The Need for Medical Service of the Elderly and Pre-elderly in Songkhla Province

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Abstract

This research work aims to improve marketing and prepare service to meet the needs, as well as 1) examine the need for medical service of the elderly and pre-elderly, and 2) compare the need for medical service of the elderly and pre-elderly. This work is a quantitative study using survey as the tool to collect information from the people in Songkhla Province of which 410 persons were included in the sample group. T-test was used for data analysis. The study found that the need for medical services of the pre-elderly overall was higher than the elderly (rating was high). Comparison between the pre-elderly and the elderly revealed that the difference was the mental and social services with statistical significance of 0.05. the pre-elderly was found to have more medical service needs than the elderly.

Keywords: The elderly, health, Pre-elderly, Elderly Care Center

Introduction

As Prince of Songkla University, Thailand, had studied feasibility of construction of the elderly care center that will serve Thai and foreign senior citizens. The study found that such center was viable (Department of Planning and Social Mission, Prince of Songkla University, 2022). Still, the activities of the university have to focus on research and public service while still being sustainable (Prince of Songkla University, 2022) The reason Prince of Songkla University arranged for the study and operation of the Elderly Care Center was the academic and business opportunities such program would provide, as well as the increasing number of the elderly every year due to dropping birth rate and advances in healthcare. (Ritchie & Roser, 2019; Office of the National Economic and Social Development Council, 2017). The data showing the number of elderlies is shown in Table 1 below.

Figure 1 Data about the elderly

Year	Worldwide		Thailand		Southern Thailand	
	Newborn	**Elderly**	**Newborn**	**Elderly**	**Newborn**	**Elderly**
2017	150,720,000	678,240,000	702,755	10,225,322	124,907	1,280,914
2018	144,799,000	685,890,000	666,109	10,666,803	120,365	1,330,498
2019	146,129,000	692,190,000	618,193	11,136,059	112,044	1,382,155
2020	147,687,000	699,570,000	587,368	11,627,130	107,879	1,440,608

Source: Population Reference Bureau (2018; 2019; 2020; 2021; 2022), Department of Provincial Administration (2018; 2019; 2020; 2021; 2022)

Nevertheless, Thailand had sufficient concerns about the elderly, and had set the elderly care as a major national mission. The Department of Older Persons was established to provide care for the elderly (Department of Older Persons, 2015). There was also a monthly pension for the elderly from the Comptroller General's Office (Comptroller General's Office, 2022) The Office of the National Economic and Social Development Center mentioned in the 12th National Economic and Social Development Plan that the retired or elderly were economically, medically and socially dependent. The government spent 228,482.21 million baht in elderly care in 2022. Although 59.2% the elderly between 60-64 years old and 45.6% of the elderly between 65-69 years old remained employed, but their saving was diminishing due to increasing medical and everyday expenses. It was found that in 2016, the government enacted a new law: Health Establishment Act B.E. 2559 and ministerial regulations for elderly or dependent care to directly affect development of elderly care establishments

(Department of Health Service Support, Ministry of Public Health, 2021), for 3,000 public and private elderly care establishments registered before 2021 and registered in 2021 (the remaining 2,900 establishments were not registered). Although the government become increasingly more involved in the healthcare provision, well-off elderlies tended to go for good services at their own expenses (Chatterjee et al., 2018). Nevertheless, Srithamrongwawat et al. (2009) predicted that in 2024, 1.4-1.9 elderly were dependent on the state's long-term care facilities, with the estimated annual experience of 2,766-34,573 million baht. One interesting issue was that whether the elderly would get benefit if there were other organizations to assist the government, or if the better-off elderlies simply went to paid facilities, leaving state-run facilities for less-fortunate elderlies.

The problem of delays and inability to meet the needs of the elderly in Thailand's elderly care operation was due to a large, complex state bureaucracy with increasing expense, and lengthy budget allocation process according to internal and external economic changes (Office of the National Economic and Social Development Council, 2017), Prince of Songkla University saw it as an opportunity to operate elderly care facilities under this new law to provide paid services to the elderly as the elderly need, and alleviate state burden (Department of Planning and Public Service, 2022). In this work, the author is interested in examining the need for medical services from care, treatment, rehabilitation, mental and social services for the pre-elderly and elderly. It is expected that the finding would lead to further improvement of the government agencies' efforts in care of the elderly, or new business opportunities for the private and public actors to operate services that can accurately meet the needs of the elderly.

Research Objectives
1.   Examine the level of medical service needs of the pre-elderly and elderly.
2.   Compare the medical service needs of the pre-elderly and elderly.

Literature review
Age grouping
The people aged between 40 and 60 years old were pre-elderlies that began to have diseases, life successes and sufficient maturity. The people aged 60 years old and later were deemed the elderlies that would see the death of spouses, retirement, decreased number of friends, increasing illnesses, and reduced physical movement (Kaeowan, 2021). Studies about the elderly should cover personal factors such as gender, age, marital status, number of children, monthly income, education and profession (Chatterjee et al., 2018; Saengthasirivilai & Skulitsariyaporn, 2017; Putri & Ilyas, 2019; Hornby-Turner et al., 2017), Residence ownership and residence type (Kemp et al., 2019).

Elderly Service
Watson (2008) gave a practical concept that the elderly would need 1) everyday living care, 2) treatment care, 3) rehabilitation care, 4) mental care, 5) social care. This is pursuant to the ministerial rule which defined that the elderly or dependent care service as part of the "other" healthcare establishment in 2020 that elderly care establishments had overnight, and non-overnight services for healthcare, health promotion and health rehabilitation with daily activities, assistances, residences and nursing homes (Department of Health Service Support, Ministry of Public Health, 2021).

Aside from the normal services provided by the five organizations, the elderly might need additional services. Three academicians similarly defined elderly care. Harrington et al. (2003, p. 377) defined elderly care as personal care of the elderly in their daily lives. Bundhamcharoen and Sasat (2009, p. 390) stated that elderly care was provision of assistant for the elderly's everyday life in the house, hospital or other facility. Miller et al. (2010, p. 242) defined elderly care as sending assistant to the elderly at their residence, or ambulance service like a family member. Thus, elderly care in the context of the organization and meaning of the service, could be summarized in five types: everyday living care, 2) treatment care, 3) rehabilitation care, 4) mental care, 5) social care. About everyday living care, there were 1.1.) Everyday life and hygiene care, 1.2) washing of personal items, 1.3.) renting of medical equipment, 1.4) calling ambulance for visit or emergencies, 1.5) purchase of essential items, 1.6) deposit of valuables, 1.7) installation of CCTV with 24/7 staff, 1.8) fire safety, 1.9) Use of technology for healthcare, 1.10) use of innovative health checking tools (Watson, 2008, p. 154; Orem, 2001, p. 82; Barker and Bullook, 2005, p. 9; Bresnick, 2013, pp. 73-81) 2) treatment care were 2.1.) Acute treatment, 2.2) chronic treatment 2.3) terminal treatment, 2.4) nutritional treatment, 2.5) acupuncture (Simmons et al., 2011, pp. 869-872; Kirk & Mahon, 2010, p. 918-921) 3) rehabilitation were 3.1) physical therapy, 3.2) recreational therapy, 3.3) recovery, 3.4) anti-aging treatment , 3.5) traditional massage, 3.6) suitable exercise (Yoshikawa et al., 1993, pp. 3-4; Eliopoulos, 2005, p. 50; Juthberg et al., 2010, p. 1714; Kovacic et al., 2011, p. 1905) 4) Mental care were 4.1) religious activity, 4.2) musical

therapy, 4.3) therapy robot, 4.4) psychological advance (Routasalo et al., 2009, p. 302; Sutirawut, 2010, p. 12; Wada, & Shibata, 2004, p. 92; Department of Mental Health, 2009, p. 9-23) 5) social care were 5.1) social activity, 5.2) field trip and 5.3) cremation (Yashida, 2004, p. 20-23; Gues, 2010, p. 23; Sutirawut, 2010, pp. 94-123). Studies of the concepts, theories and research works led to the research concept in Figure 1.
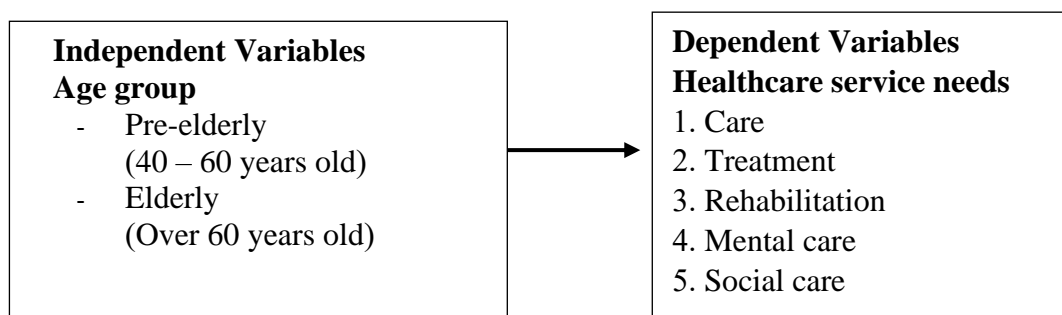
Independent Variables Age group - Pre-elderly (40 – 60 years old) - Elderly (Over 60 years old)	→	Dependent Variables Healthcare service needs 1. Care 2. Treatment 3. Rehabilitation 4. Mental care 5. Social care

Figure 1 Research scope

Research Hypothesis
he pre-elderly and elderly have different healthcare service needs.

Research Method
This study is quantitative research with following methods:
1. Population consisted of 408,239 people aged between 40 and 60 years old and 229,630 people aged over 60 years old living in Songkhla Province, for the total of 637,869, as this work directly supported the Geriatric Care Center, Prince of Songkla University (Songkhla Provincial Statistical Office).
2. The sample used in the study was done in reference to Yamane's table (Yamane, 1973, p. 286) in setting the sample size with error of 0.05 as the population was over 100,000 and 400 was the result of the calculation. To prevent incomplete survey, the sample size was increased by 10 to 410. The researcher collected information from 205 people aged between 40 and 60 years and 205 people aged over 60 years old. The sampling was done by proportional stratified random sampling and then sample random sampling.
3. Tool creation: this work used a survey
      3.1. The research tools were in two parts. The first part asked for age group information, as one multiple-choice, closed-ended question.
      The second part is medical service as elderly, the researcher improved the work by (Watson, 2008, p. 154; Kovacic et al., 2011, p. 1905; Sutirawut, 2010, p. 12; Gues, 2010, p. 23) to create 23 Likert questions.
      3.2. Tool reliability test
      - For the research tool, the researcher requested three experts to verify the accuracy, language and conformity of the survey, the IOC of which was given as 1.00.
      - The Cronbach's Alpha Coefficient analysis used the 70% alpha coefficient value as the criteria. The survey got .97 or excellent rating (Nunnally, 1978).
4. Data collection
      4.1. Primary information is survey data from the pre-elderly (people aged between 40 and 60 years) and elderly (aged over 60 years) in Songkhla Province.
      4.2. Secondary information is data from literature review.
5. Data analysis and rating interpretation criteria was referenced from Best and Kanh (2006, p. 343) as follows: 4.50-5.00 meant the highest rating, 3.50-4.49 meant high rating, 2.50-3.49 meant average rating, 1.50-2.49 meant low rating, and 1.00-1.49 meant the lowest rating.

Research Result
Result of analysis of the medical service needs of the pre-elderly (between 40 and 60 years old) and elderly (over 60 years old) is shown in Table 1.

Table 1 Medical service needs of the Pre-elderly (Aged between 40 and 60 years old) And Elderly (over 60 years old)

Medical service needs	Age Group	n	Mean	SD	Rating
1. Care	Pre-elderly Aged between 40 and 60 years old	205	3.80	0.98	High
	Elderly (over 60 years old)	205	3.70	0.94	High
2.Treatment	Pre-elderly Aged between 40 and 60 years old	205	3.94	0.93	High
	Elderly (over 60 years old)	205	3.88	0.86	High
3 Rehabilitation	Pre-elderly Aged between 40 and 60 years old	205	4.01	0.89	High
	Elderly (over 60 years old)	205	3.87	0.84	High
4. Mental care	Pre-elderly Aged between 40 and 60 years old	205	3.61	0.91	High
	Elderly (over 60 years old)	205	3.37	0.89	Average
5. Social care	Pre-elderly Aged between 40 and 60 years old	205	3.72	0.94	High
	Elderly (over 60 years old)	205	3.48	0.88	Average
Overall	Pre-elderly Aged between 40 and 60 years old	205	3.81	0.84	High
	Elderly (over 60 years old)	205	3.66	0.74	High

According to Table 1 medical service needs of the Pre-elderly (Aged between 40 and 60 years old) and Elderly (over 60 years old) could be explained as follows:

- the Pre-elderly (aged between 40 and 60 years old) had high medical service needs with mean of 3.81, and also high in each subcategory. When arranged by rating from high to low, rehabilitation need was the highest with Mean of 4.01, followed by treatment with Mean of 3.94, then Care with Mean of 3.80, then Social care with Mean of 3.72 and lastly Mental care with Mean of 3.61.

- The Elderly (over 60 years old) high medical service needs with mean of 3.66, with subcategory ratings being High and Average. When arranged by rating from high to low, treatment was given the highest rating, with Mean of 3.88 followed by Rehabilitation with Mean of 3.87, then Care with Mean of 3.70 then Social care with Mean of 3.48 and lastly Mental care with Mean of 3.37.

Hypothesis test result

The researcher tested the hypotheses using independent t-test with statistical significance of 0.05 with five hypotheses shown in Table 2 to Table 6.

Hypothesis 1 Age group does not affect the need of care service.

Table 2 Age group and the need of care service.

1.Care	Age Group	n	Mean	SD	Rating	t-test	sig
1.1 Everyday life and hygiene care	Pre-elderly Aged between 40 and 60 years old	205	3.70	1.16	High	1.62	0.11
	Elderly (over 60 years old)	205	3.52	1.17	High		
1.2 renting of medical equipment	Pre-elderly Aged between 40 and 60 years old	205	3.60	1.16	High	1.50	0.13
	Elderly (over 60 years old)	205	3.41	1.28	Average		

1.3 Ambulance or assistant service during medical visits	Pre-elderly Aged between 40 and 60 years old	205	3.81	1.13	High	1.39	0.17
	Elderly (over 60 years old)	205	3.65	1.21	High		
1.4 24/7 CCTV	Pre-elderly Aged between 40 and 60 years old	205	3.83	1.08	High	1.88	0.06
	Elderly (over 60 years old)	205	3.61	1.28	High		
1.5 Use of technology and innovation	Pre-elderly Aged between 40 and 60 years old	205	4.05	1.02	High	1.61	0.11
	Elderly (over 60 years old)	205	3.87	1.19	High		
Overall Care needs	Pre-elderly Aged between 40 and 60 years old	205	3.80	0.98	High	1.07	0.28
	Elderly (over 60 years old)	205	3.70	0.94	High		

*p ≤ 0.05, **p ≤ 0.01

According to Table 2, the independent T-test with significance of 0.05 revealed that overall, the pre-elderly (aged between 40 and 60 years old) and elderly (over 60 years old) had similar level of care needs. The test of subcategory needs such as Everyday life and hygiene care, renting of medical equipment, Ambulance or assistant service during medical visits, 24/7 CCTV, and Use of technology and innovation showed that there was no difference between the pre-elderly and elderly.

Hypothesis 2 Age Group does not affect the need for Treatment service

Table 3 Comparative result of treatment service need levels by age group

Treatment	Age Group	n	Mean	SD	Rating	t-test	sig
2.1 Acute treatment	Pre-elderly Aged between 40 and 60 years old	205	4.01	1.00	High	0.05	0.96
	Elderly (over 60 years old)	205	4.00	1.11	High		
2.2 chronic treatment	Pre-elderly Aged between 40 and 60 years old	205	3.92	1.03	High	0.04	0.96
	Elderly (over 60 years old)	205	3.91	1.18	High		
2.3 terminal treatment	Pre-elderly Aged between 40 and 60 years old	205	3.90	1.11	High	0.17	0.86
	Elderly (over 60 years old)	205	3.92	1.16	High		
2.4 nutritional treatment	Pre-elderly Aged between 40 and 60 years old	205	3.98	0.97	High	2.10	0.04*
	Elderly (over 60 years old)	205	3.76	1.14	High		
2.5 Alternative treatment	Pre-elderly Aged between 40 and 60 years old	205	3.88	1.01	High	3.83	0.00**

	Elderly (over 60 years old)	205	3.45	1.25	Average		
Overall treatment rating	Pre-elderly Aged between 40 and 60 years old	205	3.94	0.93	High	0.61	0.54
	Elderly (over 60 years old)	205	3.88	0.86	High		

*p ≤ 0.05, **p ≤ 0.01

According to Table 3, result of the hypothesis test, using independent t-test was that Overall, the Pre-elderly (Aged between 40 and 60 years old) and Elderly (over 60 years old) had similar level of treatment needs. The test of subcategory needs such as nutritional treatment and alternative treatment showed differences, as the Pre-elderly (Aged between 40 and 60 years old) had significantly higher needs for nutritional treatment and alternative treatment than the Elderly (over 60 years old).

Hypothesis 3 Age Group does not affect the need for Rehabilitation

Table 4 Comparative result of rehabilitation service need levels by age group

Rehabilitation	Age Group	n	Mean	SD	Rating	t-test	sig
3.1 Physical therapy	Pre-elderly Aged between 40 and 60 years old	205	4.02	1.00	High	0.34	0.74
	Elderly (over 60 years old)	205	3.99	1.05	High		
3.2 Recreation	Pre-elderly Aged between 40 and 60 years old	205	3.95	1.02	High	2.19	0.03*
	Elderly (over 60 years old)	205	3.71	1.14	High		
3.3 Rehabilitation	Pre-elderly Aged between 40 and 60 years old	205	3.94	1.05	High	0.09	0.47
	Elderly (over 60 years old)	205	3.86	1.13	High		
3.4 Anti-aging care	Pre-elderly Aged between 40 and 60 years old	205	3.91	1.05	High	3.71	0.00**
	Elderly (over 60 years old)	205	3.50	1.18	High		
3.5 Thai traditional massage	Pre-elderly Aged between 40 and 60 years old	205	4.08	0.95	High	2.20	0.03*
	Elderly (over 60 years old)	205	3.85	1.15	High		
3.6 Exercise consulting	Pre-elderly Aged between 40 and 60 years old	205	4.16	0.95	High	2.61	0.01**
	Elderly (over 60 years old)	205	3.90	1.08	High		
Overall Rehabilitation rating	Pre-elderly Aged between 40 and 60 years old	205	4.01	0.89	High	1.67	0.10
	Elderly (over 60 years old)	205	3.87	0.84	High		

*p ≤ 0.05, **p ≤ 0.01

According to Table 4, result of the hypothesis test, using independent t-test was that overall, both age groups, Pre-elderly (Aged between 40 and 60 years old) and Elderly (over 60 years old), had similar needs for rehabilitation service. Subcategory needs such as recreation, anti-aging care, Thai traditional massage and appropriate exercise consulting showed differences, as the pre-elderly (Aged between 40 and 60 years old) had significantly more rehabilitation needs, such as recreation, anti-aging care, Thai traditional massage and appropriate exercise, than the elderly (over 60 years old).

Hypothesis 4 Age Group does not affect the need for Mental care

Table 5 Comparative result of mental care service need levels by age group

Mental care	Age Group	n	Mean	SD	Rating	t-test	sig
4.1 Religious activity	Pre-elderly Aged between 40 and 60 years old	205	3.75	0.99	High	3.36	0.00**
	Elderly (over 60 years old)	205	3.41	1.07	Average		
4.2 Musical therapy	Pre-elderly Aged between 40 and 60 years old	205	3.81	1.01	High	2.54	0.01**
	Elderly (over 60 years old)	205	3.53	1.20	High		
4.3 Robotic therapy	Pre-elderly Aged between 40 and 60 years old	205	3.22	1.20	Average	2.31	0.02*
	Elderly (over 60 years old)	205	2.96	1.14	Average		
4.4 Psychological consulting	Pre-elderly Aged between 40 and 60 years old	205	3.64	1.10	High	2.34	0.02*
	Elderly (over 60 years old)	205	3.36	1.26	Average		
Overall Mental care	Pre-elderly Aged between 40 and 60 years old	205	3.61	0.91	High	2.63	0.01**
	Elderly (over 60 years old)	205	3.37	0.89	Average		

*p ≤ 0.05, **p ≤ 0.01

According to Table 5, result of the hypothesis test, using independent t-test was that overall the Pre-elderly (Aged between 40 and 60 years old) and Elderly (over 60 years old) had different mental care needs. The subcategory needs such as religious activity, musical therapy, robotic therapy and psychological consulting were all different between the Pre-elderly (Aged between 40 and 60 years old) the elderly (over 60 years old), as the pre-elderly had significantly higher needs in this part than the elderly.

Hypothesis 5 Age Group does not affect the need for social care

Table 6 Comparative result of social care service need levels by age group

Social care	Age Group	n	Mean	SD	Rating	t-test	sig
5.1 Social activity	Pre-elderly Aged between 40 and 60 years old	205	3.68	1.03	High	4.13	0.00**

	Elderly (over 60 years old)	205	3.23	1.17	Average		
5.2 Field trip	Pre-elderly Aged between 40 and 60 years old	205	3.77	1.03	High	0.95	0.34
	Elderly (over 60 years old)	205	3.67	1.14	High		
5.3 Cremation	Pre-elderly Aged between 40 and 60 years old	205	3.72	1.14	High	3.41	0.00**
	Elderly (over 60 years old)	205	3.32	1.23	Average		
Overall Social care	Pre-elderly Aged between 40 and 60 years old	205	3.72	0.94	High	2.71	0.01**
	Elderly (over 60 years old)	205	3.48	0.88	Average		

$*p \leq 0.05$, $**p \leq 0.01$

According to Table 6, result of the hypothesis test, using independent t-test was that Overall, the Pre-elderly (Aged between 40 and 60 years old) and Elderly (over 60 years old) had different level of social care needs. The test of subcategory needs such as social activity and cremation showed differences, as the Pre-elderly (Aged between 40 and 60 years old) had significantly higher needs for social care service than the Elderly (over 60 years old).

Conclusion and Discussion
From the result, the researcher could discuss the result by research objective as follows:
1. The medical service need of the pre-elderly (aged between 40 and 60 years old) and the elderly (over 60 years old) revealed that overall the pre-elderly had high healthcare service needs, with rehabilitation being the highest-rated, followed by treatment, social care and mental care. On the other hand, the elderly also had high healthcare service needs, with treatment being the highest-rated, followed by rehabilitation which was rated high, while social and mental care were only rated as average. In conclusion, the pre-elderly had higher needs for rehabilitation, treatment, social care and mental care than the elderly, concurring with Chatterjee et al. (2018) that the well-off elderly would have high expectation about rehabilitation and treatment. Marques et al. (2019) found an elderly healthcare guideline to propose a human and high-quality treatment that could suit the elderly's needs. This work also found that the expectation of the elderly, pertaining to healthcare service, was a status as the elderly's social representative in healthcare, basic healthcare provider, access to specialized care, humane and respectful care, and referral to medical specialists and medication without overly complicated processes. This concurred with Pannarunothai (2021) that proposed equality in healthcare service. Araujo de Carvalho et al. (2017) also mentioned integration of healthcare and social care for the elderly with similar expense level as the traditional care.
2. Comparison of healthcare service needs between the pre-elderly and elderly revealed that both groups had different social and mental care needs with statistical significance of 0.05. In this case, the pre-elderly had more healthcare service needs than the elderly. It was also found that the pre-elderly needed more services such as alternative services, recreation, anti-aging care, Thai traditional massage, exercise, religious activity, musical therapy, robotic therapy, psychological consulting, social activity and cremation, with significance. This conflicted with Worcester (2000, p. 135), which stated that the elderly wanted freedom, social circle and activity. Huang (2006, p. 404) found that healthcare was maintaining balance, and once the balance was maintained, the mental care need would increase. This finding conflicted with findings by Phibun, Piriyapan, Pitaksilp and Injai, (2016) which found that the elderly with different ages needed a common activity space, recreational park and monthly health check-up. This meant the elderly care center should focus on mental and social care, as well as other care as mentioned, or the mission of the elderly care facilities should be expanded to cover the pre-elderly in addition to the elderly.

Recommendation:
The policy recommendation is that the government or owner of elderly care business might be able to provide five types of service: care, treatment, rehabilitation, social and mental care, and 23 minor cares as the demand is

high, but the target group should be expanded to cover the pre-elderly or people aged between 40 and 60 years old, because the pre-elderly have higher needs than the elderly. In addition, the elderly care center should be renamed to include the pre-elderly.

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