

External Factors Confronting Elderly Day Care in The Aftermath of The Covid-19 Crisis in Bangkok, Thailand

Nakarait Na Pattalung^{a*} Orranuch Chusri^b & Maniga Thongkong^c

^a Faculty of Management Science, Suan Dusit University, Bangkok, 10300 Thailand

^b Faculty of Nursing, Suan Dusit University, Bangkok, 10300 Thailand

^c ARC Condo, Vibhavadi Road, Bang Khen, Lak Si, Bangkok, 10210 Thailand

Abstract

The study aimed to investigate at the external factors affecting elderly day care centers after COVID-19 crisis in Bangkok, Thailand. The research method used was qualitative research, which included a review of the literature and in-depth interviews with three groups of stakeholders in Bangkok: two officers from the government sector, two elderly day care center owners and three caregivers from the private sector and three elderlies and two family members from the community sector. The semi-structured interview questions were open-ended and validated by two experts. The researcher then utilized the content analysis, case study research and PESTLE analysis techniques to examine the factor. Results showed the three perspectives (the government sector, the private sector, and the community sector). The factors that impact elderly care centers vary among different groups of individuals, with the government and private sectors having contrasting approaches. The government has implemented various measures to control the standards of elderly care centers and manage the spread of COVID-19. However, the private sector prioritizes business expansion and service provision, often neglecting government standards. This contrasts with the public sector, which values diverse factors such as standards for care centers, caregiver qualifications, disease control measures, service fees, convenience and the quality of services provided by the centers. In conclusion, elderly day care centers can better adapt to the challenges posed by the COVID-19 crisis and provide improved care for the elderly by enhancing affordability and integrating technology. Government should focus on improving certification standards and creating supportive living environments for the elderly.

Keywords: Elderly day care, COVID-19, PESTLE analysis

* Corresponding Author

e-mail: Nakarait_nap@dusit.ac.th

Introduction

In the current global situation, Thailand entered an ageing society since 2010. The number of people aged 60 and above accounted for 14% of population (or 9.6 million people) (Population Division of United Nations, 2019, 2020). The Bangkok metropolitan region was home to the majority of the elderly, accounting for 19.83% of the total population (Department of Older Person, 2021). As a result, there are a total of 830 elderly care facilities, both public and private, across the country. These include elderly day care centers for the elderly and nursing homes (Chaiwipath, 2018).

The difference between these two types of businesses was that "elderly day care center" was a service that provides care for seniors, allowing them to continue living in their own homes or with their families while receiving occasional care and assistance as needed. The primary objective of developing day care centers for the elderly was to assist those with limitations in performing daily activities when they were at home or in the community, thereby reducing the caregiving burden on family members (Wongfoo, 2019).

In general, elderly day care was provided by both public and private sectors with different objectives. The Thailand Department of Senior Services promoted elderly daycare through elderly schools during daytime while the private sector mainly provided assisted living. Private developers were increasingly interested in elderly daycare since it has been recognized that these centers can form relationships within a community (Laongkul, 2019).

On the other hand, a "nursing home" was a long-term care facility for elderly individuals who were not severely ill to the point of requiring hospitalization but cannot stay at home. Nursing homes offered around-the-clock nursing care services and were equipped to provide skilled medical care to residents (Subchoktanakul, 2014).

At the same time, Thai government sector emphasized elderly care and related businesses. For example, the Department of Health Service Support oversaw registering aged care facilities and certifying caregivers for the elderly (Department of Health Service Support, 2021). The Department of Health has also created educational standards for elderly care (Department of Health, 2014).

In 2019, the world faced the outbreak of the COVID-19 pandemic, resulting in a global infection of up to 200 million people and causing the loss of 4 million lives (Worldometer, 2021). In Thailand, a total of 91,779 elderly individuals were infected with COVID-19 from the year 2020 until August 27, 2021 (Department of Older Person, 2021). Research indicated that the elderly had a significantly higher risk of mortality compared to other age groups ($P = 0.025$). Furthermore, a study conducted in Australia found that out of 886 reported deaths, 75% of total were elderly individuals residing in nursing homes (Lim et al., 2020).

The high number of deaths in nursing home attributed to several factors. Firstly, caregivers lacked sufficient knowledge, training and resources to effectively manage and care for individuals in the context of a pandemic. This included inadequate access to personal protective equipment (PPE) and a shortage of staff to meet the demands. Additionally, caregivers were required to have close contact with the elderly assisting with personal hygiene and cleaning, which puts them at higher risk of infection. Consequently, caregivers could easily become carriers of the disease and transmitted it to other elderly individuals (MC, 2020; Sookprecha, 2020). As a result, elderly care facilities should implement an infection control policy to prevent and stop the transmission of COVID-19 to the elderly.

Therefore, the Department of Disease Control had implemented measures to prevent the spread of COVID-19. In these measures, the elderly in day care centers were required to temporarily self-isolate and both the elderly and their caregivers should receive COVID-19 vaccines as quickly as possible. Additionally, maintaining hand hygiene, practicing social distancing and minimizing close contact with the elderly were strongly encouraged (Department of Health, 2020).

Consequently, various businesses, including elderly day care centers, had to adapt with the new legislation. These changes included the temporary shutdown of day care centers, according to regulatory guidelines and implementing the "new normal" in new daily routines. (CDC, 2021; social care institute for Social care institute for excellence, 2020a).

Some business used to utilize medical technologies, e.g., Telehealth services and virtual meal clubs to provide healthcare access and simulate realistic dining experiences for the elderly. These technologies allowed seniors to communicate with healthcare experts and the day care center remotely, eliminating the need for physical contact and lowering the danger of infection in order to guarantee the elderly's well-being and providing ongoing access to care and assistance (Social care institute for excellence, 2020a, 2020b; TOT, 2019).

However, after COVID-19, the researcher found that home quarantine caused elderly to feel lonely and anxious (Hunter, 2021) and can contribute to the development or worsening of depression and pre-existing conditions (Adams, Sanders, & Auth, 2004; Tomaka, Thompson, & Palacios, 2006). Furthermore, elderly wanted to meet their friends at the care center like they used to (Hunter, 2021). On the other hand, during and after COVID-19, caregivers, whether hired or family members, must make significant sacrifices and exert great effort to take care of the elderly, leading to accumulated stress and exhaustion (Supaporn, 2021).

Pasinee's study discovered a business model for elderly daycare services that employed PESTLE analysis to analyze the results, although the research was conducted only during the COVID-19 crisis (Roongruengratanakul, 2019). PESTLE analysis is a valuable tool for assessing the external environment (political, legal, economic, social, technological and environmental factors) in which research takes place, enabling researchers to make informed decisions and navigate challenges and opportunities effectively (Fosher, 2018; The University of Sydney, 2022).

However, there were no researchs about elderly day care in the aftermath of the covid-19 crisis in Thailand. Therefore, the goal of this research was to investigate at the factors confronting elderly day care centers in the aftereffects of the COVID-19 crisis to assist develop the day care business.

Materials and methods

1. Research method

The method was three stages of qualitative research as content analysis and case study research.

- Stage 1: literature review: searching the elderly day care center in Bangkok, Thailand by searching websites, journal publications, conference proceedings and governmental reports.

- Stage 2: stakeholder analysis: in-depth interviews with three group of 18 stakeholders (the government sector, the private sector and the community sector) last around 30-60 min.

- Stage 3: analysis the data: analyze the data from stage 1 and interview results in stage 2 using the PESTLE analysis. The PESTLE method was chosen because it provides various advantages in examining the external variables affecting a specific business or industry, such as strategic planning and policy creation (The University of Sydney, 2022). The study used all samples as the target group to fulfil the needs of stakeholders.

2. Sample size and sampling technique

The researcher selected three elderly day care centers by using purposive sampling technique in Bangkok, Thailand, because Bangkok has the most elderly day care centers (Ministry of Commerce, 2021) and the majority of the elderly live in Bangkok (Department of Older Person, 2020). Because of the character of qualitative research, the sample size selected must provide sufficient information until saturation is reached, or no new themes or patterns emerge (Carolyn Feher Waltz, 2010; Malterud, 2001; Patton, 2002; Sandelowski, 2000). The sample was selected by purposive sampling and was divided into three groups within mind that not every invitation was accepted:

- The government sector as legislators: 2 officers in Department of Health Service Support, Department of Health, or Department of Disease Control

- The private sector as service providers: 3 elderly day care center managers or owners and 3 caregivers.

- The community sector as customers: 5 elderlies and 5 family members

3. Data collection

There was just stage 2 in which human data must be collected. Data collection process will be conducted at elderly day care center in Bangkok and at Department of Health Service Support, Department of Health, or Department of Disease Control. Research tools in stage 2 were

3.1 Socio-demographic form: the sociodemographic form collected demographic information from the participants, such as age, gender and income which descriptive statistics for the socio-demographic data of the participants. The data presented in frequency.

3.2 Semi-structured interview form: The questions were open-ended, which allowed for discussion that might lead to further information. Two experts in health informatics and business management reviewed a semi-structured interview form which included 5 open-ended questions to cover all PESTLE factors. The questions topic were the basic needs, the suggestion, the environment factor, the opinion about elderly day care center during COVID-19 crisis and aftermath, and other factors.

4. Ethical Considerations

Before collecting data, the researcher offered adequate information to interviewees for decision-making, which has full components according to the criteria and is intelligible. Because this study employed stakeholder analysis via in-depth interviews utilising a semi-structured questionnaire. The researcher allowed to ask questions and can adjust them to each individual.

As a result, if the interviewee was uncomfortable with certain of the questions, the researcher was cautious while asking them. The researcher inquired in a nice, friendly tone and stopped asking after the volunteers stated their discomfort. The subject can withdraw from the study at any time by informing the researcher at the address provided and signing a withdrawal confirmation form.

The researcher assured confidentiality, the privacy of interviewee data and the privacy of information. Volunteer-related information was not made available to the public. The data was only visible to the researcher. Following the end of the research, the researcher deleted the research data, whether in writing or in other forms.

Results and discussions

Data were collected from 12 key persons at 2 elderly day care centers. The persons were as followed: 2 officers, 2 elderly day care owners, 3 caregivers, 3 elderlies and 2 family members. See socio-demographic data in table 1. However, the number of interviewees (elderly day care owners, elderlies and family members) did not meet expectations, which might be due to the customer's preference not to utilize the day care.

Table 1 Socio-demographic data (n=10)

Socio-demographic data	The government sector	The private sector	The community sector
Age (years)			
41-50	1	2	1
51-60	1	2	1
61-70		1	3
Gender			
Male	1		2
Female	1	2	3
Income (bath per month)			
10,001-20,000			3
20,001-30,000	1	1	1
30,001-40,000	1	2	1
40,001-50,000		2	

Particularly the fact that the results were based on the narratives of individuals and their perspectives. The potential for bias or inaccuracies in the information provided by the participants should be acknowledged. The subjective nature of narratives could introduce personal opinions, individual experiences and potential misinterpretations of facts.

However, despite these limitations, the study was able to incorporate a diverse range of perspectives from different sectors, including the government, private sector and community. This inclusion of multiple viewpoints provided a more comprehensive understanding of the issues surrounding elderly day care centers. By considering different perspectives, the study offered insights into the various factors and challenges faced by each sector.

Therefore, the PESTLE analysis result divided into three perspectives that have an impact on the utilization of services at elderly day care centers (see result in table 2).

Table 2 PESTLE analysis result

PESTLE	The government sector perspective	The private sector perspective	The community sector perspective
1. Political and Legal			
1.1 Supporting	- Government supported the elderly	- All elderly day care center must be registered and certified.	- 99% of the population had health insurance coverage

1.2 Relevant laws	<ul style="list-style-type: none"> - The Hospital Act of 1998 (elderly hospital) - The Hospital Act of 2016 (licensed aged care institutions and caregivers) 	<ul style="list-style-type: none"> - Infection control policies - Measures to Control and Supervise the Provision of Elderly Care Services at the Homes of Service Recipients, B.E. 2564 	<ul style="list-style-type: none"> - Infection control policies. - After COVID-19, community sector said the day care center did not follow Infection
2. Economics	<ul style="list-style-type: none"> - High levels of economic inequality. So, majority of Thai citizens was poor 	<ul style="list-style-type: none"> - During COVID-19, the day care lose money - After COVID19, the elderly day care center income increased by 79% because of foreigner. - Few Thai customer came to elderly day care center 	<ul style="list-style-type: none"> - Uneven access to public services was persisted - After COVID-19, interest in collaborating with an elderly day care center on health insurance was rising
3. Socials	<ul style="list-style-type: none"> - Aging society was rising - Majority of elderly residing in Bangkok 	<ul style="list-style-type: none"> - Less certified elderly caregiver was persisted 	<ul style="list-style-type: none"> - Majority of the elderly living alone - After COVID-19, most elderly had deteriorated mental health
4. Technologies	<ul style="list-style-type: none"> - Before COVID-19, pilot project to integrate new technology to improve care and services for the elderly 	<ul style="list-style-type: none"> - During and after COVID-19, most day care did not use health technologies in their business, but some businesses use health technologies 	<ul style="list-style-type: none"> - During and after COVID-19, elderly stated feature phone is easier to use than smart phone
5. Environment	<ul style="list-style-type: none"> - Thai government wanted Thailand to be Medical Hub 	<ul style="list-style-type: none"> - Most elderly care centers are in Bangkok (37.53% of the total) 	<ul style="list-style-type: none"> - Thailand lacked elderly living environment

1. The government sector perspective (Department of Health Service Support, Department of Health, and Department of Disease Control)

1.1 Political and Legal

The Thai government placed a premium on caring for and supporting the elderly (Ministry of Public Health, 2020). The Hospital Act of 1998, for example, required the renovation of aging hospitals (Government Affairs Coordination Division, 2020). Moreover, the Hospital Act of 2016 required aged care institutions and caregivers to get licensure (Department of Health Service Support, 2016a). So, government agencies controlled and regulated the standards of elderly care centers such as the Department of Health Service Support, which was responsible for registering elderly care centers and certifying caregivers (Department of Health Service Support, 2021) and the Department of Health, which developed training courses for caregivers (Department of Health, 2014; Department of Older Persons, 2019). According to one officer in the Department of Health Service Support, "almost day cares participated in the policy, but they did not comply with the Act." As a result, just a few day care centers were accredited."

1.2 Economics

According to the 2018 Credit Suisse Global Wealth Report, under 1% of the Thai population possessed 66.9% of the country's wealth (The Credit Suisse, 2018). Thailand also had a Gini index of 0.90. The Gini index evaluated economic inequality and had a number ranging from 0 to 1, with 1 being the highest level of inequality. (Worldbank, 2021). According to Credit Suisse statistics and the Gini index, Thailand had significant levels of economic inequality. According to one officer in Department of Health said, "he saw the impoverished in Thailand were plentiful." And impoverished people cannot afford adequate healthcare or food."

1.3 Socials

In 2020, Thailand had approximately 11.6 million elderly people, with the majority residing in Bangkok, accounting for 19.83% of the total elderly population (Department of Older Person, 2020).

1.4 Technologies

Since 2019, the Ministry of Higher Education, Science, Research and Innovation, in collaboration with the Department of Older People, ran a pilot project to integrate new technology to improve care and services for the elderly at Baan Bang Khae, an elderly care center. For instance, a health data management system, a location tracking system for the elderly with cognitive impairment, or a portable health check-up equipment (Thai Health Reform Foundation, 2021).

1.5 Environment

The Thai government launched attempts in 2015 to create Thailand into a worldwide healthcare centre known as the "Medical Hub." As a result of being a Medical Hub, Thailand's healthcare service industry grew steadily, with a rising number of overseas patients seeking medical attention. The total number of international patients reached 1.2 million visits, generating more over 107 billion Baht in income (Department of Health Service Support, 2016b).

2. The private sector perspective (caregivers and elderly day care centers officer)

2.1 Political and Legal

According to Department of Health Service Support regulations, all elderly day care centers must be registered and certified. Nevertheless, there were only two certified elderly day care centers, which were situated in Health Districts 4th and 6th. As a result, the elderly day care centers in Bangkok were not certified (Elderly Care or Care for Persons with Disabilities Businesses, 2022). However, uncertified the elderly day care centers in Bangkok drove to increase the quality of care. According to two elderly day care owners, "they were trying to improve their business in order to be certified."

Until the COVID-19 outbreak in 2019 and after COVID-19 crisis, the Thai public, government agencies and elderly care center worked together to keep the virus from spreading. Infection control policies were developed, such as the temporary closure of elderly care center, infection screening, building and facility organization and frequent cleaning of premises (Department of Health, 2020). According to two elderly day care owners, "they put alcohol spray and temperature meter at the front door and give face masks given for free to caregivers, officers and customers."

After COVID-19, the government implemented a regulation named "Measures to Control and Supervise the Provision of Elderly Care Services at the Homes of Service Recipients, B.E. 2564" (The Department of Health, 2021) that allows caregivers to visit senior homes to provide care, allowing the elderly business to provide a new service type.

The government and community sectors were concerned about the standardization of elderly day care (Department of Health Service Support, 2016a, 2021). However, the private sector faces challenged in meeting official certification requirements, both for the centers themselves (Department of Health, 2020) and the caregivers (Elderly Care or Care for Persons with Disabilities Businesses, 2022). Standardization efforts were crucial to maintain quality and safety across all elderly day care centers, regardless of sector.

2.2 Economics

Even in the face of the COVID-19 epidemic, Thailand's elderly care center lose money. One participant as caregiver stated that "during COVID-19 home quarantine caused the center to lose money, causing the business owner to become more stressed". Also, two caregivers stated that "they were afraid of losing their jobs." After COVID-19 crisis, the elderly care center increased by 79% in 2021, bringing to a large gain in income. Furthermore, foreign nationals expressed an interest in investing in elderly care (Ministry of Commerce, 2021). According to one participant, the business of elderly care expanded since the COVID-19 slowdown because people, particularly the elderly, were increasingly concerned about their health.

2.3 Socials

According to statistics from 2022, there were 9,985 applications for registration as caregivers in Thailand. Nonetheless, only 7,147 people were granted licenses, accounting for 71.57% of all applications (Elderly Care or Care for Persons with Disabilities Businesses, 2022). Meanwhile, the total number of elderly people in Thailand is expected to reach more than 11.6 million (Department of Older Person, 2020). All participant as caregivers stated that "the quantity of skilled caregivers falls short of the demand for elderly care."

2.4 Technologies

There were several technologies available to help the elderly, including telehealth, which allowed older people to receive healthcare remotely (Doraiswamy, Jithesh, Mamtani, Abraham, & Cheema, 2021),

conversational robots which helped the lonely elderly (Marius, 2019) and wearable devices that detected heart rate and sent data to cellphones for remote monitoring, such as AliveCor (Kruglyak, 2020). According to two elderly day care owners, “there were not use these technologies in their business.”

2.5 Environment

According to statistics from 2021, most elderly care centers were in Bangkok, accounting for 37.53% of the total. The central region of Thailand followed closely at 28.4%. The northern region represented 14.20%, while the eastern region accounts for 8.72% (Ministry of Commerce, 2021). In total, there were 830 elderly care facilities throughout the country. These businesses cater to both Thai elderly individuals and foreigners residing in Thailand (Chaiwipath, 2018).

3. The community sector perspective (the elderly and family members).

3.1 Political and Legal

In Thailand, approximately 99% of the population had health insurance coverage, including Universal Health Care Coverage Scheme (UHCS), Social Security Scheme (SSS) and Civil Service Medical Benefit Scheme (CSMBS). These schemes provided coverage for basic healthcare needs (National Health Security Office, 2013; Pongpisut Jongudomsuk, 2015; The Ministry of Finance, 2010; The Ministry of Labour; World Health Organization, 2016). Several participants stated that “they desired for health insurance collaboration with an elderly day care center.”

Furthermore, because of COVID-19 infection, participants stated that “they expected business owners to emphasize cleanliness and maintain good public health standards to avoid the spread of COVID-19”. All community sector participants did, however, said that “after COVID-19, the elderly day care center is no longer stringent about infection control.” The government sector and community sectors values various measures to control the spread of COVID-19 (Department of Health, 2020) which related with Manachanok Chaiyarat study (Chaiyarat, 2019).

3.2 Economics

Thailand's population were not access to public services due to large economic inequality. This disparity extended to a variety of areas, including education, healthcare, transportation, the environment, food access and many occupations (Lynch et al., 2004). Those living in poverty, for example, had poorer health outcomes and less access to healthcare services than richer persons related with Jongudomkarn's research (Jongudomkarn, 2019). Therefore, several family members said that “they had not utilized an elderly day care center because they could not pay the service charge.” However, some elderlies stated that “they want to go to elderly day care but they did not have money.”

The affordability of the service fee becomes a barrier for many families which related with Darunee Jongudomkarn study (Jongudomkarn, 2019). As a result, numerous participants showed an interest in collaborating with an elderly day care center on health insurance. To address the requirements of elderly and their families, “the government and elderly day care center owners must guarantee that elderly day care services are accessible and affordable.”

3.3 Socials

The elderly living alone was predicted to continue. This shift in cultural standards resulted in new family arrangements in which children lived with their spouses and were separated from their parents. They do, however, visit and spend time with their parents when they have spare time (National Statistical Office, 2017). After COVID-19 crisis, all participants as elderlies indicated that their mental health had deteriorated during the home quarantine due to their fear about the virus and their health, their desire to see friends and family and the extra pressure of losing money. They said “they depressed and wanted to go outside to meet their friend.”

The mental health is very important for all sectors, including, elderlies, family members, caregivers and business owners which related with many studies (Adams et al., 2004; Hunter, 2021; Supaporn, 2021; Tomaka et al., 2006). Therefore, it is crucial to integrate mental health support into the overall care framework of elderly day care centers. This can involve implementing mental health screening and assessment, providing access to counseling services, promoting social engagement and fostering a supportive and inclusive environment for all individuals involved.

3.4 Technologies

Among mobile phone users, the age group with the highest smartphone usage was the 15-24 age group, accounting for 98.8%. The age group with the highest feature phone usage was the 50 and above age group, accounting for 32.1% (National Statistical Office, 2020). Elderly participants stated that “feature

phone is easier to use, and they loved it.”

3.5 Environment

Participant stated that it was critical to ensure that the living environment was compatible with the lifestyle of the elderly. All family members remarked that "they wished Thailand's government could provide living environments for the elderly in the same way that Japan did." These covered the residential setting as well as numerous facilities, a barrier-free design, consistent floor levels, dedicated relaxation zones, and pathways to suit wheelchair users.

Conclusion

This study delved into the multifaceted perspectives of the government sector, the private sector and the community sector about elderly day care in Thailand. These diverse perspectives shed light on the complex interplay of political, legal, economic, social, technological and environmental factors that shape the landscape of elderly care services in the country. The following key findings and implications can be drawn from the analysis of each sector's viewpoint.

From the government sector perspective, it was evident that there was a concerted effort to regulate and standardize elderly care services through legal and policy frameworks. The government's focus on supporting the elderly was commendable, but challenges persisted, including a shortage of accredited care centers. Economic disparities within the country, as highlighted by the Gini index, posed a significant hurdle to ensuring equitable access to healthcare for all elderly citizens. The government's aspiration to become a global healthcare hub had implications for the healthcare industry's growth.

The private sector's viewpoint provided insights into the economic dynamics of elderly care services. The sector had experienced growth, particularly in the wake of the COVID-19 pandemic, which heightened concerns about health among the elderly. However, challenges related to certification and caregiver shortages persist.

The community sector perspective highlighted the importance of health insurance collaboration with elderly day care centers. The shift in family structures, with children living separately from their parents, underscored the significance of mental health and social well-being among the elderly. The accessibility and affordability of services were key concerns for families and collaboration with health insurance providers saw as a potential solution.

Technological adoption varied among sectors, with the government showing a willingness to integrate technology into elderly care, while the private sector lags. The preference for feature phones among the elderly suggested the need for user-friendly, accessible technology solutions.

Finally, the environment in which elderly care services were provided plays a crucial role. Creating living environments that cater to the needs of the elderly, as seen in Japan, was an aspiration shared by many family members. This included barrier-free designs and wheelchair-accessible facilities.

In summary, addressing the challenges and disparities in elderly care in Thailand requires a multi-faceted approach that involves collaboration between the government, private sector and the community. This collaboration should focus on improving certification standards, enhancing affordability, integrating technology and creating supportive living environments for the elderly. Additionally, a strong emphasis on mental health and social well-being should be a priority for all stakeholders involved in elderly care services. These findings can guide future policy and practice in the field of elderly care in Thailand, ensuring a more inclusive, accessible and supportive environment for the aging population.

Acknowledgment

The authors gratefully appreciated the financial support provided by Thailand Science Research and Innovation Fundamental Fund 2023 and Suan Dusit University through the study grant. In addition, we would like to thank all research participants.

References

- Adams, K. B., Sanders, S., & Auth, E. A. (2004). Loneliness and depression in independent living retirement communities: risk and resilience factors. *Aging Ment Health*, 8(6), 475-485.
- CDC (2021). *COVID-19 Guidance for Adult Day Services Centers*. Retrieve November 21, 2022, from <https://www.cdc.gov/aging/covid19/adult-day-care-service-centers.html>

- Chaiwipath, V. (2018). *Elderly care business in Thailand*. November 21, 2022, Retrieve from https://kasikornbank.com/international-business/th/Thailand/IndustryBusiness/Documents/201811_Thailand_Elderly_TH.pdf
- Chaiyarat, M. (2019). *Consumer Behavior during COVID-19 Situation in Bangkok*. November 21, 2022, Retrieved from <https://mmm.ru.ac.th/MMM/IS/vlt15-1/6114993677.pdf>
- Department of Health. (2014). *Guidelines for Training Elderly Caregivers - 420-hour Course*. November 30, 2022, Retrieved from https://eh.anamai.moph.go.th/web-upload/10x2f8665bc5c6742a30312c81435ca284e/202102/m_news/33518/201581/file_download/e91b41e95b3a488350e43ba0778c0f99.pdf
- Department of Health. (2020). *Recommendations for Elderly Care Facilities in Preventing the Spread of COVID-19*. November 30, 2022, Retrieved from https://covid19.anamai.moph.go.th/web-upload/2xdccaaf3d7f6ae30ba6ae1459eaf3dd66/m_document/6736/34141/file_download/262d2321ba58b3a21358ee483fa29898.pdf
- Department of Health Service Support. (2016a). *Hospital Act of 2016*. December 2, 2022, Retrieved from <http://www.ratchakitcha.soc.go.th/DATA/PDF/2559/A/107/41.PDF>
- Department of Health Service Support. (2016b). *Thailand's Strategy to Develop as an International Medical Hub (BE 2560-2569)*. December 2, 2022, Retrieved from <https://hss.moph.go.th/fileupload/2560-102.pdf>
- Department of Health Service Support. (2021). The process of applying for registration as a caregiver. Retrieve January 10, 2023, from <http://www.esta.hss.moph.go.th>
- Department of Older Person. (2021). COVID-19 infected elder in Thailand. January 10, 2023, Retrieve from <https://www.dop.go.th/th/know/side/1/1/857>
- Department of Older Persons. (2019). *Announcement of the Department of Older Persons: Standards for Elderly Care Training Courses*. January 10, 2023, Retrieved from <https://dl.parliament.go.th/backoffice/viewer2300/web/viewer.php/>.
- Department of Older Person. (2020). *Thai elderly statistics in 77 provinces (December 31, 2020)*. January 12, 2023, Retrieve from <https://www.dop.go.th/th/know/side/1/1/335>
- Department of Older Person. (2021). *Thai elderly statistics*. January 12, 2023, Retrieve from <http://www.dop.go.th/th/know/1>
- Doraiswamy, S., Jithesh, A., Mamtani, R., Abraham, A., & Cheema, S. (2021). Telehealth Use in Geriatrics Care during the COVID-19 Pandemic-A Scoping Review and Evidence Synthesis. *Int J Environ Res Public Health*, 18(4).
- Elderly Care or Care for Persons with Disabilities Businesses. (2022). *List of certified elderly care centers*. January 12, 2023, Retrieve from <https://esta.hss.moph.go.th>
- Fosher, H. (2018). *Understanding the Marketing and Management of trails using PESTEL Analysis*. (Master's Theses and Capstones.). University of New Hampshire, (1183)
- Government Affairs Coordination Division. (2020). *Summary of the Cabinet Meeting on Tuesday, 2nd June 2020*. January 10, 2023, Retrieve from <http://www.gad.moi.go.th/cabinetpdf/4-6-2563.pdf>
- Hunter, M. (2021). *Closing of Adult Day Care Centers Causing Cascading Hardships for Families*. January 13, 2023, Retrieve from <https://spectrumlocalnews.com/nys/capital-region/news/2021/03/17/closing-of-adult-day-care-centers-causing-hardships-for-families->
- Jongudomkarn, D. (2019). Isan Family Well-Being: Suffering and Happiness on Poverty: Isan Family Well-Being. *Journal of Nursing Sciences and Health*, 42(2), (62-73).
- Kruglyak, I. (2020). *10 Brilliant examples of wearables in healthcare*. January 16, 2023, Retrieve from <https://www.avenga.com/magazine/wearables-iot-healthcare/>
- Laongkul, M. (2019). *Thailand elderly daycare: the perception and decision criteria of thai people*. (Unpublished Master of Science Program in Marketing thesis). Thammasat University, Thammasat University.
- Lim, W.-S., Liang, C.-K., Assantachai, P., Auyeung, T. W., Kang, L., Lee, W.-J., . . . Arai, H. (2020). COVID-19 and older people in Asia: Asian Working Group for Sarcopenia calls to action. *Geriatrics & Gerontology International*, 20(6), 547-558.
- Lynch, J., Smith, G. D., Harper, S., Hillemeier, M., Ross, N., Kaplan, G. A., & Wolfson, M. (2004). Is income inequality a determinant of population health? Part 1. A systematic review. *The Milbank quarterly*, 82(1), 5-99.
- Marius, E. (2019). *6 Ways AI and Robotics Are Improving Healthcare*. January 20, 2023, Retrieve from <https://www.roboticsbusinessreview.com/health-medical/6-ways-ai-and-robotics-are-improving-healthcare/>

- MC, A. (2020). *Elderly homes in Australia under fire after high COVID-19 deaths*. January 20, 2023, Retrieve from <https://www.aljazeera.com/features/2020/10/2/dying-of-covid-19-in-australias-elderly-home-care>
- Ministry of Commerce. (2021). *Analysis of elderly care center*. January 20, 2023, Retrieved from https://www.dbd.go.th/download/document_file/Statistic/2564/T26/T26_032021.pdf
- Ministry of Public Health. (2020). *Ministry of Public Health policies 2021-2023*. January 20, 2023, Retrieved from <http://www.spko.moph.go.th/wp-content/uploads/2021/09/policy65.pdf>
- National Health Security Office. (2013). *10 universal health coverage that you need to know*.
- National Statistical Office. (2017). *Elderly survey in Thailand*. January 20, 2023, Retrieve from <https://www.nso.go.th/sites/2014/Pages/News/2561/N10-07-61.aspx>
- National Statistical Office. (2020). *Survey of technology usage in Thailand 2020*. January 20, 2023, Retrieved from <http://www.nso.go.th/sites/2014/DocLib13/ICT/technologyinthehouse/2563/Pocketbook63.pdf>
- Jongudomsuk, P., Srithamrongsawat, S., Patcharanarumol, W., Limwattananon, S., Pannarunothai, S., Vapatanavong, P., ... Fahamnuaypol, P. (2015). The Kingdom of Thailand health system review. *Health Systems in Transition*, 5(5), 21-24.
- Population Division of United Nations. (2019). *Ageing*. January 20, 2023, Retrieve from <https://www.un.org/en/sections/issues-depth/ageing/>
- Population Division of United Nations. (2020). *World Population Ageing 2019*. January 23, 2023, Retrieved from https://www.un.org/development/desa/pd/sites/www.un.org.development.desa.pd/files/files/documents/2020/Jan/un_2019_worldpopulationageing_report.pdf
- Roongruengratanakul, P. (2019). *Business model for elderly daycare service*. (master degree). Thammasat University, Thammasat University.
- Social care institute for excellence. (2020a). *Practical information: What to consider when re-opening day care services*. February 2, 2023, Retrieve from <https://www.scie.org.uk/care-providers/coronavirus-covid-19/day-care/safe-delivery/practical-information>
- Social care institute for excellence. (2020b). *Practice examples of delivering safe adult day care*. February 2, 2023, Retrieve from <https://www.scie.org.uk/care-providers/coronavirus-covid-19/day-care/safe-delivery/practice-examples#hollacombe>
- Sookprecha, T. (2020). *What are the factors that cause nursing home to be the spread of COVID-19?*. February 2, 2023, Retrieve from <https://thematter.co/thinkers/nursing-home-and-covid-19/102936>
- Subchoktanakul, N. (2014). *Formation and business strategy of nursing home services*. (Master of Business Administration Program in Entrepreneurship). Silpakorn University
- Supaporn, K. (2021). Caregiver Burden and Mental Health Problems among the Caregivers of the Elderly at Home-based Palliative Stage. *Kuakarun Journal of Nursing*, 27(1).
- The University of Sydney. (2022). What is PESTLE. February 12, 2023, Retrieve from <https://libguides.library.usyd.edu.au/c.php?g=508107&p=5994242>
- Thai Health Reform Foundation. (2021). *"Bang Khea Model" technologies for elderly*. February 12, 2023, Retrieve from <https://www.hfocus.org/content/2020/09/20174>
- The Credit Suisse. (2018). *The Credit Suisse Global Wealth databook 2018*. Retrieved from <https://www.credit-suisse.com/media/assets/corporate/docs/about-us/research/publications/global-wealth-databook-2018.pdf//>
- Measures to Control and Supervise the Provision of Elderly Care Services at the Homes of Service Recipients, B.E. 2564, (2021).
- The Ministry of Finance. (2010). *Civil servant medical benefit scheme*. February 12, 2023, Retrieved from https://home.kku.ac.th/praudit/law/07_medical_fee/22_Medical_guide_government%20officer_CGD_2553.pdf
- The Ministry of Labour. (2019). *Social security scheme policy that you need to know*. February 12, 2023, Retrieved from <https://lb.mol.go.th/wp-content/uploads/sites/6/2019/07/m33m39E.pdf>.
- Tomaka, J., Thompson, S., & Palacios, R. (2006). The relation of social isolation, loneliness, and social support to disease outcomes among the elderly. *J Aging Health*, 18(3), 359-384.
- TOT. (2019). *Telehealth*. February 12, 2023, Retrieved from <https://www.tot.co.th/blogs/digitalstips/digital-updates/digitalstips/2019/11/11/telehealth-medicalserviceviainternet>
- Wongfoo, T. (2019). *Strategy of elderly day Care in Bangkok*. (Master of management). Mahidol University, Mahidol University.
- World Health Organization. (2016). *Medicine in health care delivery Thailand*. month date, year, Retrieved

from http://ndi.fda.moph.go.th/uploads/sensible_file/20180312120241.pdf
Worldbank. (2021). *Gini index*. Retrieved from <https://data.worldbank.org/indicator/SI.POV.GINI>
Worldometer. (2021). *COVID-19 CORONAVIRUS PANDEMIC*. February 2, 2023, Retrieve from
<https://www.worldometers.info/coronavirus/>

Article info

Na Pattalung et al.

ACCEPTED