

Systematic Review of the Effect of Aging on Health Costs

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Abstract

Population aging is one of the most important economic, social, and health challenges in the 21st century. The increase in the rate of the elderly population increases the risk of health expenses for households with elderly people. The purpose of this study is to determine the effect of old age on health costs. The results of the studies showed that old age can increase these costs by increasing long-term care and home care. However, by reducing the consumption of acute hospital care, it can reduce these types of costs. According to the results, the average health costs of the elderly in the studies reviewed in the United States were reported to be about \$48,101 in 2015. Also, the average costs of inpatient services and the average costs of long-term care and home care were the highest with \$19,003 and \$12,583, respectively. Considering the high costs of hospitalization in the elderly, measures to reduce hospitalization cases such as establishing day care centers and home care instead of hospitalization should be included in the elderly health program as much as possible.

Keywords: Aging, Health costs, Review, Elderly

INTRODUCTION

Aging is not a disease but a vital phenomenon and the natural path of physiological and psychological changes along with different social actions and reactions is exposed [1-3]. The increase in the number of people over 65 years old in societies is increasing, and this increases the demand for health services. The increase in the elderly population is the main reason for the increase in hospital admissions [4, 5]. Also, the progressive increase in the elderly population is more noticeable in developing countries. Based on this, today there is a greater need to provide healthcare and treatment for the elderly [6-8].

The change in the epidemiological pattern of diseases in the middle-aged and old age and the trend towards chronic disease on the one hand, and facing the elderly who are healthy but need health care support, on the other hand, requires serious intervention. Based on this, as the elderly population grows and life expectancy increases, preventive and therapeutic policies should be directed towards maintaining and improving the health level of the elderly population and recognizing the factors that threaten and protect health in their lives [9-11]. It is expected that in the world by 2050, another ten years will be added to peoples' lifespans [12, 13].

The increase in life expectancy to some extent indicates the success of public health interventions, but public health programs must also be responsive to the changes that have occurred. In 1950, the world's elderly population was about 128 million people, in 2016 it was 639 million people, and

according to forecasts, this figure will reach 1.100 billion people in 2025 and more than two billion people in 2050 [14-17]. What was mentioned as the trend of the increase in the elderly population in the world is not important in itself, but the consequences that this increase will have on various social and economic dimensions, including on the resources of the health and treatment sector, are important and require serious study [18, 19]. Since the developing countries are still struggling with the problems caused by development and do not think about the issues related to the aging of the population, they have not made the necessary predictions for the future and suddenly faced the phenomenon of population aging and will end up facing the resulting difficulties [20, 21].

One of the most basic aspects that should be considered in the health sector is the cost of caring for the elderly, which can include the cost of outpatient treatment, hospitalization, medicine, diagnostic tests, and maintenance care at home or nursing homes. The cost burden is related to inpatient and

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emergency treatments [22]. Various studies emphasize the fact that upon entering the old age stage, treatment costs in different sectors and forms will have an exponential trend [23-26]. The rapid aging of the world's population is considered the main factor in increasing healthcare costs [27]. In addition, the growth of long-term care costs, especially in nursing homes, has a faster pace than the costs of acute care in elderly patients, parallel to their age [28].

One of the important concerns related to the issue of population aging is its effects on healthcare costs. The elderly need more health care, including nursing services and other services, and the total health care increases as the percentage of the elderly population in a country increases. Since the resources in the health sector are limited and the needs of society are unlimited, it is necessary to know how to distribute healthcare costs among different age groups to predict healthcare costs in the future. Considering the decrease in the fertility rate, the increase in the aging of the population, and its upward trend, paying attention to the costs of old age should be a priority for managers and policymakers.

Providing appropriate data to make more informed decisions about investment for future actions and to help improve the infrastructure. Without correct and accurate information, the decisions are incorrect and lead the system astray [29, 30]. Experts and policymakers in the field of health believe that planning at the community level will be fully effective if the government is aware of the special needs of the elderly and take appropriate measures at the government level that support and complement the measures at the community level [31]. Considering the importance of the phenomenon of population aging and increasing life expectancy in recent decades, this study reviewed the studies conducted in the field of old age costs.

RESULTS AND DISCUSSION

A review of studies showed that the average healthcare cost for the elderly in the United States in 2015 was about \$48,101. Also, based on the results, after the average costs of the elderly, the average costs of inpatient services and the average costs of long-term services and home care were the highest with \$19,003 and \$12,583, respectively [32-40].

Numerous studies show the different effects of old age on health costs by different cost areas. The results of the reviewed studies showed that old age increases health costs due to long-term care and home care [34, 39]. Other studies show a decrease in hospital and acute care costs due to the reduction in the intensity of this type of care [41-43]. On the other hand, other studies have shown an increase in hospital costs for the elderly due to the prevalence of various diseases in old age [36-38].

Total expenditure from the age of 15 to the time of death increases significantly with increasing life expectancy. Part

of this is due to the sharp increase in home care costs for the very elderly. The costs in the last two years of life had also increased with the increase in life expectancy, and the reason for this was the increase in old age costs, not acute care, but long-term care and home care. Although increasing age is one of the reasons for the increase in the cost of the elderly, the main reason is the increase in the number of elderly [40]. In another study, the cost of care increased with the age of patients, and this effect was due to the increase in the cost of long-term care. Also, due to the increase in long-term care costs in older ages, the cost of official care for women was more than for men, and the effect of age on costs was very significant [34]. Also, the results of a study in 2005 showed that during the year, the increase in costs, especially hospital costs, was higher among older patients [37].

The increase in the elderly population in the future will be a major obstacle to funding health care and services. It will be social and the higher the degree of aging of the population, the more society will face more problems about the elderly [29]. The review showed that the increase in costs, especially hospital costs, was higher in older patients. Various studies emphasize that upon entering the old age stage, treatment costs in various sectors and forms will have an exponential trend. But based on the findings of Alipour's study, age is not a suitable variable for predicting treatment costs, and instead, indicators of morbidity and mortality and remaining time until death are suitable for treatment costs; Although this study did not rule out the effect of age on increasing costs in general. According to the results of the present research, the highest amount of cost after the average general costs of the elderly was related to the average costs of inpatient services and the average costs of long-term care and home care; Average outpatient costs have been the lowest. A study in line with the results of the present study showed that 33% of the total treatment costs are allocated to the elderly group and the length of hospitalization for the elderly was 1.3 times that of other age groups. Also, in another study, even though the elderly had 31% of hospitalizations at the General Department of Health Insurance, they accounted for 33% of the costs, which confirms the relatively high costs of this age group [27].

Aging increases hospitalization costs and increases the number of hospitalization days. Studies show that the deceased elderly have a higher cost than other hospitalized elderly, and the costs of each deceased patient in the last years of life are almost 5 times higher than those of a patient who survives. But other studies show that the cost of the last years of life decreases with age, and the main reason is that the intensity of medical care in such patients decreases with age [41-43]. Contrary to the results of the present study, another study based on information from 10,000 elderly people concluded that the average costs of patients who died in the last years of life are much higher than other patients, but these costs do not change with the increasing age of death [44]. Considering the high costs that are spent on the treatment of elderly patients and their stay in medical centers and

hospitals, it is necessary to pay special attention to internal departments and cardiovascular diseases, which have the highest cost burden, and reduce these costs. In this regard, it is necessary to emphasize prevention programs and turn to cheaper alternative methods, including providing services outside the hospital, such as home care and nursing service centers, so that the existing hospital capacities can provide optimal inpatient services to the elderly [42].

CONCLUSION

The growth of long-term care costs, especially in nursing homes, is faster than the costs of acute care in elderly patients, parallel to their age. It seems that elderly people over 85 years of age need long-term care at home (LTC: Long-Term Care) or nursing homes more than they need treatment and hospitalization. Deceased elderly people have higher hospitalization costs than other hospitalized elderly people, so it is necessary to expand long-term care centers for the elderly, especially the elderly over 85 years old and the elderly who are in the final stages, with appropriate support and insurance coverage to reduce their hospital costs. Considering the chronic disease pattern among the elderly, and the high cost of healthcare services, planning in this direction is necessary. Considering the high costs of hospitalization in the elderly, measures to reduce hospitalization cases such as setting up daycare centers and home care instead of hospitalization and insurance support should be included in the elderly health program as much as possible.

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