Factors Affecting Quality of Life of the Elderly in Thailand

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Abstract

This article is intended for educational purposes in the quality of life of the elderly in Thailand, factors affecting quality of life in the elderly in Thailand and suggestions for the needs of the elders in Thailand. Sample of this research are 1,436 elderly people who are in the name list of the elderly club in the province of Thailand and use the World Health Organization quality of life test as research instrument. Data analysis are frequency, percentage, mean, standard deviation and multiple linear regression analysis to determine all variables in the regression. The result indicate that the quality of life of the elderly in Thailand was at a moderate level ($\overline{x} = 3.43$, S.D. = 0.37) and the factors that affected the quality of life of the elderly were 0.87 (R2 = 0.87), it means that independent variables can describe the quality of life of the elderly in Thailand 87.00%. The most effective factors in order on the quality of life of the elderly in Thailand are Health promotion behaviors: Social behavior, Health promotion behaviors: Living behavior, Materials, finance and labor support. Suggestions of Elderly in Thailand are the needs to increase the premium for the elderly that suit the economic conditions, vocational training for the elderly and participate in social events

Keywords: Quality of Life, Elderly, Thailand

Introduction

Technology progress on the medical and public health worked in all countries around the world including Thailand. The population have more longevity and lower fertility that culminate in the proportion of elderly people increases rapidly. It's causing all countries around the world including Thailand become the aged society. According to the aging world population changed, Thai population have the upward trend on people aged 60 and over. There are the elderly 6.8-7.6 million people in 2010 and increase to 10.8 million people in 2020. It also increase in the proportion of elderly population from the whole population and having a long live. The information shows that male have longevity to 68.15 years and female have longevity to 72.39 years (National Statistical Office, 2016). In 2016, Thailand has the elderly aged 60 and over around 11 million people of the Thai population 68.5 million people, it calculated to 16.5 percentage of all population. It can estimate Thailand turned into fully "Aged Society" and due to the elderly aged 60 and over extend more than 20% in 2021 (Foundation of Thai Gerontology Research and Development Institute (TGRI), 2017).

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Many Thai elderly suffer from quality of life problems as a result of Needs factor, Health promotion behaviors factor, Self-esteem factor and Social support factor (Coopersmith, 1992: 15 - 16; Layard, 2007: 165 - 172; House, 1981: 202; Department of Mental Health, 2011:13 and Kanjanopas, P., 2008: 23). Those factors are the essential factors related to quality of life in the elderly because it pushes to the diverse behaviors of people forward such as depression and separate oneself from a group. In addition, social changing also has an impact on the elderly which consist of changing in family and society. Changing in family found that the elderly are depreciated role from head of the family to person who is treated by descendant. Some elderly was left alone.

Changing in society from agricultural society to industrial society make many elderly convert their career. Besides the retirement cause elderly are depreciated role and participation in social activities is reduced. The elderly are dependent on daily activities as well as activities necessary for living have an impact on the quality of elderly life that need adjustment and development because the quality of life in the elderly influenced the whole Economy and society (Westaway, 2009).

To improve the quality of life in the elderly, it is necessary to understand various factors for reaching the root cause and needs of the elderly. The research on the elderly has found that there is limited. Most of research provides economics, society and the elderly information in general. It related to the elderly field in a wide range of areas (Chayowan and Siriboon, 1995: 18-19). Although there is extensive research on the quality of life of the elderly. The review determine limited area of study or just focus on one point, so the research results are lack of continuity, cannot form into big picture and difficult to see and determine the missing spots (Petchurai and Viriyavetchakul, 1995: 5-6). The related research about the quality of life in the elderly such as the synthesis of mental and social characteristics related to quality of life which was found that many research mainly used the complete World Health Organization quality of life test that has 26 dimensions. The researcher has suggestion to review integrated creation of variables affected the quality of life in the elderly from the conceptual theories that integrate knowledge by the multidisciplinary field both psychological and social (Foundation of Thai Gerontology Research and Development Institute (TGRI), 2017). Therefore, the research of factors affecting quality of life in the elderly in Thailand is the study about requisites influence quality of live in the elderly by synthesize both psychological and social variables to explain elderly quality of life. Research question are what factors affecting to the quality of life in the elderly and what the elderly need from relevant agencies for improving quality of life.

Research Objectives

This research has three purposes as 1) To study about quality of life in the elderly in Thailand 2) To study factors affecting quality of life in the elderly in Thailand and 3) To study suggestions on the needs of the elderly in Thailand.

Hypothesis

Health promotion behaviors factor, Self-esteem factor, Social support factor and Happiness factor are the factors affecting quality of life in the elderly in Thailand.

Research Methodology

Researcher use quantitative method in this research for finding factors affecting quality of life in the elderly in Thailand. Population of the research are 3,487 elderly people in Thailand and also have the name in the name list of the elderly club in the province of Thailand. Total population are 9,621,000 people. Sample of the research are the elderly people in Thailand

Asian Political Science Review Volume 2 Number 2 (July-December 2018) and also have the name in the name list of the elderly club in the province of Thailand by using approach to set the size and sampling. Firstly, the researcher set the sample size by using the program G^*Power by choosing Multiple linear regression: Fixed model, R^2 deviation from zero and specify effect size = 0.02, error prob. = 0.05 and power (1-B error prob.) = 0.95. It was because the researcher do not know historical parameter estimation thus the researcher use the predefined scale size and specify effect size = 0.02 due to the large sample size, N > 10,000 (Faul, Erdfelder, Lang, & Buchner, 2007: 124-125) and decide Confidence Level at 0.95 and Level of significance at 0.05. The sample size was 1,436 people. Secondly, the researcher calculate the number of elderly clubs by using method of Taro Yamane as 358.83 the elderly clubs and adjust it to 359 the elderly clubs that is integer. Thirdly, the researcher classify the elderly club by the region Thailand as shown in Table 1.

Table 1 Number of the elderly clubs which are sample

Region	Number of Elderly Clubs	Percentage	Proportion No. of Elderly Clubs
Northeast	2,111	60.53	217
Northern	684	19.61	70
Central	569	16.31	59
Southern	123	3.55	13
Total	3,487	100.00	359

Then, the researcher use simple random sampling with the name list of the elderly clubs followed the proportion of each region in Thailand until complete 359 Clubs. Lastly, after the researcher got the name list of the elderly clubs followed the proportion of each region in Thailand, researcher also use simple random sampling the name from the name list of the elderly who have name in that elderly clubs by each of 359 clubs choose 4 sample until complete 1,436 sample.

Research instrument can be divided into 4 part as: First, Questionnaire ask about demographic 4 questions such as gender age and status occupation which in the form of checklist. Second, Questionnaire ask about factors affecting quality of life in the elderly in Thailand 16 factors and conduct in form of the Likert Scale which is a five pointscale. Then, Questionnaire from World Health Organization Quality of Life Brief - Thai (WHOQOL - BREF - THAI) that are composed of 4 sectors as 1) Physical domain 2) Psychological domain 3) Social relationships and 4) Environment and conduct in form of the Likert Scale which is a five pointscale. Last, Questionnaire about the needs of the elderly in Thailand and conduct in the form of open-ended question.

There are measurement variables as the independent variables used in this research derived from literature review of theoretical concepts and related research which about factors affecting quality of life in the elderly in Thailand. The researcher synthesized the factors to be independent variables in studying the factors affecting the quality of life of the elderly in Thailand, as summarized in Table 2.

Table 2 Factors or Independent variables

Factors/Independent variables	Concept/Theory/Research
Self-esteem factor	Coopersmith (1992)
1) Self-view	Layard (2007)
2) Relationships with other	
3) Creative thinking	

Table 2 (Con.)

Factors/Independent variables	Concept/Theory/Research		
Social support factor	House (1981)		
1) Emotional support			
2) Estimation compare with behavior support			
3) Information support			
4) Material, finance or labor support			
Happiness factor	Department of Mental Health (2011)		
1) Health	Layard (2007)		
2) Recreation			
3) Integrity			
4) Cognition			
5) Peacefulness			
Health promotion behaviors factor	House (1981)		
1) Health promotion behaviors: Eating behavior	Kanjanopas, P. (2008)		
2) Health promotion behaviors: Sleeping behavior			
3) Health promotion behaviors: Living behavior			
4) Health promotion behaviors: Social behavior			

There are measurement variables as the dependent variables in this research, researcher use the framework of the World Health Organization Quality of Life Brief - Thai (WHOQOL - BREF -THAI) (Department of Mental Health (1997) which consist of 4 sectors as 1) Physical domain 2) Psychological domain 3) Social relationships and 4) Environment.

Research Findings

The research on factors affecting quality of life in the elderly in Thailand can be concluded as:

Frequency analysis results and the percentage of general information of respondents showed that the majority of the respondents were female 830 persons that can calculate as 57.80 percentage and 606 male respondents that can calculate as 42.20 percentage. The respondents age between 70-79 years old about 614 person that can calculate as 42.75 percentage, followed by 60-69 years old about 541 people accounted for 37.67 percentage and the smallest age group was 80 years or older around 281 persons or 19.58 percentage. The 662 respondents was employed that can calculate as 46.10 percentage, and no occupation 774 persons accounted for 53.90 percentage.

Quality of life in the elderly in Thailand analysis results use World Health Organization Quality of Life Brief - Thai (WHOQOL - BREF - THAI) found that the quality of life in the elderly in Thailand was at a moderate level ($\bar{x} = 3.43$, S.D. = 0.37). Focus on the detailed, the two factors are in the high level and are in the middle level of 2. In descending order, it were social relationships ($\bar{x} = 3.56$, S.D. = 0.47), psychological domain ($\bar{x} = 3.47$, S.D. = 0.28), physical domain ($\bar{x} = 3.38$, S.D. = 0.31) and the environmental aspect ($\bar{x} = 3.31$, S.D. = 0.41). Factors affecting the quality of life of the elderly in Thailand analysis results use multiple linear regression analysis indicated that the factors affecting the quality of life of the elderly in Thailand at a significant level of 0.05 were 12 variables in accordance with the hypothesis of the research set out in Table 3 as follows:

Table 3 Analysis result of factors affecting the quality of life of the elderly in Thailand

Dependent Variable: General quality of life in the elderly in Thailand

Sample: 1,436 Constant: 0.762 R = 0.903 Method: Enter Method

Sample. 1,430 Constant. 0.702 K = 0.703	Wethod. Enter Wethod				
Variables	Coefficient	Std. Error	t-Statistic	Sig.	
	Beta				
Health promotion behaviors: Social	0.497	0.045	12.178	0.000	
behavior X16					
Health promotion behaviors: Living	0.396	0.031	12.510	0.000	
behavior X15					
Material, finance or labor support X7	0.229	0.048	5.763	0.000	
Health X8	0.104	0.106	7.372	0.000	
Relationships with other X2	0.102	0.035	5.218	0.000	
Recreation X9	0.098	0.025	4.940	0.000	
Emotional support X4	0.089	0.018	5.566	0.000	
Peacefulness X12	0.054	0.029	3.809	0.000	
Health promotion behaviors: Eating	0.043	0.037	2.107	0.035	
behavior X13					
Integrity X10	0.042	0.036	2.051	0.037	
Health promotion behaviors: Sleeping	0.040	0.025	1.954	0.039	
behavior X14					
Cognition X11	0.039	0.033	1.928	0.039	
S.E. of regression					
R-squared	0.816	Adjusted R-squared		0.815	
Prob. (F-statistic)	0.000	F-statistic		575.074	

From Table 3, it can be concluded that First, factors affecting the quality of life of the elderly in Thailand in general at a significant level of 0.05 were 12 variables. The multiple correlation with quality of life in the elderly in Thailand is 0.903 (R = 0.903). It mean that all 12 variables have correlation with quality of life in the elderly in Thailand at level of significance 0.05 and have the high level of relationships at 90.30 percentage. Second, the 12 variables were used, it bring about changing in the quality of life of the elderly in Thailand 0.816 (R2 = 0.816). It mean that all 12 variables can describe the quality of life of the elderly in Thailand at 81.60 percentage. Lastly, factors affecting the quality of life among the elderly in Thailand are as follows. First, Health promotion behaviors: Social behavior (X16) when changing one unit, it will affect the quality of life of the elderly in Thailand in the same direction 0.497. Second, Health promotion behaviors: Living behavior (X15) when changing one unit, it will affect the quality of life of the elderly in Thailand in the same direction 0.396. Last, Material, finance or labor support (X7) when changing one unit, it will affect the quality of life of the elderly in Thailand in the same direction 0.229.

Therefore the constant is 0.762 and know the weight of essential predictor in the form of Beta. Thus, the regression equation for the quality of life of the elderly in Thailand can be create at levels of significance 0.05 by 12 variables as follows:

Regression equation in Beta form is Z = B1(Z1) + B2(Z2) + B3(Z3) + ... + B12(Z12)

Substitution into formula Z = 0.102 (Z2) + 0.089(Z4) + 0.229(Z7) + 0.104(Z8) + 0.098(Z9) + 0.042(Z10) + 0.039(Z11) + 0.054(Z12) + 0.043(Z13) + 0.040(Z14) + 0.396(Z15) + 0.497(Z16)

Z = the quality of life of the elderly in Thailand in the form of Beta.

Analysis result of suggestions on the needs of the elderly in Thailand using text grouping can be sorted in ascending order as the needs to increase the elderly's premiums is appropriate for the present economic condition (f = 114), to have more on public relations in vocational

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training for the elderly (f = 98) and to participate more in social activities (f = 56).

Discussion and Conclusion

Research of factors affecting the quality of life of the elderly in Thailand has issues that can lead to the discussion of research results.

Analysis result of the level quality of life of the elderly in Thailand

About the quality of life of the elderly in Thailand, the results of the study showed that the quality of life of the elderly in Thailand was at a moderate level. This is because Thailand has entered the aged society. Relevant agencies have been awaken about that situation. They has been planned to work in preparation for entering the aged society in various areas and also planned to have various types of elderly support programs. However, in the past it was found that the work about the quality of life of the elderly was separated. Eventhough they work like network, but it is an incomplete network and there is no serious and continuous cooperation so that public services delivery to the elderly is not effective. Most of Elderly services are the responsibility of the government agency such as the payment of subsistence allowances, exercises, vocational training and education. The agency is lack of innovation in public service provision because they have limited personnel and budget.

About the quality of life of the elderly in Thailand in part of social relationships and psychological. The results of the research is in the high level. This is because nowadays the elderly in Thai society have more recreation and social benefit activities. In addition, they use social network to contact and build the relationship in the society. The elderly have been involved in social benefits such as the opportunity to care and help others. This is a great way to make yourself feel better about yourself and others as improving your self-esteem. The feeling of being a part of society or social integration and being accepted in the institution, family or friend. It also brings about the exchange of ideas, feelings, information, concern and compassion towards one another that leading to a positive feeling of the mind of the elderly. When the quality of life of the elderly in Relationships with other aspect is high, the quality of life of the elderly in mental aspect will be high especially in the elderly in rural society who still was respected. The community also encourages the elderly to make merit at the temple or charity. The descendant and neighbor also give importance and value to the elderly which is the uniqueness of Thai society in the rural areas where families live as extended family and have a good relationship with each other. As a result, the quality of life of the elderly in Thailand in social relationships and psychological domain are very high. The result of this research is consistent with the concept of Coopersmith (1992: 15-16); Sasuad (2015) and Boonphadung (2011: 80) explained that social relationships directly affect the minds of people, helps people have good mental health and happiness in life which lead to better quality of life of the person.

About the quality of life of the elderly in Thailand in the physical domain, the results of the research found that it is in the medium. This is because elderly generally have experience in physical changing. This may cause anxiety for the elderly in the early stages of old age (Jatapanakul et al., 1999: 11-12). The physical changing also affects the health status and ability to perform various activities of the elderly which affecting the quality of life of the elderly. Moreover, the elderly in Thailand especially the elderly in rural areas still have food problems (Kurtus, 2018; Chernoff, 2001: 47-53), lack of access to medical equipment and products or goods for elder care for example a walk-aid device. Those products or goods are at relatively high price because most of them imported from abroad. They also lack of knowledge to take care of their own health, lack of proper exercises and have nutrition that is not suitable for the elderly. As a result, the quality of life of the elderly in Thailand in the physical domain was moderate.

Asian Political Science Review Volume 2 Number 2 (July-December 2018) About the quality of life of the elderly in Thailand in the environmental domain, the research results were found to be moderate. This is because the environment in Thailand rapidly changes lead to changing in the concept of the majority of elderly. At present, the culture embraces materialism and measuring values of people by their ability to work. (Suvanashiep, 2011: 142-143). As a result, the offspring began to change their attitudes toward the elderly. The elderly are less valuable because they do not rely on the transfer of knowledge, occupation and experience as in the past. Extended family changes to be single family. When the child grows up, he or she will separate to build own family in the countryside and go out to work in other areas. They leave the elderly alone and deprived especially in the impoverished family found that elderly will be more. The elderly often associated with the environment, living and social communities that are used. They do not want to change or reduce the role of the head of family to family members so that they do not want to live with the families of the children which may cause problems as lack of honor, lack of respect, and lack of interest and support each other. When the environment changes, elderly who cannot adapt will affect the quality of life of the elderly.

Analysis result of Factors affecting the quality of life of the elderly in Thailand

Analysis result of factors affecting the quality of life of the elderly in Thailand is using multiple linear regression analysis discovered that factors affecting the quality of life of the elderly in Thailand at the 0.05 level were 12 variables which can be discussed as follows.

Health promotion behaviors: Social behavior (X16 Beta = 0.497) and relationships with other (X2 Beta = 0.102) were factors contributing to the quality of life of the elderly in Thailand at significant level 0.05 which accord with hypothesis. This is because Health promotion behaviors: Social behavior and relationships with other are factors that influence self-esteem of the elderly, create confidence in yourself, make elderly can adapt to social conditions, have reason, and understand and accept to adapt better to live in society happily. This will lead to improve quality of life for the elderly in both the social and psychological domain. In the rural society, greatly elderly are accepted by the community that will meet the social needs of the elderly. Health promoting behaviors, social factors, and relationships with others are factors contributing to the quality of life of the elderly in Thailand. This is consistent with the concept of Coopersmith (1992: 15-16), House (1981: 202) and Karnganophas (2008: 23). They explained health promotion behaviors: Social behavior factor have positively affect the quality of life of the elderly which make the elderly happy in the society and have a good quality of life.

Health promotion behaviors: Living behavior (X15 Beta = 0.396), Health promotion behaviors: Eating behavior (X13 Beta = 0.043) and Health promotion behaviors: Sleeping behavior (X14 Beta = 0.040) are factors impact on the quality of life of the elderly in Thailand at level of significance 0.05 which consistent with research hypothesis. Health promotion behaviors: Living behavior, Health promotion behaviors: Eating behavior (X13 Beta = 0.043) and Health promotion behaviors: Sleeping behavior are factors make the elderly to stay normal because these factors support the elderly activities in daily life for making the elderly healthy and enjoy life. To conclude, Health promotion behaviors: Living behavior, Health promotion behaviors: Eating behavior (X13 Beta = 0.043) and Health promotion behaviors: Sleeping behavior are factors affecting quality of life in the elderly in Thailand (Karnganophas, 2008: 23; Booncharean, 2010: 95-96).

Material, finance or labor support (X7 Beta = 0.229) and Emotional support (X4 Beta = 0.089) are factors impact on the quality of life of the elderly in Thailand at level of significance 0.05 which consistent with research hypothesis. Material, finance or labor support and Emotional support are social support factor contributes to improving the quality of life of individuals (House, 1981: 202; Esbensen, 2008). Material, finance or labor support is a direct help to the needs of the people. It will help to improve the lives of people.

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Emotional support is a psychological domain that is important for the behavior of individuals. This support come from the intimate such as a person in the family or from other people who have not direct relationships for example personnel or staff who involved in such behavior. The result of this support create better and happier lifestyle that will lead to better quality of life. So, Material, finance, labor support and emotional support are factors impact on the quality of life of the elderly in Thailand.

Health (X8 Beta = 0.104), Recreation (X9 Beta = 0.098), Peacefulness (X12 Beta = 0.054), Integrity (X10 Beta = 0.042) and Cognition (X11 Beta = 0.039) are factors impact on the quality of life of the elderly in Thailand at level of significance 0.05 which consistent with research hypothesis. Health, Recreation, Peacefulness, Integrity and Cognition are Happiness factor five dimensions which is the ability of the person to take care of physical health to be healthy or not addicted to drugs, enjoy life with the enjoyable activities, have self-satisfaction, self-esteem and self-confident, rationalize to planning and problem solving and also aware of feelings, know how to control their emotions and can manage their emotions effectively to relax and peace. The happiness factor of people is mental capability and the basic mental health that motivates and give confidence to them. As a result, it will bring happiness and good quality of life and feeling to be loved of other people. If the elderly are happy in these dimensions, the quality of life of the elderly will be improved (Layard, 2007: 165 - 172; Department of Mental Health, 2011: 13; Sasuad (2015) and Boonphadung (2011: 80). Health (X8 Beta = 0.104), Recreation (X9 Beta = 0.098), Peacefulness (X12 Beta = 0.054), Integrity (X10 Beta = 0.042) and Cognition (X11 Beta = 0.039) are factors impact on the quality of life of the elderly in Thailand.

Limitations of the Study and Suggestions for Future Research Suggestions to use the research results

The research results indicated that Health promotion behaviors factor, Happiness factor, Emotional support, Material, finance or labor support and Relationships with other are factors affecting the quality of life of the elderly in Thailand. In consequence, the researcher should be proposed to the agencies concerned with the care of the elderly, formulate the policy on improving the quality of life of the elderly in each of these factors, define guidelines for action and method of practice for the agencies involved in improving the quality of life of the elderly and integrated work of each agency under the context of the feasibility and suitability of the condition for efficient improving the quality of life for the elderly in Thailand.

Future research suggestions

Qualitative research should be developed to establish a core model for improving the quality of life for the elderly in Thailand and reference group research should be conducted as a model for improving the quality of life for the elderly in Thailand and also monitored and evaluated the model model for improving the quality of life for the elderly in Thailand.

References

- Booncharean, T. 2010. "A development of health promotion activities and quality of life model for aging in Nakhon Sawan". **Naresuan University Journal** 18 (1): 95-101.
- Boonphadung, S. 2011. **Developing the Life Quality of the Elderly by Applying Sufficiency Economy- Based Schooling (Phase I).** Bangkok: Suan Sunandha Rajaphat University.
- Chayowan, N. and Siriboon, S. 1995. The elderly in Social Sciences and Demographic. Research papers on the elderly in Thailand. Bangkok: Supachokpress.
- Chernoff, S. 2001. "Nutrition and health promotion in older adults." **Journal of Gerontology Series A: Biological Science and Medical** 56: 47-53.

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- Coopersmith, S. 1992. **The Antecedents of Self-Esteem.** California: Consulting Psychologists Press.
- Department of Mental Health. 1997. World Health Organization Quality of Life Brief Thai (WHOQOL BREF -THAI). Nonthaburi: Ministry of Public Health.
- Department of Mental Health. 2011. **Thai Mental Health Indicator Version 2007** = **TMHI-15.** Nonthaburi: Ministry of Public Health.
- Esbensen. B. 2008. Elderly persons living with cancer: Quality of life and lived experience. Ph.D. Dissertation, Lunds Universitet.
- Faul, F., Erdfelder, E., Lang, A.-G. & Buchner, A. 2007. "G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences." **Behavior Research Methods** 39: 175-191.
- Foundation of Thai Gerontology Research and Development Institute (TGRI). 2017. **Situation of the Thai elderly 2016.** Nakhon Pathom: Printery Co., Ltd.
- House. J. 1981. Work stress and social support. Massachusetts: Addison-Wesley.
- Jatapanakul, S. et al. 1999. Elderly Health Problems. Bangkok: Holistic Publishing.
- Karnganophas, P. 2008. The effectiveness of Health Education Program on Health Promotion Concerning Self Care Behaviors of the Elderly at Amphoe Nong Bua Rawe in Changwat Chaiyaphum. Master of Health Education Dissertation, Srinakharinwirot University.
- Kurtus, E. 2005. **Lifestyle factors affecting quality of life in late adulthood.** Retrieved from www.school-for-champions.com/health/lifestyle_elderly.htm.
- Layard, R. 2007. **Happiness: Lessons from a new science.** New York: Penguin.
- Petchurai, R. & Viriyavetchakul, A. (eds.). 1995. Citation on Research papers on the elderly in Thailand. Bangkok: Supavanit Publisher.
- Sasuad, K. 2015. Factors affecting the quality of life of the elderly in the Eastern Province. Chanthaburi: Faculty of Management Science, Rajaphat Rajanagarindra University.
- Suvanashiep, S. 2011. "Happiness and Mental Health of the Elderly in Thailand". **Journal of the Psychiatric Association of Thailand** 46 (3): 227-232.
- Westaway, M. 2009. "The impact of chronic diseases on the health and well-being of South Africans in early and later old age." **Archives of Gerontology and Geriatrics** 50 (2): 213-221.