

Factors Influencing Well-Being in the Elderly Living in the Rural Areas of Eastern Thailand

Kunwadee Rojpaisarnkit¹

This cross-sectional survey research was aimed at exploring the factors influencing the well-being of elderly people in rural areas of Eastern Thailand. The conceptual framework for the study was based on the PRECEDE model. Questionnaires were administered to 400 elderly by personal community-based interviews. According to the findings, it was found that age, occupation, social and religious activities, attitude toward life, relationship with the community, ability to perform daily activities, physical health status, and family relationships affected the well-being of the elderly at a 0.05 level of significance. On the contrary, gender, health problems, marital status, and education did not affect elderly well-being. Various factors affecting elderly well-being in Thailand's cultural context included social and religious activities, relationship with the community and family relationships, which support the cultural contexts of living together as an extended family, living in a caring community and living in Buddhist communities. The findings of this study confirm the effectiveness of the PRECEDE model on developing the well-being of the elderly. The results of this research can be applied to manage some significant factors to improve the well-being of rural Thai elders, especially in terms of promoting healthy elderly behaviors such as physical activities, attitude toward life etc.

Keywords: PRECEDE, elderly, well-being, rural area, Thailand

An aging population is indicated by the increasing proportions of older people in the total population. The number of elderly persons (defined as aged 60 and over) in Asia and the Pacific Region, including Thailand, is expected to rise dramatically (Jitapunkul & Bunnag, 1999). In Thailand, the elderly population has grown rapidly and will continue to do so in future decades. Notably, the population of older people had already doubled to 10% by 2000 and is projected to approach 30% by mid-century. Therefore, the government of Thailand is fully aware of these consequences and has formulated policy measures to address them (Knodel & Chayovan, 2008; Suwanrada, 2014).

The living conditions of the elderly living in the rural and urban areas of Thailand are different and are related to the happiness in the elderly (Liamputtong, 2014; Rattanapun Fongkeaw, Chontawan, Panuthai, & Wesumperuma, 2009). Many factors affect elderly well-being and changes in society in rural Thailand (Sattayanurak, 2010); however, data is limited concerning the well-being of elderly people living in rural areas in Eastern Thailand. This research was conducted with the objective of determining the factors affecting the well-being of the elderly in Eastern Thailand who live in rural areas, to explore which variables are affecting the well-being of rural elderly under the PRECEDE model.

¹ Associate Professor, Head of Master of Public Health Program in Health Management, Rajabhat Rajanagarindra University, Thailand.

The PRECEDE Model

The PRECEDE framework is the diagnostic portion of the PRECEDE-PROCEED model. It was first developed and introduced in the 1970s by Green and colleagues (Green & Kreuter, 2005). The PRECEDE model is a framework for the process of systematic development and evaluation of health education programs and is multidimensional, founded in the social/behavioral sciences, epidemiology, administration and education. PRECEDE stands for predisposing, reinforcing, and enabling constructs in Educational/Environmental Diagnosis and Evaluation (Gielen & Eileen, 1996; Green & Kreuter, 1999).

Predisposing factors are any characteristics of a person or population that motivates behavior before the occurrence of that behavior, i.e., knowledge, beliefs, values, and attitudes. For this study, the predisposing factor was attitude toward life.

Enabling factors are characteristics of the environment that facilitate action and any skills or resources required to attain specific behavior, i.e., accessibility, availability, skills, and laws. For this study, the enabling factors were relationship with the community, physical health status and ability to perform daily activities.

Reinforcing factors are rewards or punishments following or anticipated as a consequence of a behavior. They serve to strengthen the motivation for behavior, i.e., family members, peers, and teachers. For this study, the reinforcing factor was family relationship.

Well-being in the Elderly

Old age is often seen as a time of relative contentment, although debate has focused on levels of well-being among older people, just as for the population as a whole (Allen, 2008). For this study, the well-being of the elderly was subjective well-being (SWB), i.e., psychological well-being defined as self-reports of satisfaction conditions in terms of mental and physical health of existence by happiness of the elderly.

Personal factors

The seven variables of the personal factors are: gender, age, occupation, marital status, education, health problems, and social and religious activities.

Gender.

Gender influenced psychological well-being of the elderly (Zhang & Hayward, 2001). A previous study suggested that women and men have a different understanding of what matters in life and what constitutes life satisfaction (Giusta & Kambhampati, 2008). While, Meléndez, Tomás, Oliver, and Navarro (2009) found gender had an indirect effect on life satisfaction among the elderly. However, Bag, Sanyal, Daniel, and Chakrabarti (2014) found that subjective well-being of the elderly living in old age homes was not predicted by gender.

Age.

Age differences affected the well-being among people varying in health status (Piazza, Charles, & Almeida, 2007). Gómez-Olivé, Thorogood, Clark, Kahn, and Tollman (2010) reported that health and well-being were affected by the age structure. Likewise, Adebawale, Atte, and Ayeni (2012) found that poor well-being among the elderly increased

with age. Nevertheless Meléndez et al. (2009) found age played an indirect effect to life satisfaction among the elderly. However, Bag et al. (2014) found that subjective well-being of the elderly living in old age homes was not predicted by age. Phillips (2015) also suggested that the progression of age does not lead to an increase in happiness or unhappiness in a linear fashion.

Occupation.

Occupation is related with financial situation and time used in daily life among the elderly. Financial abuse can have a negative impact on older adults' health and well-being (Bain & Spencer, 2015). Occupations are the most important for maintaining health and well-being (Legarth, Ryan, & Avlund, 2005). Not working at present was associated with lower quality of life of the elderly (Gómez-Olivé et al., 2010). Therefore, a relationship was confirmed between occupation, health and well-being (Law, Steinwender, & Leclair, 1998).

Marital status.

Marital status influenced psychological well-being (Zhang & Hayward, 2001). Rossi, Ferres, and Cid (2007) found that older people have a tendency to report themselves happy when they are married. In addition, single status was associated with lower quality of life among the elderly (Gómez-Olivé et al., 2010). However, Solomou, Richards, Huppert, Brayne, and Morgan (1998) found an association between elderly well-being and experience of an earlier divorce for both men and women. Moreover, Adebawale et al. (2012) found that elderly who were separated were more likely to experience poor well-being than those who had never married.

Education.

Educational level was positively related to life satisfaction among the elderly (Meléndez et al., 2009). Previous studies have shown differences in the happiness perception among people with different levels of education (Sumngern et al., 2010), and Gómez-Olivé et al. (2010) found no education was associated with lower quality of life among the elderly. However, Bag et al. (2014) found that subjective well-being of the elderly living in old age homes was not predicted by education. Moreover, Adebawale et al. (2012) reported that elderly well-being decreased as the level of education increased.

Health problems.

Health is a significant indicator for psychological well-being among the elderly (Cho, Martin, Margrett, MacDonald, & Poon, 2011). Health problems were correlated with life happiness of the elderly (Kim et al., 2009). Perceived physical health problem was a statistically significant predictor of subjective well-being (Bag et al., 2014). Moreover, the elderly who achieved healthy aging continued their active lives, which positively affected their life satisfaction (Meléndez et al., 2009).

Social and religious activities.

Religion was associated with well-established beliefs, and can refer to feelings, thoughts, experiences, and behaviors related to the soul (Kaplan & Berkman, 2015). Having strong faith in God influences a sense of emotional well-being (Beyene, Becker, & Mayen, 2002). Moreover, Ardelt (2003) stated that religiosity tends to help older people to cope with

physical and social losses, but not all studies found a significant association between religious involvement and well-being in old age.

Predisposing Factors

Only one variable represented the predisposing factor, i.e., attitude toward life.

Attitude towards life.

Attitude toward life and aging were related with elderly well-being. Individuals' attitudes might play an important role for psychological well-being in later life (Suls, Marco, & Yobin, 1991). Older age was related to lower levels of purpose in life, personal growth, and positive relationships (Heidrich, 1993). The study by Suh, Choi, Lee, Cha, and Jo (2012) found that attitudes about aging were associated with enhanced life satisfaction among the elderly. However, Mock and Eibach (2011) summarized that positive beliefs about aging lead to feeling younger and negative beliefs make people feel older. Moreover, Ju, Shin, Kim, Hyun, and Park (2012) suggested that a focus on the meaning in life may be a productive avenue to enhance subjective well-being in later life.

Enabling Factors

Three variables of enabling factors comprised relationship with the community, physical health status and ability to perform daily activities.

Relationship with the community.

Relationships between health and life satisfaction, health and community participation and community participation and life satisfaction are well documented in a variety of literature. In addition, community participation has played several roles in positively affecting life satisfaction levels in people with physical health challenges (English, 2013). Spiritual health was found to correlate with interpersonal relationships, in concurrence with the findings of researchers reporting interpersonal relationships affected health and well-being (Agnew & South, 2014), and interpersonal relationships maintained the spiritual health of the elderly (Mackinlay, 2004).

Physical health status.

The status and perceptions of health were critical indicators for well-being in old age (Cho et al., 2011). Physical function and physical activity are related to feelings of well-being, and emphasize the positive functional and psychological effects of physical activity among the elderly, and physical activity total time was significantly correlated with subjective well-being (Garatachea et al., 2009). Physical inactivity has been established to be an independent risk factor for a range of chronic diseases and conditions that threaten health (King, 2001) or physical illness affected life satisfaction (Kim et al., 2009). It is congruent with the study of Han and Shibusawa (2015) that found the potential benefits of engaging in physical and/or leisure activities on health well-being among the Chinese elderly.

Ability to perform daily activities.

Activities of daily living (ADL) tend to be concerned with basic bodily maintenance and activities basic to community residence (Fillenbaum, 1984). Longevity among most of the elderly leads to poorer health as well as lower functional status (Dolai & Chakrabarty, 2013).

Change in ergonomics especially how to move and to handle their activities were related to elderly well-being (Sirinakbumrung, Ngarmyarn, Panichpathom, Metapirak, & Jitprasonk, 2013). Moreover, Yamashita, Iijima, and Kobayashi (1999) found that ADL were primarily related to subjective well-being (PGC Morale Scale score), and Suls et al. (1991) suggested that perceptions of illness and disability related to psychological well-being in later life.

Supporting Factors

In this study, only one variable represented the supporting factor, i.e., family relationships.

Family relationships.

Family relationships were associated with successful aging (Chen & Miller, 2002; Moraes & Souza, 2005). Thanakwang (2015) suggested that elderly people living with poor family relations will have a low level of life satisfaction and well-being. Additionally, Suwanmanee et al. (2012) found family relationships affected mental health of older adults, and older adults with good family relationships had better mental health than those who did not report a good family relationship. Moreover, Liu and Guo (2008) found that “Empty-nest status” was negatively related with life satisfaction among the elderly in China, and the empty-nest elderly were likely to have mental health problems and to feel unsatisfied with their life.

Research Objectives

The objectives of this study were to determine the personal factors, predisposing factors, enabling factors and supporting factors that affect the well-being of the elderly living in rural areas in Eastern Thailand.

The following factors were studied.

1. Personal factors: gender, age, occupation, marital status, education, health problems, and social and religious activities
2. Predisposing factor: attitude toward life
3. Enabling factors: relationship with the community, physical health status and ability to perform daily activities
4. Supporting factor: family relationships

Research Framework

The conceptual framework of this research was based on the PRECEDE model designed by Green and Kreuter (2005). According to this study, elderly well-being was influenced by personal, predisposing, enabling and supporting factors. The proposed research framework showing the hypothesized effects among variables is presented in Figure 1.

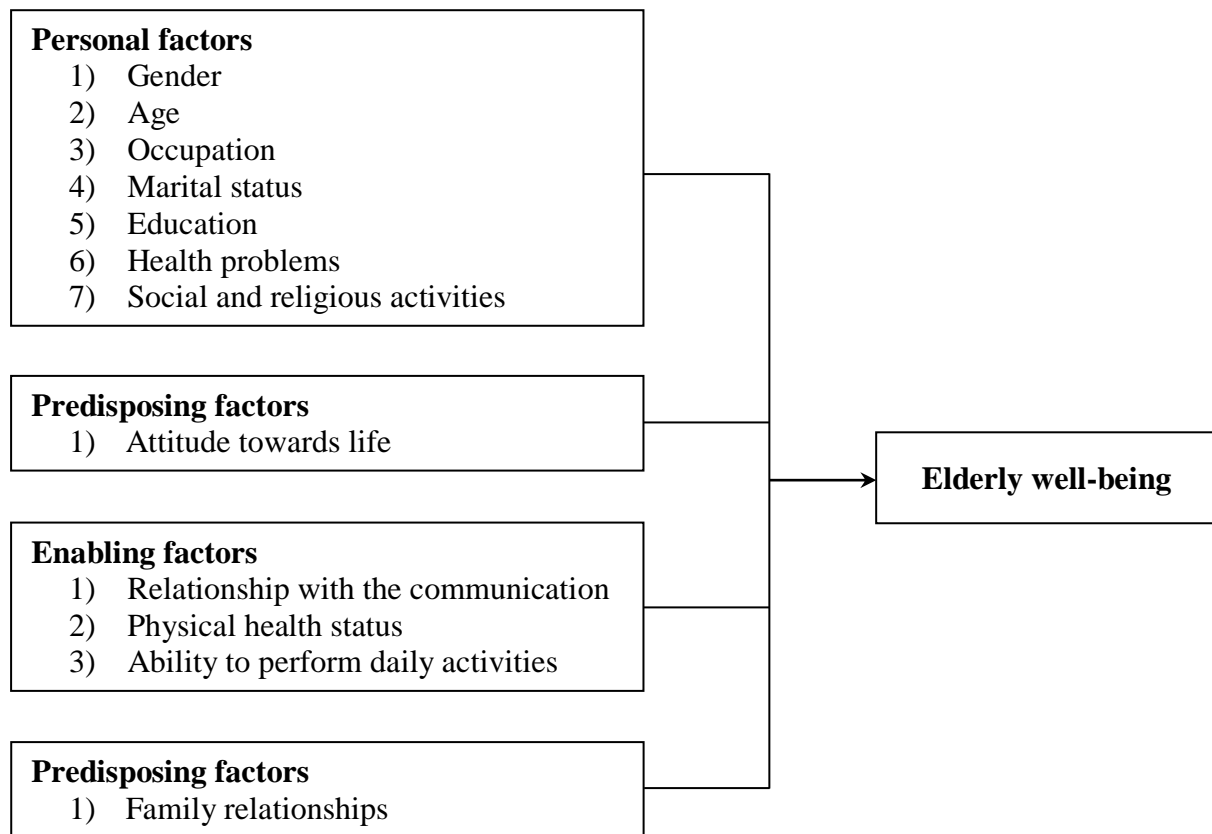


Figure 1. Conceptual Framework of the Study.

Method

Participants

The participants were recruited from a population of 784,877 elderly people who lived in some of the provinces of Eastern Thailand in 2014 (Thailand National Statistical Office, 2014). The provinces covered by the study included Chachoengsao, Chonburi, Rayong, Chanthaburi, Trat, Prachinburi, Sa Kaeo, Nakhon Nayok, and Samut Prakan. The sample was composed of 400 elderly people selected by multi-stage sampling according to the proportion of population in each province and simple random sampling.

Research Instruments

Information was obtained through the following seven parts of the questionnaire: personal characteristics, attitude toward life, relationships with the community, physical health status, ability to perform daily activities, family relationships, and the elderly well-being. The questionnaires were constructed based on information from various sources such as the literature review, previous studies and suggestions from experts.

Personal characteristics.

Personal factors were measured by questionnaire.

- 1) Gender was categorized in two groups: male and female.
- 2) Age was recorded at the nearest birthday in year and categorized in three groups: 60-69, 70-79, and 80 or higher.
- 3) Occupation was categorized in four groups: agriculturists, entrepreneurs, employees, and retired people.
- 4) Marital status was categorized in three groups: single, married, and widowed/separated.
- 5) Education was categorized in four groups: illiterate, primary school, secondary school, and diploma or bachelor degree.
- 6) Health problems were categorized in two groups: 1) having health problems that affected daily life, and 2) not having health problems that affected daily life.
- 7) Social and religious activities were categorized in three groups: frequently, sometimes, and infrequently.

Attitude toward life.

Attitude toward life questionnaire, based on the literature review (Heidrich, 1993; Mock & Eibach, 2011), consisted of five items about beliefs, attitude and a sense of themselves as elderly individuals who can create value and benefits to the family. The instrument employed a 5-Likert scale from most, much, moderate, little, to least. Items included statements such as, “You have knowledge that is beneficial to the children and the family”.

Relationships with the community.

Relationships with the community questionnaire was based on a literature review (English, 2013), and a review of the available instrumentation of the Department of Social Development and Welfare, Ministry of Social Development and Human Security, Thailand, consisting of 15 items about help or social support from various groups in the community. The instrument comprised a 5-Likert scale from most, much, moderate, little, and to least. Items included statements such as, “Neighbors counsel or advise you”.

Physical health status.

Physical health status question comprised a self-rated question by the elderly about their personal health, adapted from SF12, developed for a medical outcomes study in the USA (Stewart & Ware, 1992). The questionnaire employed a 5-Likert scale from excellent, very good, good, fair, and to poor. Items included questions such as, “In general, what would you say your health status is?”

Ability to perform daily activities.

Ability to perform daily activities questionnaire was based on the Barthel ADL Index (Collin, Wade, Davies, & Horne 1988). The instrument consisted of ten items measured by the level of ADL of the elderly. Items included statements such as, “Able to sit out of bed or move from bed to chair”.

Family relationships.

The family relationships questionnaire was based on social support theory (House, 1987; Hupcey, 1998) consisting of ten items about trust, relations and support within the family. The instrument was a 3-Likert scale from regularly, rarely do, and never. Items included statements such as, “People in your family expresses love and concern for each other”.

Elderly well-being.

Elderly well-being questionnaire was based on literature review (McKay & Fanning, 2000; Twenge & Campbell, 2002) and a review of the available instruments of the Department of Social Development and Welfare, Ministry of Social Development and Human Security, Thailand. It consisted of ten items about self-esteem of the elderly. The instrument used a 5-Likert scale from most, much, moderate, little, and to least. Items included statements such as, “I am very happy to be with others”.

The complete set of instruments was analyzed for reliability and validity. Cronbach’s alpha coefficient was used to test the reliability of the questionnaires. Nunnally and Bernstein (1994) recommended that instruments used in basic research have a reliability of about 0.70 or better. All instruments were reliable with Cronbach’s alpha scores ranging from 0.706 to 0.965 as shown in Table 1.

Table 1

Reliability of Instruments

No.	Instrument	Reliability
1	Attitude toward life	0.706
2	Relationships with the community	0.934
3	Ability to perform daily activities	0.742
4	Family relationships	0.720
5	Elderly well-being	0.965

Data Collection and Analyses

Data were collected by personal community-based interviews. Data on all variables were analyzed by descriptive statistics using frequency, percentage, arithmetic mean and standard deviation. One-way ANOVA and *t*-test were used to analyze the differences in the average between the variables in personal factors, predisposing factors, enabling factors, reinforcing factors and elderly well-being at $p < .05$ level of significance.

Results

Descriptive statistics of the samples are shown in Table 2. The personal characteristics of the sample of 400 elderly showed 59.00% were females, 42.00% were aged between 60-69 years with a mean age of 69.22 years, 49.50% were widowed/ separated, 57.50% were retired, 54.50% had graduated from primary school,

53.0% did not have health problems that affected daily living, and 75.25% had a frequent degree of social and religious activities.

Table 2

Number and Percent of Personal Characteristics of the Elderly (n=400)

Personal Characteristics	Frequency	Percent
Gender		
- Male	164	41.00
- Female	236	59.00
Age (Years)		
- 60-69	168	42.00
- 70-79	144	36.00
- 80 or higher	88	22.00
($M=69.22$, $SD=5.07$, $Min=60$, $Max=85$)	88	22.00
Marital status		
- Single	12	3.00
- Married	190	47.50
- Widowed/Separated	198	49.50
Occupation		
- Retired	230	57.50
- Agriculturists	72	18.00
- Entrepreneur	52	13.00
- Employee	46	11.50
Education		
- Illiterate	110	27.50
- Primary school	218	54.50
- Secondary school	44	11.00
- Diploma or Bachelor degree	28	7.00
Health problems		
- Yes	188	47.00
- No	212	53.00
Social and religious activities		
- Frequently	301	75.25
- Sometimes	77	19.25
- Infrequently	22	5.50

The number and percentage of the elderly by age groups and levels of well-being as shown in Figure 2.



Figure 2. *The Number and Percentage of the Elderly by Age Groups and Levels of Well-Being.*

Means, Standard deviation and *t*-test among the personal factors variables are presented in Table 3. The personal factors regarding gender and health problems revealed by *t*-test were shown to have no effect elderly well-being.

Table 3

Analysis of Mean Differences in Personal Factors by t-test

Personal characteristics	<i>N</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>t</i>	Sig.
Gender						
- Male	164	28.000	2.833	398	0.296	0.768
- Female	236	27.915	2.812			
Health problems						
- Yes	188	28.192	2.788	398	1.618	0.107
- No	212	27.736	2.833			

Means, Standard deviation and *F*-test among the personal factors variables are presented in Table 4. The personal factors regarding age, occupation, education and social and religious activities revealed by *F*-test were shown to affect elderly well-being where the values of *F*-test=3.330, *p*=.006, *F*-test=5.518, *p*=.001, *F*-test=1.416, *p*=.001, *F*-test=4.218, *p*=.001, respectively. Marital status however, was found to have no effect on elderly well-being.

Table 4

Analysis of Mean Differences in Personal Factors by One-Way ANOVA

Personal Characteristics	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	<i>p</i> -value
Age					
Between Groups	223.017	2	111.508	15.037	.006**
Within Groups	2943.983	397	7.416		
Total	3167.000	399			
Marital status					
Between Groups	17.028	2	5.676	.714	.544
Within Groups	3149.972	397	7.954		
Total	3167.000	399			
Occupation					
Between Groups	93.911	3	31.304	4.034	.008**
Within Groups	3073.089	396	7.760		
Total	3167.000	399			
Education					
Between Groups	60.202	3	15.051	1.914	.107
Within Groups	3106.798	396	7.865		
Total	3167.000	399			
Social and religious activities					
Between Groups	205.928	2	102.964	13.805	.001**
Within Groups	2961.072	397	7.459		
Total	3167.000	399			

Note. **p*-value<.05, ***p*-value<.001.

Means, Standard deviation and *F*-test among the predisposing factors variables, enabling factors variables, and supporting factors variables are presented in Table 5.

Predisposing factors regarding attitude toward life were revealed by *F*-test to affect elderly well-being where the values of *F*-test=23.497, *p*=.000.

Enabling factors regarding relationship with the community, physical health status, ability to perform daily activities were revealed by *F*-test to affect elderly well-being where the values of *F*-test=7.175, *p*=.001, *F*-test=4.935, *p*=.001, *F*-test=3.740, *p*=.025, respectively.

Supporting factors regarding family relationships were revealed by *F*-test to affect elderly well-being where the values of *F*-test=80.414, *p*=.000.

Table 5

Analysis of Mean Differences in Predisposing Factors, Enabling Factors, and Supporting Factor by One-Way ANOVA

Factors	Sum of Squares	df	Mean Square	<i>F</i>	<i>p</i> -value
<i>Predisposing Factor</i>					
Attitude toward life					
Between Groups	335.202	2	167.601	23.497	.000**
Within Groups	2831.798	397	7.133		
Total	3167.000	399			
<i>Enabling Factors</i>					
Relationship with the community					
Between Groups	110.486	2	55.243	7.175	.001**
Within Groups	3056.514	397	7.699		
Total	3167.000	399			
Physical health status					
Between Groups	150.735	4	37.684	4.935	.001**
Within Groups	3016.265	395	7.636		
Total	3167.000	399			
Ability to perform daily activities					
Between Groups	58.564	2	29.282	3.740	.025*
Within Groups	3108.436	397	7.830		
Total	3167.000	399			
<i>Supporting Factor</i>					
Family relationship					
Between Groups	913.080	2	456.540	80.414	.000**
Within Groups	2253.920	397	5.677		
Total	3167.000	399			

Note. **p*-value < .05, ***p*-value < .001.

The multiple comparisons test of age, education, marital status, and occupation, revealed by Sheffe's test, showed mean differences among significant variables. Age was found to differ between the elderly aged 60-69 years and 70-79 years, and aged 60-69 years and aged 80 years or higher. Occupation was found to differ between the elderly who were retired and agriculturists. Social and religious activities were found to differ between the elderly at good and poor levels, and those at the moderate and poor levels. Attitude toward life were found to differ between the elderly at good and poor levels, and those at good and moderate levels. Relationships with the community were found to differ between the elderly at good and moderate levels, and those at good and poor levels. Physical health status was found to differ between the elderly at very good and good levels. Ability to perform daily activities was found to differ between the elderly at good and moderate levels. Family relationships were found to differ between the elderly at good and moderate levels, and those at good and poor levels.

Discussion and Conclusion

Personal factors found three variables to affect elderly well-being, i.e., age, occupation, and social and religious activities, and four variables not affecting elderly well-being, i.e., gender, marital status, education, and health problem. Regarding predisposing factors, attitude toward life affected elderly well-being. Concerning enabling factors, three variables affected elderly well-being, i.e., relationship with the community, physical health status and ability to perform daily activities. Finally regarding supporting factor, family relationships were demonstrated to affect elderly well-being.

Personal Factors

Age was found to affect elderly well-being in congruence with various studies (Adebowale et al., 2012; Gómez-Olivé et al., 2010; Meléndez et al. 2009; Piazza et al., 2007) The finding was similar to the findings of a study by Mroczek and Kolarz (1998) demonstrating the possibility that well-being may actually improve with age. The result of this study was also in contrast with the finding of the study by Adebowale et al. (2012) that found poor well-being of elderly increased with age. Interestingly, Thai rural elderly aged 80 years or higher had higher mean scores of well-being than the elderly aged 70-79 years and aged 60-69 years. Those aged 80 years or higher were at a good level of well-being in the highest proportion when compared with other age groups, as shown in Figure 2.

Occupation was found to affect elderly well-being in congruence with other findings (Bain & Spencer, 2015; Gómez-Olivé et al., 2010; Law et al., 1998; Legarth et al., 2005; Lu & Wang, 1993; Sirgy, 2010). The finding indicated the retired elderly had the highest score of well-being. It was suggested that the retired elderly perceived well-being more than those also working to earn money for a living.

Social and religious activities were found to affect elderly well-being in congruence with the other findings (Ardelt, 2003; Beyene et al., 2002; Carlucci et al., 2015; Chandler & Meisenhelder, 2002; Cohen & Johnson, 2011; Colón-Bacó, 2010; Ellison, 1991; Kaplan & Berkman, 2015). The finding of this study confirmed that scores of social and religious activity were positively related to elderly well-being.

Predisposing Factors

Attitude toward life was found to affect elderly well-being in concurrence with some studies suggesting that less favorable aging attitudes predict lower life satisfaction level and increased negative effects (Heidrich, 1993; Ju et al., 2012; Mock & Eibach, 2011; Momtaz, 2013; Suh et al., 2012). An individuals' attitudes might play an important role for psychological well-being in later life (Suls et al., 1991), and moreover, to be related to lower levels of purpose in life (Heidrich, 1993; Mock & Eibach, 2011). In contrast, satisfaction with life was considered positively associated in protecting the elderly from functional loss that related to elderly well-being (Amorim, Sallai, & Trelha, 2014). The finding of this study suggested that attitude toward life affected the well-being of Thai elderly.

Enabling Factors

Relationship with the community was found to affect elderly well-being in congruence with the study of English (2013) who indicated that community participation affected the subjective well-being of the elderly in the community. Further, the findings of others research studies reported the effect of interpersonal relationships in the community to elderly well-being (Agnew & South, 2014; Mackinlay, 2004). In contrast, the study by Solomou et al. (1998) found that association between elderly well-being and perceived social support was not statistically significant. However, the finding of this study confirmed that the elderly, who had good relationships with other people in the community, would have a good well-being score.

Physical health status was found to affect elderly well-being, which confirms that perceptions of health were critical indicators for well-being at old age (Cho et al., 2011; Garatachea et al., 2009), and poor health was associated with more depression and anxiety among the elderly (Han & Shibusawa, 2015; Heidrich, 1993; King, 2001). However, the finding of this study showed differences among elderly well-being scores only among the elderly at very good level and good level of well-being.

The ability to perform daily activities was found to affect elderly well-being in concurrence with previous studies indicating that activity is important in mediating the impacts of well-being and longevity (Dolai & Chakrabarty, 2013; Fillenbaum, 1984; Kendig, Broening, & Young, 2000; Sirinakbumrung et al., 2013; Yamashita et al., 1999). Result of this study confirmed that ability to perform daily activities affected the well-being of Thai elderly.

Supporting Factor

Family relationships was found to affect elderly well-being in concurrence with the study of Knodel and Chayovan (2008) indicating that the Thai population is relatively homogeneous in major cultural aspects with a strong sense of moral obligation that adult children should support and care for elderly parents. This has been a pervasive aspect of Thai cultural values and provides a strong normative basis for the prevailing pattern of familial support. The aforementioned finding supported the importance of family relationships to the well-being of the elderly (Agnew & South, 2014; English, 2013) and especially the study by Choowattanapakorn (1999) Most Thais are Buddhists, who believe in the concept of reciprocation for their parents' goodness and usually live with their parents, while a growing number of older Thais, as well as the changing Thai society, is affected by social support. In

contrast, the study by Lee and Ishii-Kuntz (1987) showed that interaction with children and grandchildren has no such effect on emotional well-being among the elderly. However, the result of this study confirmed the importance of family relationships on the well-being of the elderly.

As previously noted, the conclusions from this study will be explained based on the group of factors comprising the PRECEDE model. These findings also confirmed that elderly well-being is related to people's lifestyles and family values as consistent with the study by Sharifirad et al. (2003) and Nanthamongkolchai, Tuntichaivanit, Munsawaengsub, and Charupoonphol (2009). Therefore, certain factors should be managed to improve elderly well-being in addition to exploring other related factors and recording baseline data on plans to promote quality of life or well-being among Thai elderly. In planning intervention programs for the elderly, these facets of well-being must be included (Allain, Matenga, Gomo, Adamchak, & Wilson, 1996).

The findings of this study have several important implications for elderly behaviors such as how to support the elderly to maintain good attitudes toward life, how to maintain good physical health status, and the elderly's ability to perform daily activities etc. It must be remembered that numerous internal and external factors are involved (Gray, Rukumnuaykit, Kittisuksathit, & Thongthai, 2008) and are needed for planning better maintenance of all significant factors for the overall well-being among Thai elderly. To improve the quality of life of elderly people, health workers should emphasize the psychosocial aspects of this population within social, cultural, political and historical contexts in Thailand.

Recommendations

1. Suggestions for implementing the findings

This study confirmed that the PRECEDE model could be used as an interventional framework to investigate the factors affecting the well-being of Thai elderly. The findings of this study also suggested that the PRECEDE model could be used to explore factors affecting personal well-being.

2. Suggestions for further study

According to the findings of the present study, some personal variables such as gender, marital status and health problems did not affect elderly well-being. These factors represent issues that should be investigated in studies over similar periods of time and in similar situations to verify the present findings on the elderly in rural areas of Thailand through changes in the regions and in the future.

Acknowledgements

The author would like to express sincere appreciation to the Ministry of Education of Thailand and Rajabhat Rajanagarindra University for funding this research. The author would also like to thank the Dean of the Faculty of Science and Technology for providing all the necessary facilities for the research. Lastly, the author is grateful to all of the elderly people who served as the subjects for this study.

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