing LTC services (50). The WHO recommends that governments must take overall responsibility for the delivery and function of the LTC system (51). Different providers offer LTC services in different countries. In Japan, for example, semi-public welfare companies, non-profit organizations, hospitals, and for-profit companies, which are licensed, supervised, and contracted with the municipalities, provide services (33). In developing countries, the LTC services are often provided by private organizations and charities (20, 29). Sukchareonpong (52) mentioned a limited number of LTC facilities in Thailand, often in a private form with high costs in big cities. Feng (53) stated that government

regulations on LTC are vital because consumers of LTC include a vulnerable population. According to the WHO's recommendation, the health sector's active participation is necessary for designing and establishing an LTC system in each country (11).

In many countries, the financing of medical parts of LTC (medical treatments for dementia and chronic diseases, and in some cases nursing care) is the responsibility of the health insurance (54). The LTC systems with tax-based financings, such as in Sweden, provide universal coverage (55). Also, the LTC funded by separate insurance plans provides universal coverage, such as in Japan, or more partial coverage, such as in Germany and Korea (55). In any of the selected countries, private LTC insurance does not play a major role in financing, but it can complement mandatory public insurance (56). In developing countries, costs are imposed on the elderly and their families due to the lack of an LTC mechanism. In Thailand, around 80 to 100%, and in Turkey, 100% of total LTC costs are paid out-of-pocket (48). There is no formal law on LTC, and the LTC services in these countries are not covered by any national scheme (20, 48). Rhee et al. (14) emphasized that middle-income countries start developing the LTC schemes before aging became a significant problem. Villalobos Dintrans et al. (57), while advocating for an LTC system in developing countries, did not provide any specific guidance on its specific features for designing an LTC system. Still, it has emphasized the health sector's participation in the design and implementation of the LTC system (57).

5. Conclusions

There is no unique model for designing an LTC system, and each country should develop its LTC according to the socio-economic conditions and the main features of its health system. In general, the LTC systems should be designed to ensure integrated LTC that is appropriate, cost-effective, accessible, and supportive of older people's rights. Developing countries must also establish the LTC systems in line with the health system to meet the growing needs of the elderly. Based on the evidence, the establishment of an LTC system can effectively reduce health costs.

Given the growth of the Iranian elderly population over the coming decades and the heavy burden of providing services to this group in the health system, it seems that the establishment of an LTC system should be considered in health sector policies. Therefore, infrastructural measures such as defining an accurate tool to identify the elderly needs, defining the target population, conducting pilot studies on the cost-effectiveness of LTC systems, designing an appropriate model of long-term care system appropriate to the economic/social conditions, defining insurance mechanism, utilizing private sector capacities, and changing the treatment-oriented attitude of policymakers and planners can help develop the LTC systems.

Footnotes

Authors' Contribution: Study concept and design: Mehdi Jafari and Shabnam Ghasemyani. Interpretation of data: Ahmad Ahmadi Teymourlouy and Reza Fadayevatan. Drafting of the manuscript: Shabnam Ghasemyani, Ahmad Ahmadi Teymourlouy, and Reza Fadayevatan. Critical revision of the manuscript: Mehdi Jafari and Shabnam Ghasemyani.

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