Development and Psychometric Testing of the Buddhist Death Acceptance Scale

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Abstract: Death acceptance relates to a good death of people. Notably, each culture/religion has its own traditions, beliefs, and practices surrounding death, which has been handed down for centuries. Culture/religion creates not only the meaning of death, but also often influences how people die. To date, the measurement of death acceptance, especially from a religious perspective, has not been widely developed. This research was conducted to develop and psychometrically test the Buddhist Death Acceptance Scale for Cancer, reflecting Buddhists' beliefs towards *karma*, and three characteristics of existence. Using a multistage sampling method, Buddhists diagnosed with cancer from six hospitals in four regions of Thailand were recruited into the study from April 2018 to January 2019. Exploratory factor analysis was conducted in the first group of 300 participants.

The final version of the questionnaire had 13 items in two components that explained 45.87% of the variation of the construct. These two dimensions were: 1) acceptance of the natural process of death and 2) preparing for death. Confirmatory factor analysis was performed in with 230 participants. The results showed that the two-dimension construct of the scale fit with the empirical data. The Cronbach's alpha coefficient was 0.82. In conclusion, the Scale demonstrated acceptable psychometric properties to measure death acceptance in Buddhists who are diagnosed with cancer. Nurses and other healthcare professionals can use this scale as a tool for evaluating death acceptance and intervention effectiveness among Thai Buddhists with cancer. In addition, next steps include testing the Scale for use with Thai Buddhists at end-of-life with illnesses other than cancer and translating it into other languages to test for use with Buddhists worldwide.

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Introduction

Death is a natural aspect of life. However, to many people, it is abstract, incomprehensible, intangible, unconquerable and reluctant to talk about.[1, 2] Hence, thoughts about death may trigger anticipation, fear, and anxiety. Nevertheless, persons with cancer may have to think about or face death earlier than they expect. In this situation, accepting death has been highlighted as an important attitude that can aid persons in having a more peaceful death.[3]

Death acceptance indicates one's psychological preparation for their inevitable final exit.[4] A study[5]

found that lack of acceptance was one of the characteristics of a bad death in patients in palliative care centers. And significantly, a study conducted by McLeod-Sordjan[6], found that death acceptance can improve the quality of death and patient dignity. This is to say, understanding how patients accept their death is important for nurses and other health professionals in order to provide better end-of-life care to patients.

Although death acceptance is a "positive" perspective towards death, its measurement has not been widely developed. Initially, the Life Attitude Profile[7] (LAP) was introduced, whose dimensions include death acceptance. In this scale, death acceptance means accepting death as a natural aspect of life and the absence of anxiety about death. Later, Death Attitude Profile[8] (DAP) was developed to explore aspects of death attitudes which evolved into the Death Attitude Profile Revised (DAP-R).[9] In this scale, death acceptance is depicted in three aspects, which are: (a) approach acceptance which refers to death being the beginning of a happy afterlife. People who hold this attitude about death often will search for positive ways of coping with their loss; (b) escape acceptance refers to avoidance from suffering. The people who endorse this type of acceptance will think that death may bring them relief from suffering; (c) the neutral acceptance approach recognizes death as a natural part of life. People who embrace the neutral acceptance approach will neither welcome nor fear death.[9] The Buddhist perspective is most congruent with Wong et al.'s neutral acceptance. Lastly, a short death attitude questionnaire with five items using a five-level Likert scale was developed.[10]

Results from these three studies using the three scales discussed above, suggest that the instruments measure death acceptance in one aspect, death attitudes. This cognitive measure may be not comprehensive enough to measure death acceptance in order to clearly understand people with cancer from a holistic perspective assuming that death acceptance is more than cognition but also is expressed cognitive, verbal, and physical. Moreover, from the Buddhist perspective, death acceptance is not only a cognitive process but also includes behavioral expression and is thus expressed verbally and non-verbally.[10]

Notably, fear of death has been present in most cultures and religions for a very long time.[11] However, none of the existing death acceptance measurements was developed based on a specific religious philosophy. Religious and spiritual influences not only the meaning of death and beliefs about what happens after death, but may also define how people deal with death.[12] Consequently, understanding and developing a measure of death acceptance based on a particular religious belief could help to understand and measure death acceptance within a religious/cultural context.

Therefore, the development and psychometric testing of the Buddhist Death Acceptance Scale (BDAS) is needed. The instrument is based on a Buddhist perspective, and is expected to be a reliable and valid tool for nurses and health professionals to assess death acceptance among Thai Buddhists with cancer. The Thai population is almost 95% Buddhist[12], and thus, the instrument is planned to be valid for the vast majority of the population. Additionally, since the BDAS is philosophically based on Buddhism, it may be modified to measure cross-cultural comparisons of death acceptance across Buddhist groups and populations outside of Thailand.

Theoretical Framework

The BDAS was based on an operational definition of death acceptance for Buddhist people. It was defined by the Buddhist literature reviewed. From the literature, it was found that death acceptance referred to an action, force, and/or process (*karma*) that included the thoughts, verbalizations, and actions of people. Death acceptance has to do with a person's responses to death and their understandings about death. Death is understood as a fact that occurs for everybody which is a natural condition,

consistent with the Buddhist principles of suffering *(dukkha), impermanence (anicca), and the non-self (anatta).*[13] These principles are more fully explained below.

Karma. Buddhists believe that their decisions and actions affect the self that they are, and the self they are becoming.[13] The natural law that operates in accordance with human decisions and actions is called *karma,* which according to Theraveda Buddhism, is divided into three modes; thinking, speaking, and doing modes.[13] The repetition of actions of the three modes becomes habitual and eventually turns into a person's character or temperament. Therefore, *karma* can be explained as our own doings reacting on ourselves. The suffering and happiness of humans' experience are the results of their own deeds, words and thoughts reacting on themselves.

The three characteristics of existence. For Buddhists, the reality of life is demonstrated by the three characteristics of existence, which are suffering, impermanence, and non-self.[13] It is believed that to be born is to suffer and attachment of the "self" is one of the sources of suffering. Impermanence means that nothing lasts, nothing exists forever. In defining non-self, Buddhists do not believe that at the core of all human beings and living creatures, there is any eternal, essential and absolute thing called a soul or a self. Indeed, nothing has a permanent existence.[13-15]

Buddhists also believe in the inevitability of death. In other words, death is just a natural law of life. Therefore, they try to psychologically prepare to accept impending death. Buddhists consider death with a peaceful and pure mind as a good death. A good death is very important because it can lead to a higher quality of life during dying, a better rebirth or reincarnation, and even to enlightenment.[13] Enlightenment for a Buddhist refers to a state where one understands the truth of life and stops being reborn. *Dharma* is to reach the highest level of human enlightenment because it works naturally.[15] The enlightened being has reached Nirvana, a state where there is no suffering, desire, nor sense of self, and the enlightened one is released from the effects of *karma* and the cycle of death and rebirth.[13]

Aim

To develop and test the psychometric properties of the BDAS based on Buddhist principles and designed for people with cancer.

Methods

Design: This paper was part of a larger research study entitled "The comparison of death acceptance between Thai and Vietnamese persons with cancer" that used a cross-sectional research design. The scale development guidelines of DeVellis[16] were used to develop the BDAS in this study. It was composed of seven steps including 1) clarifying and defining the concept, 2) generating an item pool, 3) determining the format for measurement, 4) expert review of the initial item pool, 5) conducting preliminary item pilot testing for item review, 6) conducting a field-test for psychometric property testing, and 7) developing scoring and interpretation of the test scores.

Samples and setting: Participants were recruited from six hospitals in four regions of Thailand (North, Northeast, South, and Central) using multistage sampling method from April 2018 to January 2019. Eligibility criteria for study inclusion were comprised of the following: Buddhist with cancer, 18 or older, who knew the diagnosis of their disease, were able to communicate (verbally and read and write in Thai), and who did not have any mental illnesses or developmental disabilities. The participants were divided into three groups: 1) 12 persons diagnosed with terminal cancer and recruited for in-depth interviews to corroborate the specific items, 2) pilot with a convenience sample of 30 persons based on Gray Grove's recommendation that the scale should be administered to 15-30 subjects,[17] and 3) 530 participants recruited for

psychometric property testing. This was based on Auerswald and Moshagen's[18] recommendation of 5-10 participants per item. These participants were randomly split into two groups. The first set of data from 300 participants was exposed to exploratory factor analysis (EFA) for assessing construct validity, while on the second set of data from 230 participants used confirmatory factor analysis (CFA) for confirming the construct of the final BDAS.

Instrument development procedures: The first step in development, generating an item pool for the first draft of the BDAS, was comprised of writing statements covering all aspects of the operational definitions of death acceptance. Moreover, these item statements were congruent with findings from in-depth interviews done with 12 Buddhist persons with terminal cancer that the researchers conducted to corroborate the item statements. The 12 participants had indicated they were willing to talk about their understandings regarding their own experiences with death acceptance. The BDAS's format was a 4-point rating scale, ranging from 1 (strongly untrue), 2 (untrue) to 3 (true), and 4 (strongly true). It consisted of 20 items. The item pool was then reviewed by five Thai experts, who were all Buddhists. Among them, two were nurse educators in palliative cancer care, one was registered nurse in palliative care, one an educator who specialized in measurement development/evaluation, and one was a monk who coaches about death preparation. The relevancy of each item with the proposed concept of death acceptance was checked against the criteria for content validity proposed by Polit and Beck.[19] The researchers used the content validity index (CVI) to quantify the extent of expert agreement. The CVI for an item was calculated as the proportion of experts who rated it as a 3 or 4 in relevance.[20] In this study, content validity was obtained by computing CVI for both item level CVI (I-CVI) and scale level CVI (S-CVI/Ave). The item pool was revised and three items were deleted following comments and suggestions of the experts. The second draft of the scale emerged after content validity testing. After this step, three items were removed from the scale due to their lack of relevancy with the proposed concept of death acceptance. Seventeen items remained for the pilot study. The second draft of the scale was piloted for preliminary item testing with 30 participants checking for readability, difficulty, and relevancy. The final form of the BDAS emerged based on their comments and suggestions with 17 items. For example, one of the items in the BDAS is "I am not afraid of death because death is a natural matter for all people." Another item example is "I can talk with others about my death."

The field test was conducted with 300 participants for assessing construct validity and used exploratory factor analysis (EFA). While the second set of data from 230 participants used confirmatory factor analysis (CFA) for confirming the construct of the final BDAS.

The last step of instrument development process was scoring and interpretation of the test scores. Based on the nature of the items and the rating scale, the higher the score of the BDAS the higher level of death acceptance (more accepting of death). The scoring levels of BDAS were done based on class intervals (range/number of classes) either for each item, dimension or the total score. In this study the scale score was interpreted as three levels of death acceptance that were labeled low level, moderate level, and high level. This process is based on recent work by Eunike and Samuel.[21]

Ethical considerations: The study was approved by the Ethical Review Committee of National Cancer Institute (Approval No. 231-2018RC-OUT561), Lampang Hospital (Approval No. 40/2561), Ubonratchatani Cancer Hospital (Approval No. 004/2018), Suratthani Hospital (Approval No. 19/2561), Suratthani Cancer Hospital (Approval No. 0312.6/622.1), and the Hospital of Excellence in Thai Traditional and Complementary Medicine for Cancer in Sakonnakhon (Approval No. 002/2017), Thailand. Data were collected after permission was obtained from the director of each hospital. The nurses in each hospital helped the researchers to select the volunteer participants and gave detailed information to them. Written informed consent was

obtained from them before data collection was conducted. If the participants did not want to answer the questionnaires or did not have sufficient time to participate in this study, they were reassured they had the rights to withdraw from the study at any time. There were 25 participants who chose not to participate in this study. Patient names or other labels were not collected at the time of data collection preserving patient anonymity. Data are stored in locked files which will be destroyed after publication.

Data collection: The data were collected after ethical approval from April 2018 to January 2019. Participants answered the questionnaire in a private area by themselves. They took approximately 20 minutes to complete the questionnaire.

Data Analysis: Descriptive statistics, including means and standard deviations, were computed for participant demographics. The Cronbach's alpha coefficient was used to assess the internal consistency reliability of the BDAS.

EFA was conducted to assess the construct validity. The principal components analysis (PCA) method was used for factor extraction which is the first phase of EFA. After choosing the number of factors, Varimax rotation was applied to redefine factors with loadings greater than 0.30 on various factors, or, those that tended to be very high (-1 or 1) or very low (0).[22] This rotation method has been proven to be an effective analytical approach. CFA was then used to confirm the construct of BDAS that has been found by EFA. The goodness of fit of the model was examined against the Goodness of Fit Index (GFI>0.95), the Adjusted Goodness of Fit Index (AGFI>0.95), Comparative Fit Index (CFI>0.95), the Root Mean Square Error of Approximation (RMSEA<0.05), and the Standardized Root Mean Square Residual (SRMR≤0.08).[23]

Results

Participant characteristics: For EFA, the age of the 300 participants ranged from 18 to 85 years old (mean = 54.04±11.16). The majority of participants were female (58.70%) and married (77.70%). Nearly half of them had completed elementary school (47.00%). The most common diagnosis was breast cancer (23.00%), and those with stage IV of the disease accounted for the largest proportion (33.00%).

For CFA, the age of the 230 participants ranged from 21 to 84 years old (mean = 54.41±11.39). The majority of participants again were female (63.50%) and married (76.50%). Nearly half of them had completed elementary school (47.00%). The most common diagnosis was breast cancer (30.40%), and those with stage IV of the cancer accounted for the largest proportion (39.6%).

Reliability: The internal consistency coefficient of the BDAS was 0.82. For subscales, the Cronbach's alpha coefficients of the two dimensions of the scale, "Acceptance of the natural process of death" and "Preparing for death" were 0.87, and 0.69, respectively (Table 1).

Content validity index: The results showed that the overall BDAS had I-CVI scores that ranged from 0.80 - 1.00 and the S-CVI/Ave score was 0.93.

Construct validity: Before conducting the EFA, assumptions of the EFA statistic were examined, including normality, multicollinearity, Bartlett's test of sphericity, and the Kaiser-Meyer-Olkin Measure of Sampling Adequacy. The results showed that the data were appropriate for factor analysis (Bartlett's test = 1,707, $p < 0.001$, KMO = 0.85). The PCA method with Varimax rotation was then applied to the 17 items of the BDAS. The Minimum Average Partial (MAP) criterion was used to determine the number of factors extracted. As a result, 4 items were excluded because of low factor loading, and two dimensions (Preparing for death and Acceptance of the natural process of death) were extracted (squared partial correlation= 0.023 at 2 factors). About 45.87% of the total variance was explained by the two factors. The loading factors of items ranged from 0.53 to 0.76 (Table 1).

Table 1 Factor loadings and communality index (H^2) for each item based on exploratory factor analysis of the BDAS (n = 300)

Item	Factor		H^2
	I	II	
Acceptance of the natural process of death			
4. I am not afraid of death because death is a natural matter for all people	0.65	-0.23	0.47
10. I think that my family can overcome their grief after I die	0.57	0.21	0.37
11. I can live with pain without suffering	0.58	0.26	0.41
12. I accept the symptoms and can live with them without suffering	0.61	0.28	0.45
13. I can talk with others about my death	0.73	0.09	0.54
14. I accept the results of the treatment because I think nothing can be certain in this life	0.53	0.20	0.32
15. I believe that releasing everything will help me die peacefully	0.63	0.24	0.46
16. Seeing the death of others makes me accept my death	0.76	0.16	0.60
17. Death is unavoidable, so I am willing to use my time left to help others	0.74	-0.13	0.56
Preparing for death			
6. I request not to use any aggressive treatments to prolong my life	-0.04	**0.54**	0.29
7. Conversations and making plans about managing my property is useful for my family and others	0.07	**0.68**	0.46
8. Talking about my concerns before I die makes me comfortable	0.19	**0.71**	0.54
9. The planning of my funeral decreases the burden on my family and others	0.28	**0.66**	0.51
% variance explained	29.98%	15.90%	45.87%
reliability (Cronbach's α)	0.87	0.69	0.82

CFA was used to test the stability of the two-factor structure of the 13-item BDAS. A second-order two-factorial model with a common death acceptance factor showed a good fit to the data. The values of GFI, AGFI and CFI were 0.92, 0.96, and 0.99, respectively. In addition, the RMSEA was 0.037 and the SRMR was 0.047 (table 2). Table 2 and figure 1 present the results of the CFA. It was found that the two-dimension model of BDAS fit with the empirical data. The chi-square test was non-significant. The values of GFI, AGFI and CFI were 0.92, 0.96, and 0.99, respectively. In addition, the RMSEA was 0.037 and the SRMR was 0.047.

Table 2 Factor loading (L), standardize factor loading (l), and reliability (R2) of each item based on confirm factor analysis of the BDAS (n = 230)

No.	Factors/Items	L	l	R^2
	Acceptance of the natural process of death	**0.76****	**1.00**	**1.00**
4.	I am not afraid of death because death is a natural matter for all people	0.59**	0.53	0.28
10.	I think that my family can overcome their grief after I die	0.93**	0.62	0.39
11.	I can live with pain without suffering	0.61**	0.51	0.26
12.	I accept the symptoms and can live with them without suffering	0.67**	0.56	0.32
13.	I can talk with others about my death	0.95**	0.63	0.40
14.	I accept the results of the treatment because I think nothing can be certain in this life	0.36**	0.46	0.21
15.	I believe that releasing everything will help me die peacefully	0.72**	0.72	0.52

Table 2 Factor loading (L), standardize factor loading (l), and reliability (R2) of each item based on confirm factor analysis of the BDAS (n = 230) (Cont.)

No.	Factors/Items	L	l	R^2
16.	Seeing the death of others makes me accept my death	0.94**	0.79	0.63
17.	Death is unavoidable, so I am willing to use my time left to help others	0.56**	0.51	0.26
	Preparing for death	**0.54****	**0.54**	**0.29**
6.	I request not to use any aggressive treatments to prolong my life	0.30**	0.33	0.11
7.	Conversations and making plans about managing my property is useful for my family and others	0.44**	0.50	0.25
8.	Talking about my concerns before I die makes me comfortable	0.57**	0.65	0.43
9.	The planning of my funeral decreases the burden on my family and others	0.62**	0.63	0.40

χ^2=68.19, df=52, p-value=0.065, GFI=0.96, AGFI=0.92, CFI=0.99, RMSEA=0.037, SRMR=0.047, CN=255, * p<.01

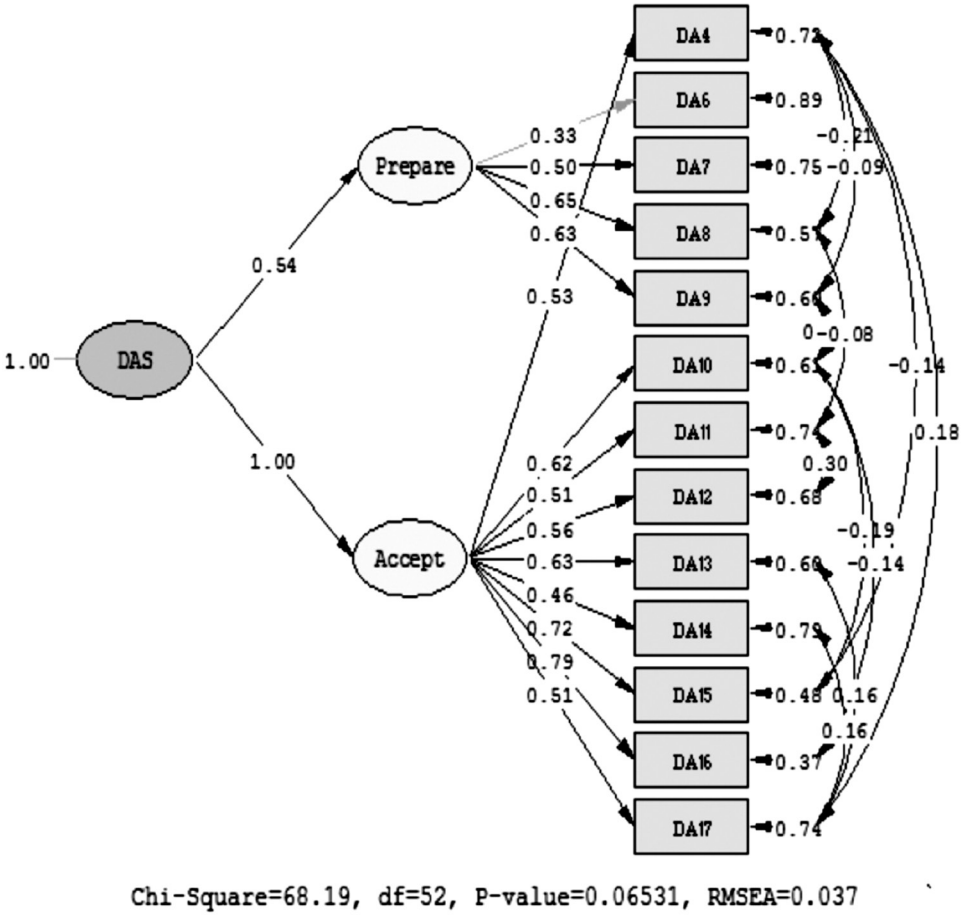

Figure 1 Secondary order of CFA (n=230)

The BDAS characteristics: The final version of BDAS is a self-reported questionnaire that consists of 13 items covering two dimensions, acceptance of the natural process of death (9 items), and preparing for death (4 items). The questionnaire has a 4-choice rating scale format, scoring each item from 1 to 4 (strongly untrue = 1, untrue = 2, true = 3, and strongly true = 4). Mean score was calculated for the scale. The scale score was interpreted as the level of death acceptance that was low level (1.00-2.00), moderate level (2.01-3.00), and high level (3.01-4.00).

Discussion

The findings demonstrate that the BDAS is an acceptable measurement for death acceptance in Buddhist cancer populations. EFA performed in the set of data with 300 participants demonstrated that the BDAS was composed of two dimensions. They were "Acceptance of the natural process of death" and "Preparing for death." The two dimensions explained 45.87% of the variance of the construct. CFA based on data from 230 other participants confirmed the two-dimension construct of the BDAS and indicated acceptable goodness-of-fit criteria. The Cronbach's alpha coefficient of the BDAS was 0.82, and those of the subscales were 0.87 (Acceptance of the natural process of death) and 0.69 (Preparing for death). These values are acceptable for a newly developed scale[24], reflecting that the items within the scale measure the same concept. However, it should be noted that the Cronbach's alpha coefficient of the Preparing for death subscale was modest. This could be partially explained by the small number of items (4) of this dimension.

Each of the two dimensions present different ideas related to death acceptance in Buddhism. According to a Buddhist principle[13], suffering is the first noble truth or characteristic of existence. To be born is to suffer and attachment of the "self" is one of the sources of suffering. The items in the acceptance of the natural process of death dimension of the BDAS focused on awareness of death and the dying process and that is associated with suffering. It is a Buddhist principle[13] that everything in our life can cause suffering, including being born, being old, being ill, and dying. In addition, everything can be destroyed. Everyone must face this suffering.[13] The items were developed in order to explore thinking, speaking and/or acting of people with these ideas in mind. Nine items of this factor demonstrated modest loadings factors, ranging from 0.53 to 0.76. The factor asked directly about the process of death and dying and it accounted for the largest variance of death acceptance (29.98%).

The second dimension found was preparing for death. From the Buddhist perspective, everything is impermanent. This means that nothing lasts, nothing exists forever. People with cancer who accept their death will prepare for it. The dimension, preparing for death, focused on items questioning about the awareness of death and the dying process as related to impermanence. Death is just a natural law of life. Therefore, Buddhists try to psychologically prepare to accept impending death. One of the items within this subscale indicated whether the respondent would like to avoid life-prolonging interventions while the other three items had to do with planning for death and after. A basic Buddhist principle states that everything is impermanent, even the self or soul. Hence, avoiding life-prolonging interventions may reflect that the person accepts his or her death because of their understanding of egoless-ness or non-self and because they choose non-attachment to their own selves which are so often the cause of suffering. However, avoiding life-prolonging interventions needs to be studied more because of the wide variation of peoples' understanding of beliefs and perspectives on sin and merit.[22]

Death acceptance is a dynamic process and usually not achieved all at once. However, people who have accepted death will not have the feeling of being lost when they know that they are going to die. They have a will to live and want to be conscious for their remaining lives and they tend to have peaceful deaths. However, people who cannot accept their coming death often feel suffering and are not well prepared for it. Moreover, the BDAS includes a definition of death acceptance that is

more than attitude and cognition to encompass behavior, and embodied expression of the concept.

To our knowledge, BDAS is the first scale assessing death acceptance for Thai Buddhists with cancer. Some authors have modified the Spiritual Well Being Scale (SWBS) for Thailand.[25] Nevertheless, although the modified Thai SWBS is a reliable and valid measurement of spiritual well-being among cancer populations, it does not address death acceptance directly. One of its subscales, peacefulness, reflects the role of religious practice/belief in the spiritual well-being of the respondents. Additionally, it should be noted that since the BDAS is philosophically based on Buddhism, it may be modified to measure cross-cultural comparisons of death acceptance across Buddhist groups and populations outside of Thailand.

Limitations

This is an early iteration of this scale and more nuanced development is recommended. Buddhism is not only a religion. It is, to certain degree, a philosophy and certainly influences culture. Items of this scale were developed based on Buddhist literature and the understanding towards death and life of a group of Buddhists with cancer. Because of this limitation, the initial item pool might not be reflective of all Buddhist views towards death. Therefore, further refinement of the concept of death acceptance, as well as the development of additional items, should be considered. That would help to improve both validity and reliability of the scale. Future studies are also recommended to employ other methods for construct validity of the BDAS, such as concurrent or convergent validity.

Conclusions and Implications for Nursing Practice

The BDAS was developed based on Buddhist perspectives towards death and life, including *karma*, suffering, impermanence, and non-self. The study found that the BDAS demonstrated acceptable psychometric properties to measure death acceptance in Thai Buddhists who are diagnosed with cancer. Therefore, nurses can use this BDAS to assess and evaluate their interventions aimed at helping Buddhists with cancer. However, before use with people who have other terminal illnesses, the BDAS needs to be tested. And once the scale is translated, it can be tested for applicability with Buddhists who are not Thai. Therefore, this scale is expected to contribute to studies on death acceptance in Buddhist populations by health professionals worldwide. More importantly, it will also permit the cross-cultural comparison of death acceptance among different countries. However, the BDAS needs further revision and refinement so it should be adopted for use with caution.

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การพัฒนาและตรวจสอบคุณภาพเครื่องมือการยอมรับความตายวิถีพุทธ

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บทคัดย่อ: การยอมรับความตายมีความสัมพันธ์กับการตายดีของผู้ที่เป็นมะเร็งในแต่ละวัฒนธรรมและศาสนา มีประเพณี ความเชื่อ และการปฏิบัติเกี่ยวกับความตายที่แตกต่างกันมาอย่างยาวนานหลายศตวรรษ วัฒนธรรม/ศาสนาไม่เพียงแต่มีอิทธิพลต่อความหมายของความตายเท่านั้น แต่ยังมีอิทธิพลต่อการตายของผู้คน ในปัจจุบันนี้เครื่องมือวัดการยอมรับความตายที่มาจากมุมมองทางศาสนายังมีการพัฒนาน้อย การศึกษานี้จึงมีวัตถุประสงค์ เพื่อพัฒนา และตรวจสอบคุณภาพของเครื่องมือการยอมรับความตายวิถีพุทธในผู้ที่เป็นมะเร็ง โดยเกี่ยวข้องกับแนวคิดในพุทธศาสนาเรื่องกรรม และกฎไตรลักษณ์ โดยใช้กระบวนการการพัฒนาเครื่องมือของเดอเวลลิส งานวิจัยครั้งนี้ใช้การสุ่มแบบหลายขั้นตอนจากผู้ที่เป็นมะเร็งชาวพุทธ จากหกโรงพยาบาลในสี่ภูมิภาคของประเทศไทย ระหว่างเดือนเมษายน 2561 ถึงเดือนมกราคม 2562 ทำการวิเคราะห์องค์ประกอบเชิงสำรวจในกลุ่มตัวอย่างจำนวน 300 คน

ผลการวิเคราะห์องค์ประกอบเชิงสำรวจ ได้เครื่องมือฉบับสุดท้ายที่พัฒนาขึ้น จำนวน 13 ข้อคำถาม 2 องค์ประกอบ ที่สามารถอธิบายความผันแปรของข้อมูลได้ร้อยละ 45.87 ได้แก่ 1) การยอมรับกระบวนการธรรมชาติของการตาย และ 2) การเตรียมตัวตาย หลังจากนั้นทำการวิเคราะห์องค์ประกอบเชิงยืนยันในกลุ่มตัวอย่างอีก 230 คน พบว่าข้อมูลเชิงประจักษ์มีความสอดคล้องกลมกลืนกับผลการวิเคราะห์องค์ประกอบเชิงสำรวจ แบบประเมินนี้มีค่าความเชื่อมั่นตามสูตรสัมประสิทธิแอลฟาของครอนบาคเท่ากับ 0.82 กล่าวโดยสรุปเครื่องมือการยอมรับความตายวิถีพุทธนี้ผ่านเกณฑ์การตรวจสอบคุณภาพของเครื่องมือที่สามารถวัดการยอมรับความตายในผู้ที่เป็นมะเร็งชาวพุทธได้ ดังนั้นบุคลากรสุขภาพสามารถใช้เครื่องมือนี้ประเมินการยอมรับความตายในผู้ที่เป็นมะเร็งชาวไทยพุทธ และนำไปสร้างการพยาบาลสำหรับดูแลผู้ป่วยกลุ่มนี้ได้ ในการวิจัยครั้งต่อไปควรมีการทดสอบคุณภาพเครื่องมือนี้กับชาวไทยพุทธที่อยู่ในระยะสุดท้ายกลุ่มอื่น ๆ และนำเครื่องมือนี้ไปแปล และทดสอบคุณภาพของเครื่องมือกับชาวพุทธทั่วโลก

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