Quality of Work Life of People Aged 40 and Over but Younger Than 60 in Songkhla Province Influencing Needs for Health Services When They Were Elderly People

Theerawat Hungsapruek [1]

[1] Faculty of Management Sciences, Prince of Songkla University

(Received: April 6, 2021; Revised: July 14, 2021; Accepted: July 16, 2021)

Abstract

This research was useful for Prince of Songkla University, Hat Yai Campus because it could be used as guidelines to organize health services for the elderly and as information for public and private organizations undertaking elderly care missions to seek people to take care of the elderly. They also recognized the needs for the elderly care organization and what kind of health services people needed when they became elderly. Therefore, the right investment would be made in preparation to promote a good quality of life so that people continued to have good health. The research aimed to study 1) the level of work-life quality, 2) the level of health service needs of people aged 40 and over but younger than 60 when they became elderly, and 3) the level of work-life quality of those people in Songkhla Province which influenced health care needs when they became elderly people. The study was a quantitative research. The sample group consisted of the total of 410 Songkhla people aged 40 years old and over but younger than 60 years of age. Multiple regression statistics was used in the study. The results were as follows: 1) The quality of work life of people aged 40 years and over but younger than 60 years old in Songkhla Province was at a high level (Mean = 3.67) 2) When they were elderly, people aged 40 years and over but younger than 60 years old had a high level of health care needs (Mean = 3.71) 3) Quality of work life in term of the balance between work and personal life of people aged 40 years and over but younger than 60 years had the highest influence on health services when they became elderly.

Keywords: 1) Quality of work life 2) Needs 3) Healthcare Service 4) the Elderly

[1] Assistant Professor; E-mail: theerawat.h@psu.ac.th

Introduction

The world context was that the birthrate was falling, and the number of elderly citizens were on the rise, as shown in Table No. 1.

According to Table No. 1. worldwide birthrate was dropping and the number of elderly citizens increased noticeably. For Thailand, comparison between 2019 and 2020 showed 4.98% reduction in childbirth and increase in the number of senior citizens by 4.41%. In Southern Thailand, comparison between 2019 and 2020 showed 3.71% reduction in childbirth and increase in the number of senior citizens by 4%. It could be stated that Thailand has become an aging society as defined by the United Nations. This causes demographic and socioeconomic changes, and increase in dependency (Changkid and Tawepng, 2020, p. 166). Therefore, poor quality of elderly care (both physical and mental) might result in severe depression and self-harm (Mason and Lee, 2004). This might result in shortage of senior workers that could supplement the working-age people. The 2nd National Plan on the Elderly (2002-2021) places importance on preparation of care of people aged 40 and over but younger than 60 years as they would eventually become senior citizens. In addition, as the number of diseases grow, preparation of elderly care is one form of life planning. Good planning, good health promotion activity, good caregiving organization, and good service will prevent problems (Ministry of Social Development and Human Security, 2010, pp. 39-41).

For Songkhla Province, the number of people aged over 60 years, as of 31 December 2020 was 229,513 or 16.07% of the entire population of Songkhla Province (Department of Older Persons, 2021, pp. 1-2). Currently there were 17 elderly caregiving organizations (Statistical Office Songkhla Province, 2020, p.1), which was inadequate for the number of the elderly (Songkhla Provincial Administrative Organization, 2020, p. 3). Prince of Songkla University thus had a policy to build a service center for the elderly, mainly to provide health service to the elderly in Songkhla Province, with the goal to cover other provinces if

Table No. 1 Number of births and number of elderly people in the world, Thailand and the South, 2016-2020

Year	World		Thailand		Southern Thailand	
	Born	Senior	Born	Born	Senior	Born
2016	148,360,000	593,440,000	704,058	9,934,309	125,732	1,238,476
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. (2017; 2018; 2019; 2020; 2021); Department of Provincial Administration (2017; 2018; 2019; 2020; 2021a; 2021b)

possible (Prince of Songkla University, 2020, p. 48).

Regarding academic consideration of the healthcare needs of the elderly, the TCI database had researched into personal factors as an independent variable, but quality of working life of people aged 40 and over but younger than 60 years in Songkhla Province, along with their healthcare needs after becoming the elderly had not been researched (Thai-Journal Citation Index Centre, 2020). Examination of this issue would be another side of information that the Prince of Songkla University could use for management of healthcare service for the elderly, by checking information of those aged 40 and over but younger than 60 years to prepare for accurate and appropriate healthcare, with consideration of quality of working life to create target groups after they become senior citizens.

Research Objectives

1. To study quality of working life of people aged 40 and over but younger than 60 years in Songkhla Province.

2. Examine healthcare needs of people aged 40 and over but younger than 60 years in Songkhla Province.

3. Examine quality of working life of people aged 40 and over but younger than 60 years that affects healthcare needs after becoming senior citizens.

Research Hypothesis

1. Quality of working life of people aged 40 and over but younger than 60 years has effect on elderly caregiving organization after they become senior citizens.

2. Quality of working life of people aged 40 and over but younger than 60 years has effect on health service management needs after they become senior citizens.

Scope of Study

This study used quantitative research on the sample group of 408,239 people aged 40 and over but younger than 60 years (National Statistical Office, 2019, p. 9). The scope covered quality of working life, elderly caregiving organization needs, and healthcare needs after becoming senior citizens.

Literature Review

Quality of working life

Quality of working life was drawn from Walton (1974, pp. 12-16) and National Social Economic Development Agency (2017, pp. 71-72) used eight scopes and aspects specified in section 12 of Walton and the concept brought forward by the 12th National Economic and Social Development Plan; 1) Adequate and fair reward related with daily allowance and retirement saving, 2) Attention and treatment under safe environment and health promotion, pertaining to ability to maintain work-life balance, 3) Prosperity and stability regarding employment and having money throughout their employment, 4) Opportunity to improve capabilities pertaining to time and budget, 5) Opportunity to cooperate with the society pertaining to support from social organizations, 6) Democratic and freedom of expression-oriented atmosphere inside the organization, 7) Work-life balance and 8) Social responsibility activities. The study by Trilerklith, Rungsayatorn and Hirunwong (2014, p. 468) examined quality of life and retirement

preparation of teachers in Chonburi Province, and found that overall quality of life was moderate, while pre-retirement preparation was good. Still, some issues were found, such as inadequate physical practice like less than 30 minutes, self-medication, sparse family activity, feeling neglected, lonely, or unneeded. Harmful effects from such issues are important on quality of life, therefore study on quality of working life of people aged 40 and over but younger than 60 years would lead to perception of overall quality of working life, and problem identification. This would lead to accurate preparation and self-care before entering the elderly phase, and allow the people to maintain quality of life against changing economic, environment, social and political changes.

Elderly caregiving organization characteristics

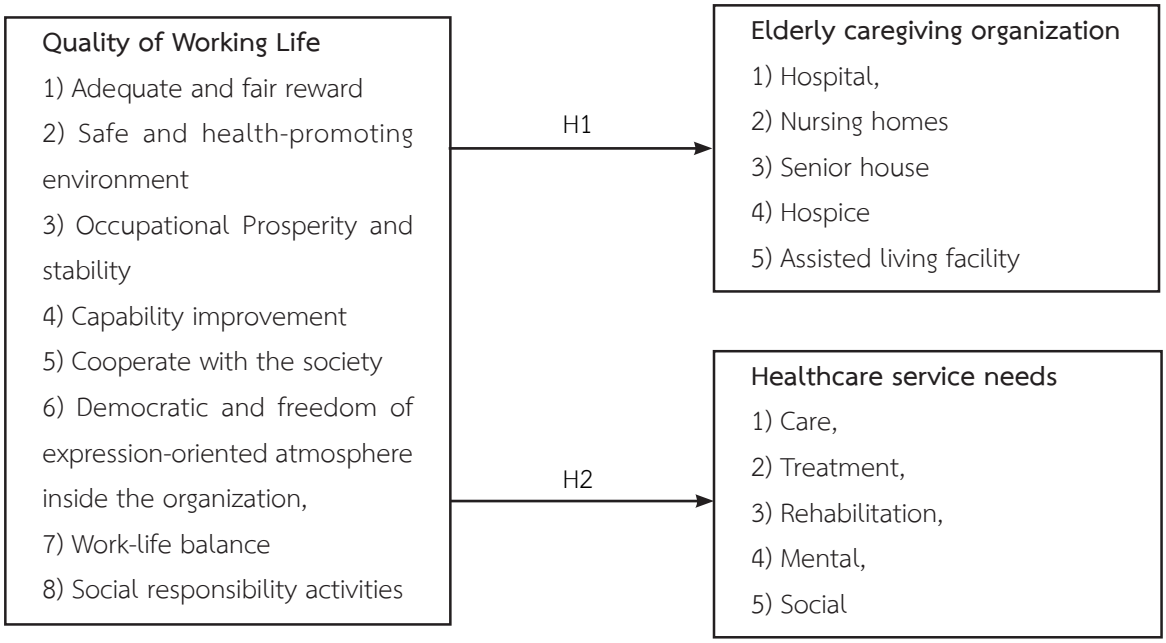
Patchara-arpa (2016, p. 11) defined the elderly into three groups; 1) well elder that could maintain independent lifestyle with no chronic disease, or at controllable risk of 1-2 disease, 2) social or house dependent that could still self-care but had uncontrollable disease or inability to walk on smooth path without walking tools, and 3) bedridden elderly that relied on others for basic needs or tools for basic bodily functions such as assistive eating device. Bagwell and Staiger (2010, pp. 223-256) commented that effective organizational management required attention to behavior of its members, using rules to control interaction during work. This could be applied to elderly caregiving organization, as behavior of both the caregivers and the elderly could be examined and controlled using rules. Hatch (2012, p. 69) defined the term "organization" as a group of people that shares the same objective, whether they are seeking profit or not.

Elderly caregiving organization of Prince of Songkla University, Hatyai Campus is a nonprofit organization, but it still needs development to generate more income. According to the Elderly Person Act, B.E. 2546 (2003), Elderly caregiving organizations are divided into five types: 1) Hospital, 2) Nursing homes, 3) Senior house, 4) Hospice, and 5) Assisted living facility. This concurs with Wutikorn (2016, p. 4) that also divide elderly caregiving organization into five types; 1) Hospital, 2) Nursing homes, 3) Senior house, 4) Hospice, and 5) Assisted living facility. Likewise, Sasat and Phakdiphrom (2009, pp. 48-56) divide elderly caregiving organization into five types; 1) Hospital, 2) Nursing homes, 3) Senior house, 4) Hospice, and 5) Assisted living facility. Details are that 1) Hospitals that have day care, or occasional treatment until recovery or death. Many hospitals have service for bedridden patients in addition to normal service with monthly fee, 2) Nursing homes provide medical service such as physical therapy, light activity, and physical/mental assistance in daily lives without the time limit. Nursing home must have high comfort and close care, with some places having long-term care, and 3) Senior house is basically a home or room with assistive personnel for daily activities such as washing or eating. There are social activities between the elderly, and healthcare in case of illness. There is a profiling system for each senior citizen. Department of Older Persons (2015, p. 2) divided senior homes into three types; 1) Conventional – free elderly care, 2) Dormitory – elderly care with fee

specified by Department of Older Persons, and 3) Self-built – allowing the elderly to construct their own house inside the center, as instructed by Department of Older Persons.

Healthcare service for the elderly

Aside from the usual service provided by the five types of organization, the elderly might need additional service. Three academicians defined elderly service in a similar manner: Harrington, et al. (2003, p. 377) defined elderly care as daily, personal care of the elderly. Bundhamcharoen and Sasat (2009, p. 390) defined elderly service as provision of assistant for daily lives such as housing in the hospital or other places. Miller, Mor and Chark (2010, p. 242) defined elderly service as providing caregivers to the elderly's house, or transportation to and from the hospital much like a family member. Therefore, elderly service under the context of the organization and definition of service could be concluded into five types; 1) Care, 2) Treatment, 3) Rehabilitation, 4) Mental, and 5) Social. The first type, care, could be divided into 1.1) Hygiene and everyday care, 1.2) Cleaning of personal items, 1.3) renting medical equipment, 1.4) Provision of ambulance for hospital visit or emergency, 1.5) Grocery purchase, 1.6) Care of personal property, 1.7) Installation of CCTV with 24/7 monitoring, 1.8) Fire safety, 1.9) Health monitoring, and 1.10) Health checkup with innovative technology (Watson, 2008, p. 154; Orem, 2001, p. 82; Barker and Bullook, 2005, p. 9; Bresnick, 2013, pp. 73-81). 2) Treatment could be divided into 2.1) Acute treatment, 2.2) Chronic treatment, 2.3) Terminal treatment, 2.4) Diet therapy, and 2.5) Acupuncture (Simmons, et al., 2011, pp. 869-872; Kirk and Mahon, 2010, pp. 918-921) 3) Rehabilitation is divided into 3.1) Physical therapy, 3.2) Entertainment, 3.3) Recovery service, 3.4) Anti-aging, 3.5) Traditional massage, and 3.6) appropriate exercise (Yoshikawa, Cobb and Smith, 1993, pp. 3-4; Eliopoulos, 2005, p. 50; Juthberg, et al., 2010, p. 1714; Kovacic, et al., 2011, p. 1905). 4) Mental services are 4.1) Religious activities, 4.2) Musical therapy, 4.3) Robotic therapy, and 4.4) Mental consultant (Routasalo, et al., 2009, p. 302; Sutirawut, 2010, p. 12; Wada and Shibata, 2004, p. 92; Department of Mental Health, 2009, pp. 9-23). 5) Social services are 5.1) Social activities, 5.2) Travel, and 5.3) Cremation (Yashida, 2004, pp. 20-23; Gues, 2010, p. 23; Sutirawut, 2010, pp. 94-123). Study on related concepts, theories and research works led to the scope in Picture No. 1.



Picture No. 1 Research Framework.

Methods

This study was quantitative research based on survey, with following methods.

1. Population used in this study was 408,239 people aged 40 and over but younger than 60 years (National Statistical Office, 2019, p. 9).

2. Sample used in this study were 410 people aged 40 and over but younger than 60 years living in Songkhla Province. The sample size was calculated using Yamane's formula (Yamane, 1973, p. 286) with the error of 0.05 due to the population size being over 100,000. The minimal sample size was 400, but the author added 0.25% more size to 410. The reasons people aged 40 and over but younger than 60 years were selected were the 2nd National Plan on the Elderly (2002 – 2021) specifying such group as late adults, and preparation for providing service to the elderly in Songkhla Province (Ministry of Social Development and Human Security, 2010, pp. 39-41). The sample was selected by accidental random sampling, and six months were spent collecting data from the 410 sample group members. Research time was from April 2020 to March 2021 (Note: The National Bureau of Statistics had not reported on people aged 40 and over but younger than 60 years in Songkhla Province in 2021, thus the 2019 database was used for calculation).

3. Research tool used in this study is a survey form with four parts:

The first part asked for personal information with nine open-ended questions: gender, age, marital status, number of children, monthly income, residence ownership, residence type, education and profession.

The second part asks for quality of working life. The author derived 32 Likert-scale questions from the concepts by Walton (1974, pp. 12-16) and National Social Economic Development Agency (2017, pp. 71-72)

The third part asks for elderly caregiving organization. The author improved on the concepts by Wutikorn (2016, p. 4) and Sasat and Phakdiphrom (2009, pp. 48-56) and created 10 Likert-scale questions.

The fourth part is healthcare service after becoming senior citizens. The author improved on research works by (Watson, 2008, p. 154; Bresnick, 2013, pp. 73-81; Kovacic, et al., 2011, p. 1905; Sutirawut, 2010, p. 12; Gues, 2010, p. 23) and created 23 Likert-scale questions.

Interpretation of the score for arrangement of quality of life, elderly caregiving organization, and healthcare service of people aged 40 and over but younger than 60 years s living in Songkhla Province was done in reference to Best and Kanh (2006, p. 343). the mean score between 4.50 – 5.00 is "Highest", 3.50 – 4.49 "High", 2.50 – 3.49 "Moderate", 1.50 – 2.49 "Low", and 1.00 – 1.49 "Lowest.

4. Verification of the research tool was done by three experts to verify accuracy, language and consistency with the research objectives. The average IOC was 0.67. Then, 30 of the survey forms were used on non-sample people aged 40 and over but younger than 60 years. Cronbach's Alpha Coefficient was measured using the 0.70 criteria, and the result as .932 which was acceptable (Vanichbuncha, 2005).

5. Data collection was done by handing survey forms to people aged 40 and over but younger than 60 years for voluntary fill-out, before taking the filled forms for further processing.

6. Data analysis was done by using descriptive statistics such as frequency, percentage, mean, standard deviation. Inferential statistics—multiple regression-analysis—was used in hypothesis test.

Results

The author concluded the result in order, from personal information, quality of working life, and healthcare needs of people aged 40 and over but younger than 60 years in Songkhla Province, and hypothesis test.

Personal information

The result revealed that gender ratio of the sampled group was fairly even: 53.7% were female, and 46.3% were male. Most aged between 55 and 60 years (33.70%). Most were married (61.20%) and had between 1-2 kids (51.20%). Combined monthly income was around 15,001 – 30,000 baht (35.40%). Most had their own houses (63.20%), as single houses (48.50%). Most had a bachelor's degree (46.80%) and were employed as private workers (23.70%).

Quality of working life of people aged 40 and over but younger than 60 years in Songkhla Province.

Table No. 2 Summary of mean, standard deviation and rating of quality of working life of people aged 40 and over but younger than 60 years in Songkhla Province.

Quality of working life	Score			
	Mean	Standard deviation	Rating	Ranking
1) Adequate and fair reward	3.49	.68	Moderate	8
2) Safe and health-promoting environment	3.67	.57	High	4
3) Occupational prosperity and stability	3.65	.76	High	5
4) Capability improvement	3.78	.75	High	2
5) Cooperation with the society	3.97	.59	High	1
6) Freedom of expression	3.70	.66	High	3
7) Work-life balance	3.51	.69	High	7
8) Social responsibility activities	3.56	.72	High	6
Overall quality of working life	**3.67**	**.58**	**High**	

According to Table No. 2, the sample group had high satisfaction related with quality of working life, with the average of being 3.67. The highest-ranking item was cooperation with the society (high), with mean score of 3.97. The second highest-ranking item was capability improvement (high) with mean score of 3.78. The third was freedom of expression (high) with mean score of 3.70. The fourth was safe and health-promoting environment (high) with mean score of 3.67. The fifth was occupational prosperity and stability (high) with mean score of 3.35. The sixth was social responsibility activities (high) with mean score of 3.56. The seventh was work-life balance (high) with mean score of 3.51. The eight was adequate and fair reward (moderate) with mean score of 3.49.

Healthcare service needs of people aged 40 and over but younger than 60 years in Songkhla Province.

Table No. 3 Summary of mean, standard deviation and rating of healthcare service needs of people aged 40 and over but younger than 60 years in Songkhla Province.

Healthcare service needs	Score			
	Mean	Standard deviation	Mean	Standard deviation
1) Care,	3.69	.71	High	4
2) Treatment,	3.72	.76	High	2
3) Rehabilitation,	3.74	.81	High	1
4) Mental,	3.66	.76	High	5
5) Social	3.71	.76	High	3
Overall healthcare service needs	**3.71**	**.67**	**High**	

According to Table No. 3, the sample group had overall high rating of overall healthcare service needs with mean being 3.71. The highest-rated item was rehabilitation (high), with mean score being 3.74. The second highest-ranking item was treatment (high) with mean score of 3.71. The third was social (high) with mean score of 3.69. The fourth was care (high) with mean score of 3.67. The fifth was mental (high) with mean score of 3.66.

Level of elderly caregiving organization needs of people aged 40 and over but younger than 60 years in Songkhla Province.

Table No. 4 Summary of mean, standard deviation and rating of level of elderly caregiving organization needs of people aged 40 and over but younger than 60 years in Songkhla Province.

Elderly caregiving organization needs	Score			
	Mean	Standard Deviation	Mean	Standard Deviation
1) Hospital,	3.11	.97	Moderate	2
2) Nursing homes	3.13	1.07	Moderate	1
3) Senior house	2.61	1.20	Moderate	5
4) Hospice	2.96	1.28	Moderate	4
5) Assisted living facility	3.06	1.26	Moderate	3
Overall elderly caregiving organization needs	**2.97**	**1.01**	**Moderate**	

According to Table No. 4, the sample group gave a moderate score on overall elderly caregiving organization needs, with mean score being 2.97. The highest-rated item was nursing homes (moderate), with mean score of 3.13 The second highest-ranking item was hospital (moderate) with mean score of 3.11. The third was assisted living facility (moderate) with mean score of 3.06. The fourth was hospice (moderate) with mean score of 2.96. The fifth was senior house (moderate) with mean score of 2.61.

Result of hypothesis test

Hypothesis test was done by multiple regression analysis to calculate coefficient of the variables. This approach was used to examine relationship between independent and dependent variables to determine the effect of the former on the latter. There were two hypotheses.

First hypothesis quality of working life of people aged 40 and over but younger than 60 years has effect on elderly caregiving organization after they become senior citizens.

Correlation coefficient of the variables were tested and found that the correlation coefficient was between .492 - .869, which was within an acceptable range (less than .90) (Aroian and Norris, 2000). This value indicated suitability of the variables for effect analysis. Most had statistical significance of .01 and no multicollinearity was found as shown in Table No. 5.

Table No. 5 Correlation coefficient of the variables

Variables	Y	X1	X2	X3	X4	X5	X6	X7	X8
Y	1								
X1	-.033	1							
X2	-.075	.785**	1						
X3	.015	-.003	-.041	1					
X4	.007	.830**	.626**	.016	1				
X5	-.088	.766**	.616**	-.004	.694**	1			
X6	-.069	.869**	.692**	-.011	.642**	.599**	1		
X7	.013	.720**	.769**	.031	.537**	.515**	.633**	1	
X8	-.015	.838**	.697**	.005	.567**	.492**	.705**	.672**	1

Note: n = 410 *p-value < .05, **p-value < .01

Then, the author compared difference between quality of working life and healthcare service needs, and found that overall, one item affected healthcare service needs with statistical significance of .05 as shown in Table No. 6.

Table No. 6 Comparison between differences in quality of life, work, and geriatric care organization characteristics

Model	SS	Df	MS	F	p-value
Regression	18.279	8	2.2285	2.012	.04*
Residual	455.458	401	1.136		
Total	**473.737**	**409**			

Note: n = 410 **p-value* < .05, ***p-value* < .01

The author used regression formula by entering. In this study, dependent variables were elderly caregiving organization (Y) and independent variables such as 1) Adequate and fair reward (X1), Safe and health-promoting environment (X2), Occupational prosperity and stability (X3), Capability improvement (X4), cooperation with the society (X5), freedom of expression (X6), Work-life balance (X7), and social responsibility activities (X8). Result of the analysis was shown in Table No. 7.

Table No. 7 Variables that affect elderly caregiving organization

Model	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value
	B	Std. Error	Beta		
Constant	3.743	.462		8.099	.000**
Adequate and fair reward (X1)	.453	.485	.242	.933	.351
Safe and health-promoting Environment (X2)	-.308	.147	-.191	-2.098	.037*
Occupational prosperity and stability (X3)	-.002	.074	-.001	-.025	.980
Capability improvement (X4)	.148	.150	.104	.989	.323
Cooperation with the society (X5)	-.338	.161	-.187	-2.096	.037*
Freedom of expression (X6)	-.286	.176	-.182	-1.625	.105
Work-life balance (X7)	.232	.116	.163	1.991	.047*
Social responsibility activities (X8)	-.051	.179	-.033	-.287	.774
R = 0.196, R2 = 0.039 Adjusted R2 = 0.019, Durbin-Watson = 1.456					

Note: *p-value < .05, **p-value < .01

Table No. 7 showed the Durbin-Watson value of 1.456 and revealed that two items related with quality of working life elderly caregiving organization: Safe and health-promoting environment (X2), cooperation with the society (X5) and Work-life balance (X7) with statistical significance of 0.05. A formula could be created as follow:

Y = 3.743 - 0.308 X2* – 0.338 X5*+ 0.232 X7*

The regression formula showed that the variables safe and health-promoting environment (X2) cooperation with the society (X5) and Work-life balance (X7) could predict the elderly caregiving organization at 3.90%, while the rest were factors other than those studied, and could be explained as follow:

The variable safe and health-promoting environment (X2) had coefficient of 0.308, meaning for every one unit of Safe and health-promoting environment quality, elderly caregiving organization would decrease by 0.308.

The variable cooperation with the society (X5) had coefficient of 0.338, meaning for every one unit of Safe and health-promoting environment quality, elderly caregiving organization would decrease by 0.338.

The variable work-life balance (X7) had coefficient of 0.232, meaning for every one unit of Work-life balance quality, elderly caregiving organization would increase by 0.232.

Second hypothesis Quality of working life of people aged 40 and over but younger than 60 years has effect on health service management needs after they become senior

citizens.

Correlation coefficient of the variables were tested and found that the correlation coefficient was between .492 - .869, which was within an acceptable range (less than 0.90) (Aroian and Norris, 2000). This value indicated suitability of the variables for effect analysis. Most had statistical significance of .01 and no multicollinearity was found as shown in Table No. 8.

Table No. 8 Correlation coefficient of the variables

Variables	YY	X1	X2	X3	X4	X5	X6	X7	X8
YY	1								
X1	.690**	1							
X2	.702**	.785**	1						
X3	.014	-.003	-.041	1					
X4	.595**	.830**	.626**	.016	1				
X5	.567**	.766**	.616**	-.004	.694**	1			
X6	.582**	.869**	.692**	-.011	.642**	.599**	1		
X7	.706**	.720**	.769**	.031	.537**	.515**	.633**	1	
X8	.577**	.838**	.697**	.005	.567**	.492**	.705**	.672**	1

Note: n = 410 **p-value* < .05, ***p-value* < .01

Then, the author compared difference between quality of working life and healthcare service needs, and found that overall, one item affected healthcare service needs with statistical significance of .05 as shown in Table No. 9.

Table No. 9 Comparison between quality of working life and healthcare service needs

Model	SS	Df	MS	F	p-value
Regression	160.796	8	20.100	74.081	.000[b]
Residual	108.799	401	.271		
Total	**269.595**	**409**			

Note: n = 410 *p-value < .05, **p-value < .01

The author used regression formula by entering. In this study, dependent variables were healthcare service needs (YY) and independent variables such as adequate and fair reward (X1), Safe and health-promoting environment (X2), Occupational prosperity and stability (X3), Capability improvement (X4), cooperation with the society (X5), freedom of expression (X6), Work-life balance (X7), and social responsibility activities (X8). Result of the analysis was shown in Table No. 10.

Table No. 10 Variables that affected healthcare service needs

Model	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value
	B	Std. Error	Beta		
Constant	.162	.226		.717	.474
Adequate and fair reward (X1)	.161	.237	.115	.681	.496
Safe and health-promoting environment (X2)	.289	.072	.237	4.021	.000**
Occupational prosperity and stability (X3)	.012	.036	.011	.340	.734
Capability improvement (X4)	.137	.073	.128	1.879	.061
Cooperation with the society (X5)	.119	.079	.087	1.507	.133
Freedom of expression (X6)	-.034	.086	-.029	-.394	.693
Work-life balance (X7)	.386	.057	.360	6.789	.000**
Social responsibility activities (X8)	-.025	.087	-.022	-.288	.774
$R = 0.772$, $R^2 = 0.596$, Adjusted $R^2 = 0.588$, Durbin-Watson = 1.936					

Note: *p-value < .05, **p-value < .01

Table No. 10 showed the Durbin-Watson value of 1.936 and revealed that two items related with quality of working life affected healthcare service needs: Safe and health-promoting environment (X2) and Work-life balance (X7) with statistical significance of 0.05. A formula could be created as follow:

$$Y = 0.162 + 0.289X2^* + 0.386\ X7^*$$

From the regression equation, the variables safe and health-promoting environment (X2) and Work-life balance (X7) could predict healthcare service needs after becoming senior citizen at 59.60%, the rest were variables other than those studied, and could be explained as follows:

The variable Safe and health-promoting environment (X2) had coefficient of 0.289, meaning for every one unit of Safe and health-promoting environment quality, healthcare service needs after becoming senior citizen would increase by 0.289.

The variable Work-life balance (X7) had coefficient of 0.386, meaning for every one unit of Work-life balance quality, healthcare service needs after becoming senior citizen would increase by 0.386.

Conclusion and Discussion

Result of this study could be discussed in following issues:

1. The sample group had similar number of males and females. Most aged between 55 – 60 years, were married, had 1-2 children, had 15,001 – 30,000 baht of total monthly income, owned a single house, had a bachelor's degree, and were employed in private entities.

2. Quality of working life of people aged 40 and over but younger than 60 years in Songkhla Province was rated high with mean score of 3.67. This was consistent with the

economic climate in Songkhla Province that saw the highest industrial investment and border trading of 586,000 baht in 2020 (Summary of the Economy of the Southern Region, 2020, p. 1), and consistent with Khumdet (2017, p. 34) which stated that good economy would lead to good bonus and welfare, along with improved quality of working life. In addition, the good economy would mean more acceptance of quality of working life.

3. Healthcare service needs of people aged 40 and over but younger than 60 years in Songkhla Province after becoming senior citizen was shown to be high, with mean score of 3.71, and the most needed item was rehabilitation (3.74), followed by treatment (3.72). This concurred with Ministry of Public Health (2016) which stated that after turning 60, people would have conditions and illnesses that required rehabilitation to resume normal life. Pongdee and Kuhirunyaratn (2015, p. 566) also found that once becoming a senior citizen, physical health maintenance and rehabilitation was the top priority while others would be of low and moderate priority.

4. Study of quality of working life of people aged 40 and over but younger than 60 years s and elderly caregiving organization showed that quality of working life of people aged 40 and over but younger than 60 years affected elderly caregiving organization in three ways, from the most important to the least: cooperation with the society, Safe and health-promoting environment and work-life balance, respectively. These items had statistical significance of .05 and could be used to predict the type of elderly caregiving organization in Songkhla Province at the rate of 3.90%. This concurred with Moschis (2003, p. 522) which found that wealthy senior citizens loved convenience, caregiver and service. Worcester (2000, p. 135) found that senior citizens loved freedom, social interaction and activities. Ketphichayawattana and Kongboon (2020, pp. 17-18) found that senior citizens would have accidents such as falling and other behaviors such as exercise or drinking. Senior citizens would have poor eyesight and limitation on traveling alone, which required caregivers at all times. Elderly caregiving organizations thus had to provide services as stated. At the same time, if the environment was safe, people aged 40 and over but younger than 60 years would need less of hospice, senior house, assistive facility and nursing home. This might be concluded that safe environment would lead to better health, and thus less need for long-term care facility as the elderly could go to the hospital and come back home. Gedaly-Duff, Hanson and Coehlo (2010, p. 56) also found that good pre-elderly environment would lead to good health and less dependence on facilities. Niara (2019, p. 1) from the WHO also stated that good health came from good environment.

5. Study of quality of working life of people aged 40 and over but younger than 60 years as impact on healthcare service needs after becoming senior citizens revealed that two items related with quality of working life of people aged 40 and over but younger than 60 years that would affect healthcare service needs after becoming senior citizens: work-life balance and safe and health-promoting environment, with statistical significance of .01, that could predict elderly caregiving organizations in Songkhla Province at 59.60%. This concurred with Huang (2006, p. 404) which

stated that healthcare was balancing, and if life quality was balanced, mental care would increase and turn into a habit. If professional prosperity and stability increased, there would be larger saving after retirement and thus the need of healthcare service as they could afford more.

Research Suggestions

1. Prince of Songkla University, Hatyai Campus along with other public or private organizations that would build elderly caregiving facilities should enact a policy in such construction to prioritize nursing homes, hospital, and assistive living facility respectively. Health service should be prioritized on rehabilitation, treatment and social interaction.

2. Operators of elderly healthcare service might reach out to potential customers in people aged 40 and over but younger than 60 years. The first group that had high work-life balance would need more elderly healthcare service organization and service after becoming senior citizens, while the second group that had highly safe and health-promoting environment would not need organization as much but still need more health service.

3. Preparation for establishment of elderly caregiving organization should not be excessively big, or too focused on long-term activity or overnight stay, but should be focused on the three services as daily services or short stay.

Suggestions for Future Research

Future research should cover data from other provinces in Southern Thailand, due to high investment requirement in elderly caregiving organization and service, thus customers from other provinces should be sought as well.

Bibliography

Aroian, K. J., and Norris, A. E. (2000). Resilience, stress, and depression among russian immigrants to Israel. **Western Journal of Nursing Research**, 22(1), 54–67.

Bagwell, K., and Staiger, R. W. (2010). The world trade organization: Theory and practice. **Annu Rev. Econ.**, 2(1), 223-256.

Barker, A., and Bullook, R. (2005). Delayed discharge in older people's mental health beds. **Old Age Psychiatrist Newsletter**, 13, 9.

Best, J. W., and Kahn, J. V. (2006). **Research in education** (10th ed.). Cape Town: Pearson Education.

Bresnick, J. (2013). A novel biometrics method to secure wireless body area sensor networks for telemedicine and m-health. **Communications Magazine, IEEE**, 44(4), 73-81.

Bundhamcharoen, K., and Sasat, S. (2009). Long-term care: Comparative analysis for policy recommendation. **Ramathibodi Nursing Journal**, 14(3), 385-399.

Burger, S., and Stretch, D. (2010). Advantage and choice: Social relationships and staff assistance in assisted living. **The Journals of Gerontology Series B: Psychological Sciences and Social Sciences**, 65(3), 358-369.

Changkid, N., and Tawepng, P. (2020). Labour productivity value of the elder in Suratthani.

Journal of Business, Economics and Communications, 15(2), 166-179.

Department of Mental Health. (2009). **Handbook entitled "5 dimensions of happiness for the elderly** (revised version). Nonthaburi: Office of Mental Health Promotion and Development, Department of Mental Health, Ministry of Public Health.

Department of Older Persons. (2015). Regulations of the department of older persons regarding the service of the elderly, 2015. Bangkok: Department of Older Persons.

Department of Older Persons. (2021). **Statistics of the elderly in Thailand, 2020.** Bangkok: Department of Older Persons.

Department of Provincial Administration. (2017). **Statistics of the elderly in Thailand in 77 provinces as of December 31, 2016.** Retrieved from https://www.dop.go.th/download/knowledge/knowledge_th _20170707092742_1.pdf

Department of Provincial Administration. (2018). **Statistics of the elderly in Thailand in 77 provinces as of December 31, 2017.** Retrieved from https://www.dop.go.th/download/knowledge/th1533055363-125_1.pdf

Department of Provincial Administration. (2019). **Statistics of the elderly in Thailand in 77 provinces as of December 31, 2018.** Retrieved from https://www.dop.go.th/download/knowledge/th1550973505-153_0.pdf

Department of Provincial Administration. (2020). **Statistics of the elderly in Thailand in 77 provinces as of December 31, 2019.** Retrieved from https://www.dop.go.th/download / knowledge/th1580099938-275_1.pdf

Department of Provincial Administration. (2021a). **Statistics of the elderly in Thailand in 77 provinces as of December 31, 2020.** Retrieved from https://www.dop.go.th/download/knowledge/th1610815306-335_0.pdf

Department of Provincial Administration. (2021b). **Number of births from registration by sex, region and province, 2011-2020.** Retrieved from http://statbbi.nso.go.th/staticreport/Page/sector/TH/report/sector_01_11301_TH_.xlsx

Eliopoulos, C. (2005). **Gerontological nursing** (6th ed.). Philadelphia: Lippincott Williams & Willkins.

Gedaly-Duff, V., Hanson, S. M. H., and Coehlo, D. P. (2010). **Family health care nursing: Theory, practice and research**. FA: Davis Company.

Gues, L. W. (2010). Assessment of the older adults. In **K. L. Mauk (ed.), Gerontological nursing: Competencies for care**. Boston: Jones and Bartlett Publishers.

Harrington, C., Carrillo, H., Mullan, J., and Swan, J. H. (2003). Nursing home staffing turnover and case mix. **Medical Care Research and Review**, 60(2), 366-392.

Hatch, M. J. (2012). **Organization theory: Modern, symbolic and postmodern perspectives.** Oxford: Oxford University Press.

Huang, Y. (2006). A neo-confucian conception of wisdom: Wang Yangming on the innate moral knowledge (liangzhi). **Journal of Chinese Philosophy**, 33(3), 393-408.

Juthberg, C., Eriksson, S., Norberg, A., and Sundin, K. (2010). Perceptions of conscience, stress of

conscience and burnout among nursing staff in residential elder care. **Journal of Advanced Nursing**, 66(8), 1708-1718.

Ketphichayawattana, J., and Kongboon, P. (2020). **Policy studies and operations prevention of elderly's falls in Thailand**. Lecture Handouts. Bangkok: Faculty of Nursing, Chulalongkorn University.

Khumdet, S. (2017). **A study of individual characteristics, economic, social, environment in organization and personal information factors affecting the quality of employees' work life in private companies.** Master Independent Study, M.B.A., Bangkok University, Bangkok.

Kirk, T. W., and Mahon, M. M. (2010). National hospice and palliative care organization (NHPCO) position statement and commentary on the use of palliative sedation in imminently dying terminally ill patients. **Journal of Pain and Symptom Management**, 39(5), 914-923.

Kovacic, J. C., Moreno, P., Nable, E. G., Hachinski, V., and Fuster, V. (2011). Cellular senescence, vascular disease, and aging part 2 of a 2-part review: Clinincal vascular disease in the elderly. **Circulation**, 123(17), 1900-1910.

Mason, A., and Lee, R. (2004). **Reform and support systems for the elderly in developing countries: Capturing the second demographic dividend.** Beijing: China Centre for Economic Research, Peking University.

Miller, E. A., Mor, V., and Chark, M. (2010). Reforming long-term care in the United States: Findings from a national survey of specialists. **The Gerontologist**, 50(2), 238-252.

Ministry of Public Health. (2016). **Guide to medical practice in taking care of stroke patients in the community with traditional Thai and alternative medicine.** Prachinburi: Prachinburi Provincial Public Health Office, Ministry of Public Health.

Ministry of Social Development and Human Security. (2010). **The 2nd national plan on the elderly 2002-2021.** Bangkok: Ministry of Social Development and Human Security.

Moschis, G. P. (2003). Marketing to older adults: An updated overview of present knowledge and practice**. Journal of Consumer Marketing**, 20(6), 516-525.

National Social Economic Development Agency. (2017). **National economic and social development plan twelfth edition 2017-2021.** Bangkok: Office of the National Economic and Social Development Board. Office of the Prime Minister.

National Statistical Office. (2019). **Songkhla provincial statistical report.** Songkhla: Songkhla Provincial Statistical Office, National Statistical Office.

Niara, M. (2019). **Healthy environment for healthier people. why is this important and what we can do?** Nonthaburi: World Health Organization Thailand.

Orem, D. E. (2001). **Nursing concept of practice.** St Louis: Mosby-Yearbook.

Patchara-arpa, P. (2016). **Situation of the elderly, the elderly and their families, communities, and society.** Bangkok: Department of Older Persons.

Pongdee, J., and Kuhirunyaratn, P. (2015). Problems and health needs of the elderly in the area

of responsibility of the Muang Baeng tambon health promotion hospital, Nong Ya Phung sub-district, Wang Sa Phung district, Loei province. **Community Health Development Journal of Khon Kaen University**, 3(4), 561-576.

Population Reference Bureau. (2017). **2016 World population data sheet.** Retrieved from https://www.prb.org/wp-content/uploads/2016/08/prb-**wpds2016**-web-2016.pdf

Population Reference Bureau. (2018). **2017 World population data sheet.** Retrieved from https://www.prb.org/wp-content/uploads/2020/12/World-Population-Data-Sheet-2017-english.pdf

Population Reference Bureau. (2019). **2018 World population data sheet.** Retrieved from https://www.prb.org/wp-content/uploads/2018/08/2018_World-Population-data-sheet.pdf

Population Reference Bureau. (2020). **2019 World population data sheet.** Retrieved from https://pdf.usaid.gov/pdf_docs/PA00WH96.pdf

Population Reference Bureau. (2021). **2020 World population data sheet.** Retrieved from https://www.prb.org/wp-content/uploads/2020/07/letter-booklet-2020-world-population.pdf

Prince of Songkla University. (2020). **Study report of international health center**. Songkhla: Prince of Songkla University.

Routasalo, P. E., Tilvis, R. S., Kautiainen, H., and Pitkala, K. H. (2009). Effects of psychosocial group rehabilitation on social functioning, loneliness and well-being of lonely, older people: Randomized controlled trial. **Journal of Advanced Nursing**, 65(2), 297-305.

Sasat, S., and Phakdiphrom, T. (2009). Nursing care system for the elderly. **Journal of Demography**, 25(1), 45-62.

Simmons, S. F., Rahman, A., Beuscher, L., Jani, V., Durkin, D. W., and Schnelle, J. F. (2011). Resident-directed long-term care: Staff provision of choice during morning care. **The Gerontologist**, 51(6), 867-875.

Songkhla Provincial Administrative Organization. (2020). **Report of service for the elderly, elderly nursing center, december 2020.** Songkhla: Songkhla Provincial Administrative Organization.

Statistical Office Songkhla Province. (2020). **Analysis and summary of situation of the elderly: 2017**. Retrieved from http://songkhla.nso.go.th/index.php?option=com_content&view=article&id=226: mind-map-older&catid=105:2012-01-09-07-07-49&Itemid=510.

Summary of the Economy of the Southern Region. (2020). Retrieved from https://www.longtunman.com/25643

Sutirawut, P. (2010). **Project monitoring, support and evaluation.** Songkhla: Institute of Health System Management of Prince of Songkla University.

Thai-Journal Citation Index Centre. (2020). **TCI database**. Retrieved from https://tci-thailand.org/#

Trilerklith, S., Rungsayatorn, S., and Hirunwong, A. (2014). Quality of life and retirement

preparation of school teachers in Chon Buri province. **Kasetsart Journal (Social Sciences)**, 35, 460-471.

Vanichbuncha, K. (2005). **Statistics for research**. Bangkok: Chulalongkorn University.

Wada, K., and Shibata, T. (2004). Effects of robot-assisted activity for elderly people and nurses at a day service center. **Proceedings of the IEEE**, 92(11), 92.

Walton, R. E. (1974). Improving quality of work life. **Harvard Business Review**, 15(5), 12-16.

Watson, J. (2008). **Nursing: The philosophy and science of caring**. Cololado: University Press of Colorado.

Worcester, R. (2000). Challenges of the demographic shift. In **Age concern/ ITC panel, money, 27 November 2000.** New York: UN Population Division.

Wutikorn, K. (2016). **Competency development pattern for elderly caregivers.** Doctoral dissertation, Ph.D., Burapha University, Chonburi.

Yamane, T. (1973). **Statistics.** New York: Harper and Row.

Yashida, M. (2004). Management of detrusor dysfunction in the elderly: Changes in acetylcholine and adenosine tri phosphate release during aging. **Urology**, 63(3), 17-23.

Yoshikawa, T., Cobb, E. L., and Smith, K. B. (1993). Vulvovaginal examinations in elderly nursing home women residents. **Archives of Gerontology and Geriatrics**, 31(1), 1-4.