Spiritual Well-Being Measurement of Older Adults in a Community-Dwelling: A Short-Form Development

Junya Pattaraarchachai [1]*, and Kanvee Viwatpanich[1]

[1] Chulabhorn International College of Medicine, Thammasat University, Thailand
* Junya Pattaraarchachai, corresponding author. Email: dr.junya@gmail.com, phjpt@tu.ac.th
Submitted: 8 June 2020, Accepted: 29 December 2020, Published: 8 February 2021
Volume 29, 2021. p.286-298. http://doi.org/10.25133/JPSSv292021.018

Abstract

This combination of quantitative and qualitative approaches was performed in Chiang Mai, Samut Prakan, Nakhon Ratchasima, and Nakhon Si Thammarat to develop the general measurement tool of spiritual well-being among older adults who are living in the community. The research was divided into two phases. The first phase was a pilot questionnaire with 41 questions for 106 older adults, and ten focus group discussions. The exploratory factor analysis extracted and reduced the questionnaire to 30 questions. The revised questionnaires were used in the second phase survey on 512 older adults. Exploratory and Confirmatory Factor Analysis affirmed the fit model of 12 questions on the four components of spiritual well-being (satisfaction, social participation, faith, and awareness), which explain the spiritual well-being condition of older adults, with a 73.8% extraction. Cronbach's coefficient of scale reliability (α) = 0.836, while the inter-item to total correlation was 0.328-0.682. Moreover, the reliability of each component was also high ($0.759 \leq$ Cronbach $\alpha \leq 0.846$). Therefore, the evaluation of spiritual health and well-being, as determined by the short-form (12 questions), is reliable and can apply as a screening tool for spiritual assessment, especially in the case of older adults in the Thai community.

Keywords

Community; older adult; short-form; spiritual well-being

Introduction

Spiritual well-being is one of the four main crucial aspects of being human (i.e., biological, psychological, social, and spiritual). Unfortunately, the goal to achieve positive health status provided by the World Health Organization (WHO) has not included spiritual health in its definition. Moreover, scholars have developed many forms and measurements to evaluate physical, psychological, and social health status, whereas spiritual health condition is not well established, especially in Thai society. This article discusses the new way to understand the spiritual health status and evaluate spiritual well-being, specifically for older Thai adults.

Spirituality refers to a certain higher-ordered sense in an individual who seeks the meaning and purpose of life by connecting beliefs, values, and practices in an integrated whole (Daaleman et al., 2001; Lepherd et al., 2019; Tanyi, 2002). Spiritual well-being has been considered an essential component in holistic health for decades (Daaleman & Frey, 2004; Hamilton & Jackson, 1998; Stoll, 1979). The body of knowledge on spiritual well-being and its application was developed, explored, and explained in all age groups, but mostly in childhood, where concepts and frameworks were more likely to be related to the religious paradigm (Bensley, 1991; Blazer, 1991; Paloutzian & Ellison, 1982). According to the overall concept of health, one's spiritual health status is also identified in order to ensure balance and inclusion of all relevant individual health components. However, many types of research in spiritual health identification were carried-out in western countries with patients in clinical settings, palliative care, and end-of-life care (Adams et al., 2014; Chaiviboontham et al., 2016; Hungelmann et al., 1985; Monod et al., 2011, 2015).

In order to measure spiritual health and well-being, it is suggested that the four domains, (1) perception of god, (2) hope and religious strength, (3) the significance of religious practice, and (4) the relationship between spiritual belief and health, should be considered (Stoll, 1979). Monad (2011) classified the keywords for spiritual assessment into three groups (i.e., general spirituality, spiritual well-being, and spiritual coping/spiritual needs). Additionally, the lack of spiritual well-being identification was also mentioned, so that reliability will be reduced when the target population is identified as a nonreligious entity (Sessanna et al., 2011). To fulfill this gap, Fisher developed the Spiritual Well-Being Questionnaire (SWBQ) and the Spiritual Health and Life-Orientation Measure (SHALOM) (20 questions). These devices are recognized as an effective measurement suitable for both religious and nonreligious persons (Fisher, 2010, 2011, 2016).

Recently, there have been five instruments related to spiritual well-being. Three of these instruments, the Spiritual Well-Being Questionnaire (SWBQ) and Spirituality Index of Well-Being (SIWB) (Fisher, 2010, 2016; Fisher et al., 2000), and the JAREL Spiritual Well-Being Scale (JSWBS) (Hungelmann et al., 1996), are commonly used in healthy populations to investigate the current state and purpose of life of their inhabitants (Monod et al., 2011). Life satisfaction and well-being components are found in JSWBS and JAREL (Ellison, 1983; Hungelmann et al., 1996; Paloutzian & Ellison, 1982). The identity component is stated in JSWBS and SIWB, and self-esteem is found only in SIWB (Monod et al., 2011). Self-limitation, which has been mentioned in the self-efficiency component of SIWB, is considered as self-awareness.

Spiritual well-being is an abstract scenario and challenging to measure (Wills, 2009). However, literature reviews have indicated that it may be possible. Most measuring tools could share the core components, while the adjustments needed to include or exclude the items under the

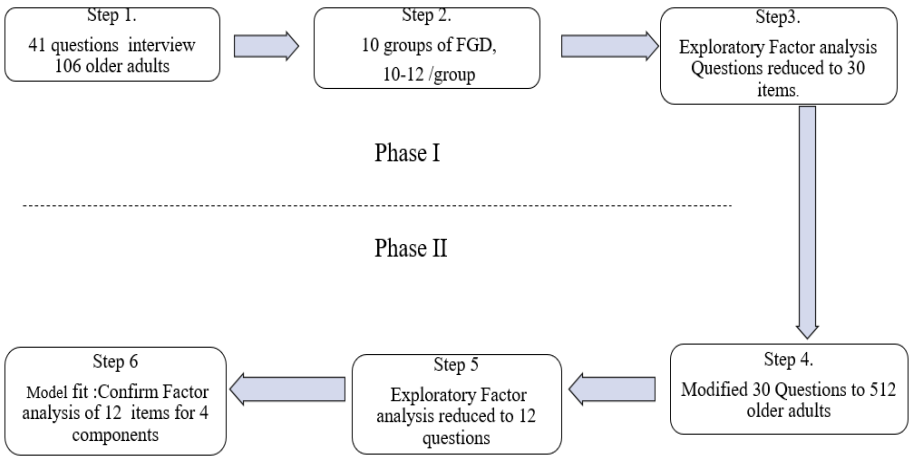
socio-cultural context of the target population are also feasible (Diener 1984; Kim-Prieto et al., 2005).

Since Thailand's population structure has transformed into an aging society, there are few reports on the specific tools needed to measure spiritual well-being in a typical older adult in the community. To fulfill the concept of holistic health, the four components, faith, social participation, satisfaction, and awareness, extracted from the literature reviews were reworked into a research framework (Fisher, 2016; Frey et al., 2005; Hungelmann et al., 1996). The aim of this research was twofold: (1) to develop an appropriate tool for measuring the spiritual well-being of older Thai adults, and (2) to test the standardized validity for a spiritual screening tool to be used in the future.

Methodology

The target population of this research was older Thai adults aged 60-79 years who were living in the community during the time of the data collection. Multistage sampling was applied to choose the areas of study and to find the respondents. The 2016 database of the Ministry of Interior (BORA, 2017) was used to identify the highest proportion of older adults at the provincial, district, and sub-district levels. First, the four provinces, Chiang Mai, Samut Prakan, Nakhon Ratchasima, and Nakhon Si Thammarat, were selected. Then two sub-districts representing urban and rural areas were identified for each province. After that, the representative villages were identified by the heads of village health volunteers, according to the inclusion criteria of the project. Convenience sampling was then used to access the respondents. We attempted to share the same ratio between the two sexes and ensure equivalence in each cluster and zoning of the households under study. Village Health Volunteers (VHVs) played an important role in establishing a research-respondent relationship. This cross-sectional mixed-method study could be divided into these two phases, as shown in Figure 1.

Figure 1: Flow of Work on Data Collection



The first phase was called 'exploratory factor analysis' (EFA). A rating scale (1-5) was assigned to this phase, which consisted of 41 questions (life satisfaction [11], awareness [15], social participation [6], and faith [9]). The test was conducted to determine the level of agreement of

the responses to each question and to ensure the reliability of the framework. The focus group discussions (FGDs) then followed to enhance the participants' understanding of the meaning of later life and how they could increase their overall happiness and quality of life. The inclusion criteria in this phase were: (1) at least ten years living in the area, (2) an undemented state of mind, (3) ability to communicate, and (4) voluntary participation in this research. Before we started the interview, a short-form dementia test was administered, and the research objectives were given. Finally, 106 older adults were interviewed, and ten FGDs were carried out. The EFA was used to reduce the number of questions and to ensure the correctness of the components of the model (Tabachnick & Fidell, 1996; Yong & Pearce, 2013). The criteria used to remove the items that share the commonalities less than 0.3. The acceptable model with the appropriate sample size check by the Kaiser-Meyer-Olkin (KMO) statistics for the measure of sampling adequacy had more than 0.7. The statistical significance level at 0.05 from Bartlett's Test of Sphericity was used to ensure that factor analysis was appropriate for the research data. The total variance explained by the four components was not less than 50 percent. The results from the content analysis were also applied as supplementary information to revise the sentences into questions to make them more apparent in a short form.

In the second phase, the confirmatory factor analysis (CFA), the criteria for recruitment, research areas, and statistical analysis were the same as performed in the first phase. Still, the numbers of the respondents increased, with a total of 512 older adults. After applying an EFA, those with a loading factor less than 0.3 were dropped in order to keep the items with the most producibility content in the model. The final model with the total variance explained that greater than 70 percent and all factor loading components higher than 0.7 were kept for the selected model. The CFA was used to test the model to determine fit content and scale reliability of the content to the design framework (Hair et al., 2009). The statistics in checking the goodness-of-fit model used in CFA were the average variance extract (AVE) higher than 50 percent, internal consistency by the Construct reliability (CR) more than 0.7, CMIN/DF measuring for model discrepancy less than 5, the Normal Fit Index (NFI delta1), Tucker-Lewis index (TLI rho2) and the comparative Fit Index (CFI) > 0.9, and Root Mean Square Error of Approximation (RMSEA) < 0.09. In addition, the Alpha Cronbach's coefficient of reliability was also performed for the chosen model to check the internal consistency among all items. The statistical software SPSS and AMOS were used for data computation, and path diagram works for the constructed model.

This research protocol was approved by the Human Research Ethics Committee, No. 1, Faculty of Medicine, Thammasat University (MTU-EC-00-2-105/60).

Results

Phase I consisted of the EFA. According to the factor analysis of 41 questions, the screen plot of the four components describes approximately 45.1% of the total with adequate sample support from the KMO, which had a value of 0.706. The extraction of each item was found to be in the range of 0.25-0.63, which meant that some items needed to be removed and rewritten. The results from FGDs (Table 1) was used as the guideline for this work. Finally, 11 of the 41 questions were excluded. A total of 30 questions were re-computed by EFA. The KMO was then found to be 0.771. Bartlett's Test of Sphericity showed these results to be statistically significant ($p < 0.001$), with a total variance of 50.92 percent. The communality extraction of

each item was found to be in the range of 0.312-0.729, sufficiently accurate for the next step in the following survey.

Phase II consisted of the confirmatory factor analysis. A rating scale (1-5) was assigned to this phase, consisting of a 30-question interview of 512 older adults in the same study area. Four cases were excluded because of incomplete questionnaires. The data gleaned from the remaining 508 cases were then analyzed. The findings showed that the KMO value and the calculated value from Bartlett's test increased to 0.895 and $p < 0.001$, respectively. The total variation also increased from 50.92 to 52.7 percent. When the item extraction was examined, 13 items (with variance extraction below 0.5) were deleted.

Table 1: Spiritual Well-Being of the Respondents: An Emic Viewpoint

Component	Life goals and happiness: findings from focus group discussions	Selected and example quotations
Awareness	1.Transcultural adaptation	We cannot force anyone. They knew more than me. Adapt ourselves and accept that they are smarter than us. If you cannot change yourself, then the problem is you.
	2.Emotional control and management	To be old, stay calm is very important and should stop berating kids and nephews at all times.
	3.Sustainable and sufficient lifestyles	Surviving in old age, we should learn the meaning of sufficient. Everything is expensive nowadays. We cannot afford it. What can you buy with 100 baht today?
	4.Precaution to start a new business	Some villagers here are greedy, invested in the stock market, never feel enough. In fact, they did not know how to invest. Finally, I got told many of them were bankrupt.
	5.Responsibility toward oneself	To depend on them all the time, Do you think it is right? No, they have their own family; if we are always looking for them to take care, how can they feed their son and daughter?
	6.Understand self-limitation	Please take care of yourselves, do not force nature, let yourselves on! If something terrible happened, it means you create a problem for your family, because they have to take care of you.
	7.Saving and planning for retirement	How should life be when living without money? I am separated and saved my income every month before retirement. We have to think and prepare before getting old.
	8.Flexibility and compromise	We have to understand the situation, especially when they are busy. Because everyone has so many things to manage.
	9.Preparation for a good death	I had a fear of death when I was young, but now I do not. However, please let me die in peace. I don't want to bother my kids.
Social Participation	1.Family activity and engagement	I cannot go far for the journey, and it is difficult. But inside my heart is still young. Moreover, I have never missed the family activities or cousin events, I always join them.
	2.Cultural and Community Participation	Stay home all day long is really boring. Visiting friends, participating in a merit event make my life more colorful.
	3.Social network and support when needed	In the case of an emergency, I will ask them for help and I am sure they will not neglect me. They call me every day, even they are busy but still keep contact by phone.
	4.Community recognition	When he got an outstanding teacher prize, it was really grateful. He succeeded than his grandfather. He is the best in our family, and the villager also proud of him.
Faith	1.Follow Dharma and religious practice	As monk taught us, be closed to Buddha, have dhamma in mind and pray. Do not hold everything in our heads. We do not need to get everything we want like we were young.
	2.Making merit	Offering food to the monks makes me feel peaceful. My everyday life starts with this. To hear the blessing from monks makes me happy.
	3.Soulful and mindful living	Be nice to everyone. We do not have to fight. Accept the situation for what it truly is. Like tongue and teeth, we should keep our friendships because everyone here is aging.
	4. Rational living, not to blame it on the destiny	They have to take responsibility for their families and we should take care of ourselves as much as possible. It is a question of faith.
Satisfaction	1.The success of family member	To see the success of my family, all having great jobs with good lives, I am really appreciated, I do not need anything more.
	2.Good health and quality of life	All aging people need to be healthy. No one wants to take a cup of medication every day.

Component	Life goals and happiness: findings from focus group discussions	Selected and example quotations
	3.Safety society and friendly environment	I am worried about my house and properties; thieves here are innumerable like mosquitoes. So, I don't want to left my house, really worry.
	4.Economic security	Money should be kept since the working-aged. So, we can have our own pocket. We do not have to beg for money from others when we are sick.
	5.Well-functioning family	Having warm-hearted family and be together, apart from this, just keep contact and visit.
	6.Social and medical accessibility	It is not easy to get into the hospital, each time I have to pay the hundreds for transportation. So, I decided sometimes not to go.

Table 2: Factor Loading and Variance Explanation from EFA

	EFA 12 items 73.8% total explanation			
	Awareness	**Social Participation**	**Faith**	**Satisfaction**
AW1. Understand one's self-limitation	**0.855**	0.098	0.032	0.159
AW2. Acceptance of self-mistakes	**0.854**	0.102	0.158	0.101
AW3. Problem-solving skills	**0.836**	0.067	0.067	0.237
SO1.Community participation	0.082	**0.895**	0.063	0.222
SO2. Family engagement.	0.13	**0.678**	0.278	0.234
SO3. Community recognition	0.086	**0.886**	0.001	0.175
FA1. Cultural conservative	0.031	0.032	**0.683**	0.222
FA2. Religious activity and practice	0.106	0.134	**0.862**	0.007
FA3. Peace of mind and inner calm	0.100	0.072	**0.874**	-0.02
SA1 Bodily satisfaction	0.12	0.219	0.058	**0.78**
SA2. Family satisfaction	0.242	0.195	0.168	**0.802**
SA3. Life satisfaction	0.271	0.296	0.225	**0.732**
KMO	= 0.789			
Bartlett's Test of Sphericity	<0.001			

Moreover, the five items with shared variances of more than one factor that could not be explained by our components from the FGDs were also excluded. Table 2 shows results from the EFA, consisting of twelve items for the four components, with 73.8 percent of variance extraction. All factors pertaining to loading were indicative of the ability of each item to show its own most significant contribution to their components. The path diagram (Figure 2) shows the relationship between the testing model for the twelve items and the four components. CFA Testing showed that the model of these twelve items fit is supported by the index of model fit shown in Table 3. The construct validity of the measurement is revealed from Average Variance Extraction (AVE) and Constructed Reliability (CR). The AVE shows a percentage indicating that the contribution from the items to each component is higher than fifty percent, with a CR higher than 0.7. Since the Chi-square test for goodness-of-fit is too sensitive for the large sample size, we chose to report only the indices of model fit. All the values of the indices of the model fit show a good fit for this constructed spiritual well-being model.

Figure 2: Factor Loading of Twelve Items and Their Components

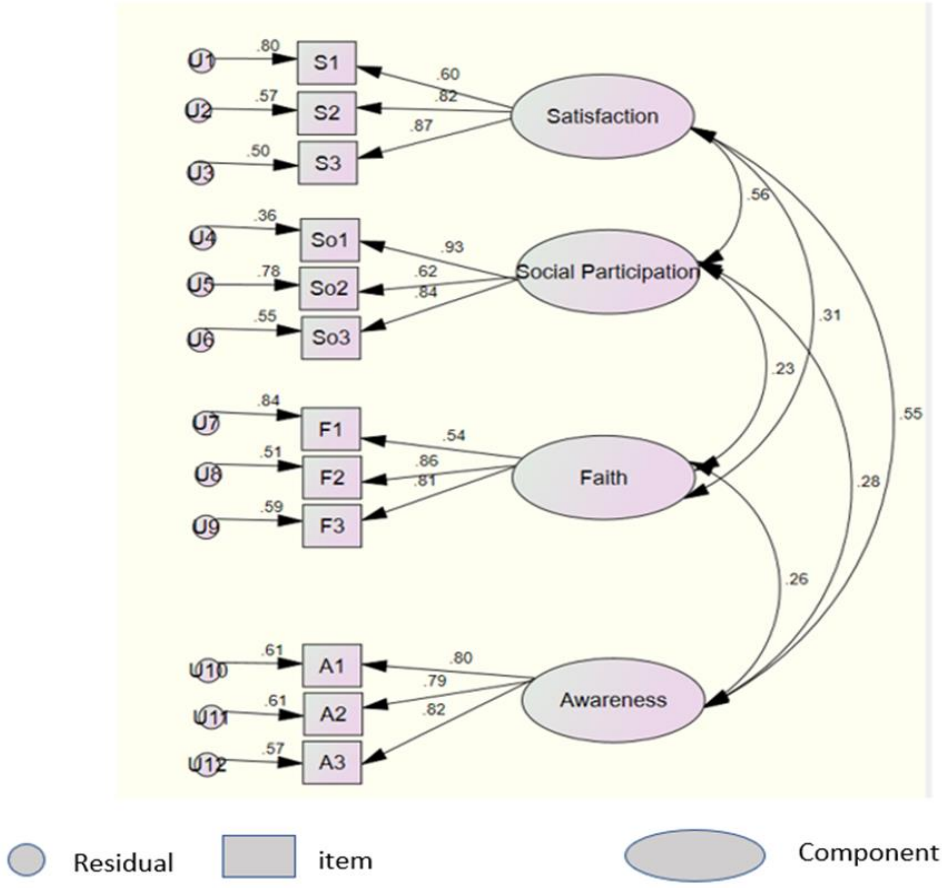


Table 3: Statistical Index of Model Fit from CFA

Constructed validity/reliability of the model					
	Awareness	**Social Participation**	**Faith**	**Satisfaction**	**Criteria**
Average variance extract (AVE)	64.80%	65.20%	55.90%	59.60%	*>50%*
Construct reliability (CR)	0.765	0.772	0.714	0.737	*>0.7*
		Model fitting indices			**Criteria**
CMIN/DF			4.361		*<5*
NFI delta1			0.927		*≥0.9*
TLI rho2			0.906		*≥0.9*
CFI			0.942		*≥0.9*
RMSEA (Lo90,Hi90;Pclose)			0.081(0.07,0.09;0)		*<0.09*

Table 4 shows that the overall internal consistency, as found from Alpha Cronbach's coefficient, is excellent. The components of life satisfaction, social participation, and awareness are shown to have very high reliability. The reliability coefficient of faith is 0.759 and thereby indicates good reliability. Cultural conservation constitutes a significant factor in shaping the reliability of faith. This component thus becomes lower than the other components. Comparable on the Alpha Cronbach's coefficient of different regions is shown in Table 5.

Table 4: Alpha Cronbach's Coefficient of Reliability and Correlation Item to Total Correlation.

	Corrected Item-Total Correlation	**Squared Multiple Correlation**	**Alpha Cronbach's if Item Deleted**
AW1. Understanding self-limitation	0.469	0.523	0.826
AW2. Acceptance of self-mistakes	0.489	0.544	0.824
AW3. Problem-solving skills	0.495	0.562	0.824
SO1. Community participation	0.600	0.689	0.817
SO2. Family engagement	0.583	0.452	0.816
SO3. Community recognition	0.546	0.641	0.821
FA1. Cultural conservative	0.334	0.259	0.834
FA2. Religious activity and practice	0.391	0.525	0.831
FA3. Peace of mind and inner calm	0.328	0.522	0.835
SA1. Bodily satisfaction	0.474	0.398	0.825
SA2. Family satisfaction	0.615	0.574	0.815
SA3. Life satisfaction	0.682	0.613	0.810
	Alpha Cronbach's Coefficient	**95% Confidence Interval**	
		Lower Bound	**Upper Bound**
Total short form	0.836	0.814	0.856
Awareness	0.846	0.821	0.868
Social participation	0.829	0.802	0.854
Faith	0.759	0.720	0.793
Satisfaction	0.801	0.769	0.829

Table 5: Alpha Cronbach's Coefficient of Reliability as Compared Among the Four Regions

	Alpha Cronbach's Coefficient	**95% Confidence Interval**	
		Lower Bound	**Upper Bound**
Central	0.880	0.847	0.909
South	0.819	0.769	0.862
North	0.813	0.761	0.857
Northeast	0.822	0.773	0.865

Discussion

Understanding the socio-cultural context of the target population is an essential process in developing the measurement tool. The advantage is not only in understanding the viewpoints of the assessor but also in supporting the concepts of item selection and language creation. Even so, this research emerges with a literature review and a framework, as well as a series of FGDs to analyze the situation and need assessment. These things contribute effectively to our work and are quite helpful in practice.

Psychometric testing for older Thai adults through the Active Aging Scale for Thai Adults (AAS-Thai, 36 items in seven factors) was developed in 2014. The spiritual well-being of the Thai populace is seen as constituting an important domain for characterizing active aging conditions (Thanakwang et al., 2014). Moreover, some components of that research were sufficient to explain and support the critical aspects of the spiritual well-being of the older adults in our study. Ultimately, the difference between the AAS-Thai and 12-short form of Thai spiritual well-being (Thai-SWB) from this research was in the style of self-assessment, as our primary goal has been to make it easier to use with a minimum of questions and yet, at the same time, highly efficient.

The satisfaction component reflects the current state of self-identity (SA1-SA3), as modified from the SHALOM/SWBQ (Fisher, 2010, 2016; Fisher et al., 2000), while satisfaction was an adjustment from the JAREL-SWBS (Hungelmann et al., 1996). Satisfaction is an indicator that serves to identify the level of happiness when people succeed in their life's work and achieve what they want in life. Personal domain and identity can support the life satisfaction component of the elderly in Thai culture as a matter of self-sufficiency (Thanakwang et al., 2014). Body, family, and daily life satisfaction are rated based on their accomplishments.

The second component is social participation (SO1-SO3). These items were developed from the JSWBS (self-response to society) and SHALOM/SWBQ (Communal component). They were modified in this research to accommodate the Thai culture once the data from the FGDs (Phase 1) was analyzed. Moreover, the relationship between the older adults and the cultural society, as described by the respondents, was also included in our analysis. It was found to be in the same component of the Spiritual Health in Four Domains Index SH4DI (Fisher et al., 2000). We affirm that if more older adults took part in family and community activities, they would improve their self-confidence and personal identities. As Thanakwang et al. (2014) mentioned, social participation should be implemented as much as possible to maintain self-esteem. The findings derived from the FGDs also support this scenario, namely, that when older adults open themselves up to another side of their entire daily routines, their feelings of acceptance and social recognition are greatly enhanced. On the other hand, social participation can strengthen their sense of meaning in life, since these older adults can now contribute their participation and integrate their past-to-present experiences with the activity of family members, friends, neighbors, and other villagers as a whole.

Faith is a personal belief system and serves as a guideline for daily living (Dyess, 2011). It comprises three items (FA1-FA3), characterized by the Spiritual Scale (SS) (Delaney, 2005), JSWBS, and SHALOM/SWBQ. Culturally and generally, Thai people pray and meditate for their inner peace and personal mindfulness and enhanced self-awareness, self-reliance, and self-sufficiency (Thanakwang et al., 2014). Making merit, doing good, and giving alms are the

underlying life principles of older Thai adults and constitute a cultural and religious practice that results in good Karma that will be passed from one generation to the next.

This measuring tool would not be complete without the last component. Research on the awareness of age-related change suggested that understanding the self-limitations of oneself and the ability to handle difficult or unexpected situations should be considered an important key component (Diehl & Wahl, 2010). The modified item of self-efficiency, as derived from the SIWB (Frey et al., 2005), was applied and resulted in three items (AW1-AW3). These items reflect and explain the concept of self-limitation of older Thai adults, where factor loading is better clarified when compared to the SIWB Taiwanese version (Wu et al., 2017). Self-awareness was also mentioned in the AARC (Diehl & Wahl, 2010), which benefits and supports our research findings, especially when older adults realize that their physical and mental well-being has been declining as they continue to mature. This intellectually-based health practice could appreciably affect their behavior and lifestyle choices (Hawks, 2004).

The relationship of the four components and 12 items elucidate the concept of self-awareness of older adults (AW), their enjoyment when participating in social and family activities (SO), their faith and culturally based activities in everyday life (FA), and perceptions and satisfaction levels of their current situation (SA). Each item is mainly supported within its component.

Religious activities and practices (FA2) provide the older Thai adults an opportunity to understand themselves, resulting in self-awareness and an opportunity to continue their social and cultural activities, which are historically based on what they have long believed in. Moreover, participating or accepting invitations to social and community events is culturally ingrained and helps the older adults feel honored and the non-elderly appreciation of the older adults. The Thai elderly thus experience an increased feeling of community recognition (SO3). Joining family and relatives in their activities allows these elderly adults to share a peace of mind and an inner calm (FA3), as well as greater life satisfaction (SA3). Due to the nature of Thai culture, merit-making is always included in a family meeting and community event, as well as with Buddhist festivals and other special days; indeed, it is part of everyday life in Thailand. Further, it provides an opportunity to maintain and follow general concepts, knowledge, beliefs, and values from the past (FA1-cultural conservation) and, as such, is also related to the faith component. However, the factor loading indicates it to be the lowest one. It helps explain their sense of satisfaction (SA) as it supports a high level of satisfaction in their behavior and practice. All three items in the awareness (AW) component indicate a high level of internal consistency when explaining this component.

Finally, this short-form measuring tool (Thai-SWB) has overall high reliability (0.836). When focusing on the four components, it is even then found to have high reliability, with an Alpha Cronbach's coefficient of 0.759 to 0.846. Each item shows the high internal consistency of the scale measurement. Thus, it affirms that the 12 items of the Thai-SWB from this research are appropriate in their contents and the number of questions.

Considering the Alpha Cronbach's coefficient of reliability from different regions (Table 5), the highest reliability is found in the central part. The resulting coefficient may be a function of the language used for each sentence and the ways we posed the questions. Even though Thailand's official language is used in daily dialogue, older adults from ethnic areas are more familiar with the local dialects. Thus, misunderstandings can occur and affect the outcome of our research.

Strengths and limitations

The limitation of this research is not doing the testing stability of the tools by test-retest from the same persons. However, we did compare the tool's reliability used in a different region. Another disadvantage is no comparable test of the tool to other tools as the number of questions would be too long for the older to do. The advantage of this research is that the questionnaire was carried out using a mixed-method. The findings from Phase 1, consisting of either quantitative or qualitative information, were applied as the primary strategy to support the translation of questionnaires to ensure that all questions in the rating scale are easy and appropriate to the socio-cultural context of each region.

Moreover, older adults afflicted with memory limitations and loss of physical function in reading and responding to the questions were excluded and protected by dementia screening from the Thai Mini-Mental State Examination (THAI-MMSE) to ensure that the data gleaned from this research would be valid. Furthermore, we had learned from this research that working with older adults on these subjective issues was not as difficult as we had expected. A good researcher-respondent relationship and time management are the key success factors in doing this fieldwork. Providing respondents more time to recall from memory and maintaining a congenial atmosphere when collecting the data are the advantageous techniques needed to get the data that describes our respondents' day-to-day lives and understand their social and cultural contexts. We thus achieve an appropriate and successful short-form-12 Questions of the Thai-SWB.

Acknowledgments

We would like to express our gratitude to all older Thai adults who participated in this research. Special acknowledgment is due to the village health volunteers in all areas of this study; without them, this research would not have been possible. Lastly, we also extend our thanks to the Chulabhorn International College of Medicine (CICM), Thammasat University, for the scholarship to support this work.

References

Adams, J., Pascal, J., & Dickson-Swift, V. (2014). Spirituality and aging in place: The impact of extreme climatic conditions on domestic gardening practice. *The International Journal of Aging and Human Development, 80*(1), 10-26. https://doi.org/10.1177%2F0091415015591107

Bensley, R. J. (1991). Defining spiritual health: A review of the literature. *Journal of Health Education, 22*(5), 287-290. https://doi.org/10.1080/10556699.1991.10614636

Blazer, D. (1991). Spirituality and aging well. *Generations: Journal of the American Society on Aging, 15*(1), 61-65. www.jstor.org/stable/44876958

Bureau of Registration Administration (BORA). (2017). *Thailand Population 2016.* https://stat.bora.dopa.go.th/stat/pk/pk_59.pdf

Chaiviboontham, S., Phinitkhajorndech, N., Hanucharurnkul, S., & Noipiang, T. (2016). Psychometric properties of the Thai spiritual well-being scale. *Palliative & Supportive Care, 14*(2), 109-117. https://doi.org/10.1017/s1478951515000024

Daaleman, T. P., Kuckelman Cobb, A., & Frey, B. B. (2001). Spirituality and well-being: An exploratory study of the patient perspective. *Social Science & Medicine, 53*(11), 1503-1511. https://doi.org/10.1016/s0277-9536(00)00439-1

Daaleman, T. P., & Frey, B. B. (2004). The spirituality index of well-being: A new instrument for health-related quality-of-life research. *The Annals of Family Medicine, 2*(5), 499-503. https://doi.org/10.1370/afm.89

Delaney, C. (2005). The spirituality scale: Development and psychometric testing of a holistic instrument to assess the human spiritual dimension. *Journal of Holistic Nursing, 23*(2), 145-167. https://doi.org/10.1177/0898010105276180

Diehl, M. K., & Wahl, H. W. (2010). Awareness of age-related change: Examination of a (mostly) unexplored concept. *The Journals of Gerontology: Series B, 65B*(3), 340-350. https://doi.org/10.1093/geronb/gbp110

Diener, E. (1984). Subjective well-being. *Psychological Bulletin, 95*(3), 542–575. https://doi.org/10.1037/0033-2909.95.3.542

Dyess, S. M. (2011). Faith: A concept analysis. *Journal of Advanced Nursing, 67*(12), 2723-2731. https://doi.org/10.1111/j.1365-2648.2011.05734.x

Ellison, C. W. (1983). Spiritual well-being: Conceptualization and measurement. *Journal of Psychology and Theology, 11*(4), 10, 330-338. https://doi.org/10.1177%2F009164718301100406

Fisher, J. (2010). Development and application of a spiritual well-being questionnaire called SHALOM. *Religions, 1*(1), 105-121. https://doi.org/10.3390/rel1010105

Fisher, J. (2011). The four domains model: Connecting spirituality, health, and well-being. *Religions, 2*(1), 17-28. https://doi.org/10.3390/rel2010017

Fisher, J. (2016). Selecting the best version of SHALOM to assess spiritual well-being. *Religions, 7*(5), 45. https://doi.org/10.3390/rel7050045

Fisher, J. W., Francis, L. J., & Johnson, P. (2000). Assessing spiritual health via four domains of spiritual well-being: The SH4DI. *Pastoral Psychology, 49*(2), 133-145. https://doi.org/10.1023/A:1004609227002

Frey, B. B., Daaleman, T. P., & Peyton, V. (2005). Measuring a dimension of spirituality for health research: Validity of the spiritual index of well-being. *Research on Aging, 27*(5), 556-577. https://doi.org/10.1177%2F0164027505277847

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate Data Analysis* (7th ed.). Pearson.

Hamilton, D. M., & Jackson, M. H. (1998). Spiritual development: Paths and processes. *Journal of Instructional Psychology, 25*(4), 262-270.

Hawks, S. (2004). Spiritual wellness, holistic health, and the practice of health education. *American Journal of Health Education, 35*(1), 11-18. https://doi.org/10.1080/19325037.2004.10603599

Hungelmann, J., Kenkel-Rossi, E., Klassen, L., & Stollenwerk, R. (1996). Focus on spiritual well-being: Harmonious interconnectedness of mind-body-spirit-use of the JAREL Spiritual Well-Being Scale: Assessment of spiritual well-being is essential to the health of individuals. *Geriatric Nursing, 17*(6), 262-266. https://doi.org/10.1016/s0197-4572(96)80238-2

Hungelmann, J., Kenkel-Rossi, E., Klassen, L., & Stollenwerk, R. M. (1985). Spiritual well-being in older adults: Harmonious interconnectedness. *Journal of Religion and Health, 24*(2), 147-153. https://doi.org/10.1007/bf01532258

Kim-Prieto, C., Diener, E., Tamir, M., Scollon, C., & Diener, M. (2005). Integrating the diverse definitions of happiness: A time-sequential framework of subjective wellbeing. *Journal of Happiness Studies, 6*(3), 261–300. https://doi.org/10.1007/s10902-005-7226-8

Lepherd, L., Rogers, C., Egan, R., Towler, H., Graham, C., Nagle, A., & Hampton, I. (2019). Exploring spirituality with older people: (1) rich experiences. *Journal of Religion, Spirituality & Aging, 32*(4), 306-340. https://doi.org/10.1080/15528030.2019.1651239

Monod, S., Brennan, M., Rochat, E., Martin, E., Rochat, S., & Büla, C. J. (2011). Instruments measuring spirituality in clinical research: A systematic review. *Journal of General Internal Medicine, 26*(11), 1345-1357. https://doi.org/10.1007/s11606-011-1769-7

Monod, S., Lécureux, E., Rochat, E., Spencer, B., Seematter-Bagnoud, L., Martin-Durussel, A. S., & Büla, C. (2015). Validity of the FACIT-Sp to assess spiritual well-being in elderly patients. *Psychology, 6*(10), 1311-1322. http://dx.doi.org/10.4236/psych.2015.610128

Paloutzian, R. F., & Ellison, C. W. (1982). Loneliness, spiritual well-being and the quality of life. In L. A. Peplau, & D. Perlman (Eds.), *Loneliness: A Sourcebook of Current Theory, Research and Therapy* (pp. 224-236). John Wiley & Sons.

Sessanna, L., Finnell, D. S., Underhill, M., Chang, Y. P., & Peng, H. L. (2011). Measures assessing spirituality as more than religiosity: A methodological review of nursing and health-related literature. *Journal of Advanced Nursing, 67*(8), 1677-1694. https://doi.org/10.1111/j.1365-2648.2010.05596.x

Stoll, R. I. (1979). Guidelines for spiritual assessment. *American Journal of Nursing, 79*(9), 1574-1577.

Tabachnick, B. G., & Fidell, L. S. (1996). *Using multivariate statistics* (3rd ed.). HarperCollins.

Tanyi, R. A. (2002). Towards clarification of the meaning of spirituality. *Journal of Advanced Nursing, 39*(5), 500-509. https://doi.org/10.1046/j.1365-2648.2002.02315.x

Thanakwang, K., Isaramalai, S. A., & Hatthakit, U. (2014). Development and psychometric testing of the active aging scale for Thai adults. *Clinical Interventions in Aging, 9*, 1211-1221. https://doi.org/10.2147/cia.S66069

Wills, E. (2009). Spirituality and subjective well-being: Evidences for a new domain in the personal well-being index. *Journal of Happiness Studies, 10*, 49-69. https://doi.org/10.1007/s10902-007-9061-6

Wu, L. F., Yang, S. H., & Koo, M. (2017). Psychometric properties of the Chinese version of spiritual index of well-being in elderly Taiwanese. *BMC Geriatrics, 17*(1), 3. https://doi.org/10.1186/s12877-016-0392-1

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology, 9*(2), 79-94. https://doi.org/10.20982/tqmp.09.2.p079