Visual Analytics of Long-Term Care Resource Utilization in Taiwan

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ABSTRACT

This article describes how the phenomenon of an aging population in Taiwan has become increasingly evident in recent years as the elderly population dependency ratio has gradually risen. Therefore, a study on long-term care (LTC) resources has been a key issue that had needed discussion. Currently, Taiwan’s government has enacted legislation and policies related to LTC, but most of them involved institutional care. The traditional idea of most elderly is aging in place, so this study has become very necessary. The study analyzed the Open Government Data of LTC to discuss the home care service resource utilization with regard to LTC.

KEYWORDS

Home Care Services, Long-Term Care (LTC), Medical Resources, Open Data, Visualization

1. INTRODUCTION

A rapidly aging population is a general phenomenon of the transitioning population structure occurring around the world. Nevertheless, the speed of aging varies from country to country (Kinsella & Wan, 2009). The population of the elderly will continue to increase rapidly from 2014 to 2025. The population of people 65 years and older will reach 20 percent by 2025, nearly double that in 2015 (Hsieh & Chen, 2017). Furthermore, with the increasing ages of the elderly, more chronic diseases will occur, and the physical and mental defects of some disabilities will subsequently influence the public health issues of national medical treatment, and increase demands of nursing care and long-term care (LTC) (Guralnik, Fried, & Salive, 1996). The inadequate self-care ability of the elderly aged/disabled is the primary cause for needing LTC, and the worse the self-care situation is, in general, the greater the need is for LTC. According to the study (Lin, 2015), the elderly lacking self-care ability in mainland China started to increase gradually in 2011 and it will keep increasing until 2030, which means mainland China is going to face the biggest challenge regarding LTC. Nevertheless, other countries with aging populations are also going to face the challenges of providing elderly care and addressing their living problems.

Taiwan has been predicted to outpace other countries worldwide in its proportion of elderly to total population by 2060. Therefore, Taiwan needs to improve its LTC plan. Due to traditional ideas, most seniors expect to age in place (Lin, 2015); thus, this study discussed the home care resource situation and aims to provide government information related to the issue so that resources can be better allocated to areas with deficiencies. With the increasing needs of LTC in aging society, this study investigates resource utilization of LTC services. In order to draw attention to this research, in addition to the formulation of laws and regulations, it is suggested that the government should also take more care workers’ training so as to maintain the quality of care.

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2. LITERATURE REVIEW

A. Population aging issue

With the increasingly aging population, the incidence of chronic diseases will also rise. Furthermore, the family structure miniaturization of our country and increased female participation in the workforce have led to the reduction of human resources in family care, and thus the elderly and LTC need the nation’s key polices (Wang & Tsay, 2012). The government needs to invest in multiple care services, including short term, long term, home, community, and institution, so as to satisfy the care demands of the elderly with different physical statuses. Meanwhile, attention must be paid to training care workers since considerable patience is needed to care for the disabled and people who have difficulty moving.

2.1. Home Care Services

LTC consists of a wide and complex range, including intermediate nursing skills, assisted living, personal care, daily care, temporary care, and home care, etc. In general, LTC does not include short-term hospitalization (Stallard, 2017). WHO (World Health Organization) defines home care services as “Providing patients integrated health and pillar services in his/her residence, aiming to prevent, delay, or replace the use of temporary or long-term institutional care.” (Knight & Tjassing, 1994). In Taiwan, LTC services provided at home include as follows: physical care services, daily life care services, domestic chores service, food and nutritional services, auxiliary appliance services, necessary home facility adjustment and improvement services, psychological support services, emergency rescue services, healthcare services, services for prevention of other or aggravated disability conditions. Other LTC related services can be provided at home as determined by the central competent authority. In summary, home care services involve the government transferring medical and care services to the home so the elderly and disabled can be cared for in their home, and such care services require the cooperation of the care workers. Therefore, care workers must also be included in the study.

2.2. Care Workers

Care workers, including nurse assistants in nursing homes, resident assistants in assisted living facilities, and home care aides in home health agencies, serve elderly people in need of LTC. Furthermore, LTC serves physically and cognitively impaired people, performing such tasks as bathing, dressing, help on the toilet, and feeding (Ejaz, Noeker, Menne, & Bagaka’s, 2008). Every country is facing the challenges of an aging population, and care workers are an important part of that. However, the poor working conditions, such as low salary and limited career development, will create care workers mobility. A lack of good adaptation and no salary while undergoing on-the-job training are among the mobility factors for home care workers (Yang, 2014), it also pointed out that the operators thought that higher salary was the most important change. A small number of home care workers also expect better welfare (Kemper et al., 2008). As previously mentioned, Taiwan is facing the same problem as many foreign countries. Taiwan has divided care workers into three parts according to the location where care served is given (as shown in Figure 1): there are home, community, and institution. In community type, there are two kinds of service: day care and family care services,

- **Day Care:** Provide a facility for daytime care and nursing services (including medical, nursing, rehabilitation, nutrition, life care and other services), go home at night to enjoy the warmth of the family
- **Family Care:** Provide daytime care in caring-family, go home at night to enjoy the warmth of the family
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