

บทความวิจัย

โมเดลเชิงโครงสร้างความเข้มแข็งภายในของภรรยาผู้ดูแลสามี ที่ป่วยเป็นมะเร็งระยะลุกลาม

A STRUCTURAL MODEL OF INNER STRENGTH OF SPOUSAL CAREGIVERS AMONG PATIENTS WITH ADVANCED CANCER

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บทคัดย่อ

โรคมะเร็งระยะลุกลามมีผลกระทบต่อภรรยา รวมถึงผู้ดูแลคนอื่น ๆ เช่น บุตร ธิดา ก่อให้เกิดความทุกข์จากหน้าที่ความรับผิดชอบในชีวิตประจำวันที่ต้องเปลี่ยนแปลง ความเข้มแข็งภายในจะช่วยทำให้ทักษะการแก้ปัญหาเพิ่มขึ้น และลดความเครียดจากการดูแล การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อพัฒนาโมเดลความเข้มแข็งภายในของภรรยาผู้ดูแลสามีที่ป่วยเป็นมะเร็งระยะลุกลาม และศึกษาความสัมพันธ์เชิงสาเหตุระหว่างความสามารถในการเผชิญ การสนับสนุนทางสังคม ภาระในการดูแล การสนับสนุนทางสังคม ความพึงพอใจทางจิตวิญญาณ และความเข้มแข็งภายใน กลุ่มตัวอย่างเป็นภรรยาผู้ดูแลผู้ป่วยโรคมะเร็งระยะลุกลามจำนวน 195 รายที่มารับบริการ ณ โรงพยาบาลสระบุรี สถาบันมะเร็งแห่งชาติ และโรงพยาบาลมะเร็งลพบุรี เก็บรวบรวมข้อมูลโดยใช้แบบสอบถามจำนวน 6 ชุด ได้แก่ แบบวัดความเข้มแข็งภายใน แบบสอบถามภาระในการดูแล แบบสอบถามการรับรู้แรงสนับสนุนทางสังคม แบบวัดพฤติกรรมการเผชิญความเครียด แบบวัดความพึงพอใจทางจิตวิญญาณ การวิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนาและโมเดลสมการโครงสร้าง

ผลการวิจัยพบว่า โมเดลมีความสอดคล้องกับข้อมูลเชิงประจักษ์และสามารถทำนายความผันแปรของความเข้มแข็งภายในของภรรยาผู้ดูแลสามีที่ป่วยเป็นมะเร็งระยะลุกลามได้ร้อยละ 60 โดยความสามารถในการเผชิญความเครียด การรับรู้แรงสนับสนุนทางสังคม ภาระในการดูแล และความพึงพอใจทางจิตวิญญาณของภรรยา มีอิทธิพลโดยตรงทางบวกต่อความเข้มแข็งภายใน ความสามารถในการเผชิญความเครียดมีอิทธิพลโดยตรงทางบวกต่อความเข้มแข็งภายในและมีอิทธิพลทางอ้อมต่อความเข้มแข็งภายในผ่านภาระในการดูแล การรับรู้แรงสนับสนุนทางสังคมมีอิทธิพลทางบวกทั้งโดยตรงและโดยอ้อมต่อความเข้มแข็งภายในผ่านความพึงพอใจทางจิตวิญญาณ นอกจากนี้ความพึงพอใจทางจิตวิญญาณยังมีอิทธิพลทางบวกทั้งโดยตรงและโดยอ้อมต่อความเข้มแข็งภายในผ่านภาระในการดูแล พยาบาลควรประเมินความเข้มแข็งภายในของภรรยาผู้ดูแลและควรมีการพัฒนาโปรแกรมโดยใช้ผลจากการศึกษาในครั้งนี้เพื่อส่งเสริมความเข้มแข็งภายในของภรรยาผู้ดูแล

คำสำคัญ: ผู้ดูแลที่เป็นภรรยา, มะเร็งระยะลุกลาม, ความเข้มแข็งภายใน, โมเดลเชิงโครงสร้าง

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Abstract

Advanced cancer affects distress among female-caregiver spouses because of changes in daily caregiving responsibilities. However, inner strength increases problem solving skills and decreases caregiving stress. The purpose of this study was to develop a causal model of inner strength among female-caregiver spouses of patients with advanced cancer and examine the causal relationship among coping ability, social support, caregiver burden, spirituality, and inner strength. The participants consisted of 195 female-caregiver spouses of patients with advanced cancer at Saraburi Hospital, National Cancer Institute, and Lopburi Cancer Hospital. A set of questionnaires (demographic records, Inner strength Scale, Zarit Burden Interview, Social Support Questionnaire, Jalowiec Coping Scale, and Spiritual Well-Being Scale) was used to collect data. Data were analyzed using descriptive statistics, and Structural Equation Modeling.

Findings revealed that the final model fitted with the empirical data and explained 60% of the variance in female-caregiver spouses' inner strength. The results indicated that coping ability, social support, caregiver burden, and spirituality had a significant positive and direct effect on female-caregiver spouses' inner strength. Coping ability had a direct positive effect on inner strength and an indirect effect on inner strength through caregiver burden. Social support had a direct positive effect on inner strength and an indirect effect on inner strength through spirituality. As expected, spirituality had a direct positive effect on inner strength and indirect effect on inner strength through caregiver burden.

Nurses should assess the female-caregiver spouses' inner strength. Nursing interventions should be developed based on the findings to enhance inner strength among the female-caregiver spouses.

Keywords: female caregiver spouses, advanced cancer, inner strength, Structural Model

Introduction

Advanced cancer affects female caregiver spouses as co-sufferers of the disease (Walker, 2002). Female spouses were identified as the most vulnerable group of caregivers, who experience more strain, poorer health and subsequently become ill (Nijboer, Tempelaar, Sanderma, Triemstra, Spruijt, & Van Den Bos, 1998). Female caregiver spouses could handle stressful events by developing inner strength. Inner strength is the ability to resist and endure life adversities (Lundman, Alex, Jonsen, Norberg, Nygren, Fischer, & Strandberg, 2010). Gaining inner strength might decrease feelings of burden and psychological distress. Therefore, it is important to enhance inner strength (Alpers, Helseth, & Bergbom, 2012).

Female caregiver spouses who have low inner strength will not have the ability to handle negative experiences of caregiving and perform an effective caregiver's role. In contrast, female caregiver spouses who had inner strength could endure the negative effects of caregiving (Agren, Frisman, Berg, Svedjeholm, & Stromberg, 2009; Girard, 2010; Grotberg, 2004). The enhancement of inner strength could decrease feelings of being burdened, psychological distress, and subsequently lead to a positive effect (Alpers, Helseth, & Bergbom, 2012). Nurses can help female caregiver spouses of husbands with advanced cancer to promote inner strength by identifying the related factors.

Previous studies revealed the factors affecting inner strength including social support, coping ability, caregiver burden, and spirituality associated with inner strength. Coping ability enhanced inner strength. Individuals who could reduce their difficulties using effective coping strategies are considered to retain

inner strength (Haile, Landrum, Kotarba, & Trimble, 2002; Trimble, 1999). Social support helps women more likely to grow in inner strength (Lewis, 2004; Agren, Frisman, Berg, Svedjeholm, & Stromberg, 2009). Social support was a resource of strength and could contribute to feelings of security, belonging and foundation in reality (Alpers, Helseth, & Bergbom, 2012). Spouses who face caregiver burden may face low inner strength. Lewis and Roux (2011) indicated that people who faced with life adversities expanded and emerged in inner strength during their life. Spirituality was a source of inner strength that enabled caregivers to overcome various challenges within the caregiving experience (Waldrop, Kramer, Skretny, Milch, & Finn, 2005). The courage to continue striving to find life meaningful was a source of inner strength (Lundman, et al., 2010). Similarly, the studies of Thai caregivers revealed that caregiver's burden, coping, and social support are related to caregiver outcomes (Meecharoen, Northouse, Sirapo-ngam, & Monkong, 2013). Even though studies in Western cultures revealed that these factors play an important role in people's perceptions of their inner strength, such studies may or may not be relevant to Thai caregivers. Moreover, the study about these factors influencing Thai caregivers' inner strength is unavailable. The causal relationships among coping ability, social support, caregiver burden and spirituality and inner strength of Thai female caregiver spouses have not been reported. This study concentrated on female caregiver spouses and considered the importance of these factors and their associations with inner strength. Hence, the purpose of this study was to develop and test a model of inner strength among female caregiver spouses of patients with advanced cancer.

Hypotheses

1. Coping ability has a direct positive effect on inner strength and an indirect effect on inner strength through caregiver burden and spirituality.
2. Social support has a direct positive effect on inner strength and an indirect effect on inner strength through caregiver burden and spirituality.
3. Spirituality has a direct positive effect on inner strength and an indirect effect on inner strength through caregiver burden.
4. Caregiver burden has a direct negative effect on inner strength.

Research Method

Design: This study employed a cross-sectional, predictive correlational design.

Sample and Sample size

The participants consisted of female caregiver spouses taking care of their husbands advanced cancer (stage $\geq$ III) with inclusion criteria; 1) aged $\geq$ 18 years old, 2) having experienced a duration of care $\geq$ 1 month since their husbands received a diagnosis of advanced stage cancer and experience in providing care for husbands with advanced cancer who might be unable to care for themselves and 3) able to communicate in Thai. The sample size of this study was calculated with a ratio of five respondents for each estimated parameter (Hair, Anderson, Tatham & Black, 1998 cited in Santati, 2005). A total of 39 free parameters were estimated; thus, the sample size totaled 195 respondents.

Sampling technique

The research settings for this study comprised hospitals under the jurisdiction of the Ministry of Public Health in central Thailand. The cluster random sampling technique was used to recruit the subjects.

Female caregiver spouses who met the inclusion criteria were recruited. The procedures are described below. First, cluster sampling was used to select three settings from the tertiary care and excellence center under the jurisdiction of the Ministry of Public Health in central Thailand. Second, settings were randomly selected; Saraburi Hospital, National Cancer Institute and Lopburi Cancer Hospital. Finally, the number of female caregiver spouses who met the inclusion criteria were recruited from in- and outpatient units of each setting.

Instruments

Data was collected using demographic records, Inner Strength Scale (ISS), Zarit Burden Interview (ZBI), Social Support Questionnaire (SSQ), Jalowiec Coping Scale (JCS) and Spiritual Well-Being Scale (SWBS). Permission to use these tools was obtained from the original developers of the instruments in English and Thai.

The Inner Strength Scale (ISS) was used to measure inner strength. ISS consisted of 20 items, with 5 items in each of the four dimensions of inner strength: firmness, creativity, connectedness and flexibility (Lundman et al., 2010). The scores ranged from 20 to 120 with higher scores denoting higher degrees of inner strength. The ISS was translated from English to Thai language using the back translation technique. The ISS was tested for content validity. Content validity was used to test the ISS using five experts who obtained doctoral level in nursing science and having experience in instrument translation. Cronbach's alpha coefficient for reliability testing of ISS was .91.

The Jalowiec Coping Scale (JCS) was used to measure coping ability developed by Jalowiec, Murphy, and Powers (1984). The JCS was translated to Thai by Prungdej (1990). It measures coping

strategies of family caregivers and consists of three domains: confrontive coping (13 items), emotive coping (9 items) and palliative coping (14 items). The total coping score was within the range of 36 to 180. The greater the score the more frequent the use of coping. The cronbach's alpha coefficients for reliability testing of JCS was .84.

The Social Support Questionnaire (SSQ) was used to measure social support. The SSQ was modified by Hanucharunkul (1988) and was designed to measure informational, emotional and tangible support. The first question served as a measure of informational support. The second to fifth questions measured the domain of emotional support. The last two questions measured the domain of tangible support. The 21-item questionnaire included three sources of support including family members, health care providers and friends. The total score ranged from 0 to 84 with a high score indicating high perceived social support. The cronbach's alpha coefficient was .89.

The Zarit Burden Interview (ZBI) was used to measure caregiver burden. The ZBI was developed by Zarit, Reever, and Bach-Peterson (1980). It was translated to Thai language by the Mapi Research Institute (2015) and had two dimensions: personal strain (12 items) and role strain (6 items). Total scores ranged from 0 (low burden) to 72 (high burden). The cronbach's alpha coefficient was .91.

The Spiritual Well-Being Scale (SWBS) modified from the Spiritual Well-Being Scale for Thai Buddhist Adults with Chronic Illness (SWBS-TBACI) which was developed by Promkaewngam, Pothiban, Srisuphan, and Sucamvang, (2014). The SWBS was used to measure spirituality. It consisted of a 14-item instrument that consisted of three subscales measuring having hope and sense of connectedness, under-

standing self and nature of life, and being happy. The score ranged from 14 to 70. High scores represented a high degree of spiritual well-being. The cronbach's alpha coefficients was .87.

Ethical consideration

Permission to conduct this study was obtained from the Institutional Review Board of the Faculty of Nursing, Burapha University, Saraburi Hospital, the National Cancer Institute, and Lopburi Cancer Hospital. Participants received an overall explanation of the purpose and procedures of the study, methods to preserve confidentiality, and the right to withdraw from this study at any time.

Data collection

Data were collected from April to December 2016. Participants who met the inclusion criteria were recruited. The researcher and research assistant approached the participants at inpatient units. Next, the researcher and research assistant contacted wives of patients with advanced cancer by directly asking to introduce themselves at a bedside. They explained the objectives of the study and informed them of the protection of human subjects. If they agreed to participate, the researcher brought them to the private area to sign an informed consent form. They were asked to complete the questionnaires approximately 30 to 45 minutes in a private area in a ward or unit. A total of 195 wife caregivers participated in this study and completed all the questionnaires.

Data Analysis

The data was analyzed using the SPSS™, and the Analysis of Moment Structures Program (AMOS). The demographic characteristics of the subjects were described using descriptive statistics. Model estimate was performed by the AMOS Program using the Maximum Likelihood (ML) method that

was a method of estimating the parameters of a statistical model, given observations. The full model was tested for goodness-of-fit index.

Results

The results of the study found that the mean age of the participants was 52.62 (SD= 9.32). Year of marriage was years of 27.67 (SD= 11.84). The majority of participants was Buddhists (99.5%) and finished primary school (62.6%). A total of 32.8% of participants were laborers and 28% were agriculturists. Their monthly income was a mean of 15,623.08 THB (SD= 17,343.90). In addition, 40.5% of participants had insufficient living expenses. The participants' family expenditure for the subjects was a mean of 7,436.00 THB (SD= 5,512.24). Most participants (57.4%) reported good health status. The duration of giving care was a mean of 7.14 months (SD= 8.89). More than one-half of participants (66.2%) cared for the patients less than 12 months. Most (61.5%) had adult children as a secondary caregiver.

The advanced cancer patients mean age was 57.36 (SD= 9.93). More than one half were covered by the universal coverage scheme (70.8%). The majority were Buddhist (99.5%). The cancer site included the head and neck (31.3%), esophagus (19.0%) and colon, rectum and stomach (18.5%), while 54.9% were at stage 3. The duration of illness was a mean of 8.74 months (SD= 9.72). The treatment for cancer comprised chemotherapy and radiation (30.8%) and 22.1% received radiation. In addition, medical devices included gastrostomy tube (23.2%), colostomy bag (17.1%) and NG-tube and tracheostomy tube (13.4%).

Descriptive statistics of the study variables

Descriptive statistics of the continuous study variables and subscales included coping ability, social support, caregiver burden, spirituality and inner strength as presented in Table 1.

The testing of the model of inner strength of female caregiver spouses of patients with advanced cancer resulted in a good fit to the empirical data and explained 60% of variance. The finding partially supported the hypothesis as described below and as shown in Table 2 and Figure 1.

Hypothesis 1: Coping ability has a direct positive effect on inner strength an indirect effect on inner strength through caregiver burden and spirituality.

As expected, coping ability had a direct positive effect on inner strength. Moreover, the finding indicated that coping ability had an indirect effect on inner strength only through caregiver burden. Thus, this hypothesis was partially supported.

Hypothesis 2: Social support has a direct positive effect on inner strength and an indirect effect on inner strength through caregiver burden and spirituality.

The finding supports that social support had a direct positive effect on inner strength. In addition, the parameter estimates of social support had an indirect effect on inner strength only through spirituality. Thus, this hypothesis was partially supported.

Hypothesis 3: Spirituality has a direct positive effect on inner strength and an indirect effect on inner strength through caregiver burden.

The finding support that spirituality had a direct positive effect on inner strength and had indirect effect on inner strength through caregiver burden. Thus, this hypothesis was supported.

Table 1 Descriptive statistics of the study variables (n=195)

Variable	Possible Range	Actual Range	M	SD
Coping ability	36-180	47-154	95.05	16.48
Confrontive coping	13-65	14-65	39.38	10.16
Emotive coping	9-45	9-29	18.42	3.96
Palliative coping	14-70	21-51	37.04	6.45
Social support	0-84	24-78	49.52	11.67
Informational support	0-12	3-12	8.11	2.07
Emotional support	0-48	16-48	33.01	7.84
Tangible support	0-24	1-23	10.50	4.11
Caregiver burden	0-72	1-64	19.99	13.39
Personal strain	0-48	0-41	14.22	8.47
Role strain	0-24	0-23	5.77	5.82
Spirituality	14-70	35-70	59.24	7.33
Having hope and sense of connectedness	6-30	15-30	25.87	2.14
Understanding self and nature of life	4-20	11-20	17.63	2.14
Being happy	4-20	6-20	15.74	3.13
Inner strength	20-120	55-120	97.81	13.03
Firmness	5-30	14-30	26.22	3.93
Creativity	5-30	5-30	23.23	4.75
Connectedness	5-30	13-30	24.76	3.85
Flexibility	5-30	14-30	23.59	3.83

Hypothesis 4: Caregiver burden has a direct negative effect on inner strength.

The parameter estimates for caregiver burden had significant direct positive effect on inner strength. Thus, this hypothesis was not supported.

In conclusion, the final model was modified to fit the empirical data and explained 60% of the variance in inner strength (Table 3). The findings revealed that coping ability had a direct positive effect on inner strength and an indirect effect on

inner strength through caregiver burden. The parameter estimates also revealed that social support had a direct positive effect on inner strength and an indirect effect on inner strength through spirituality. As expected, spirituality had a direct positive effect on inner strength and an indirect effect on inner strength through caregiver burden. In addition, caregiver burden had a significant direct positive effect on inner strength.

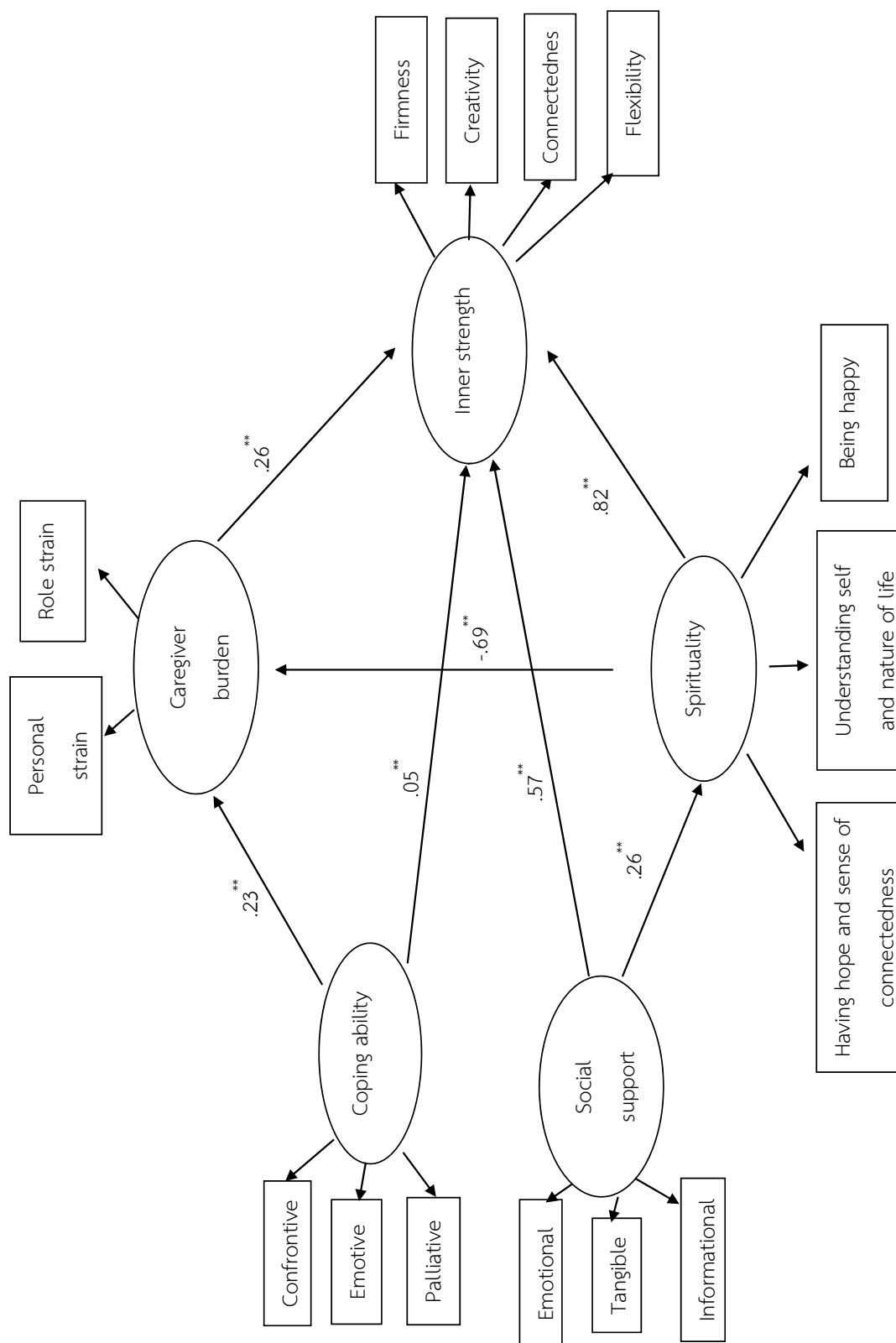


Figure 1 Modified model of inner strength of female caregiver spouses among patients with advanced cancer

Table 2 Direct (DE), Indirect (IE), and Total Effect (TE) of the modified model of inner strength of spousal caregivers among patients with advanced cancer

Causal variables	Caregiver burden			Spirituality			Inner strength		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
Coping ability	.23**	-	.23**	-	-	-	.05**	.06**	.11**
Social support	-	-	-	.26**	-	.26**	.57**	.17**	.74**
Caregiver burden	-	-	-	-	-	-	.26**	-	.26**
Spirituality	-.69**	-	-.69**	-	-	-	.82**	-.18**	.64**
	$R^2 = .263$			$R^2 = .054$			$R^2 = .604$		

* $p < .05$, ** $p < .01$, *** $p < .001$

Note DE = Direct effect, IE = Indirect effect, TE = Total effect

Table 3 Goodness of Fit indices on the final model of inner strength of spousal caregivers among patients with advanced cancer

Goodness of fit indices	Good fit index value	Hypothesized model	Interpretation
χ^2/df	$0 \leq \chi^2/df \leq 2$	1.42	Good fit
CFI	$.90 \leq CFI \leq 1.00$	.98	Good fit
GFI	$.90 \leq GFI \leq 1.00$	.94	Good fit
AGFI	$.90 \leq AGFI \leq 1.00$	.90	Good fit
RMSEA	$0 \leq RMSEA \leq .05$	.05	Good fit

Discussion

The results of this study showed that female caregiver spouses' inner strength had a high average level of inner strength. The major finding of the final model of inner strength of female caregiver spouses of patients with advanced cancer were discussed. Coping ability had a direct positive effect on inner strength. The result of this study found that female caregiver spouses used all coping strategies included

confrontive, palliative, and emotive coping. This finding was congruence with Lundman and colleagues (2010) stated that caregivers had many strategies to cope or solve problem. It was consistent with related studies. Individuals who had capability or ability to cope and manage their difficult lives demonstrated inner strength (Haile et al., 2002; Trimble, 1999). Thus, coping ability could enhance inner strength.

Social support had a significant relationship with inner strength. Women used the support of friends and family members to contribute to their inner strength (Dingley & Roux, 2003). This finding was consistent with related studies reporting that social support enhanced inner strength (Alpers, Helseth, & Bergbom, 2011). Spousal caregivers perceived emotional, tangible, and informational support from friends, family, and health care providers. Participants who had more satisfying social relationships had a higher degree of inner strength (Lundman et al., 2012). Spirituality had a direct positive effect on inner strength. Spirituality was a source of inner strength (Gryglewicz, 2011; Lundman, et al., 2010; Waldrop et al., 2005). This result was congruent with the empirical data. Female caregiver spouses perceived a high level of spirituality and high level of inner strength. The spirituality of female caregiver spouses comprised of having hope and a sense of connectedness, understanding self and the nature of life, and being happy (Promkaewngam et al., 2014). The finding showed that female caregiver spouses perceived spirituality from having hope and a sense of connectedness than others. Mendes, Roux and Ridosh (2010) indicated that expressions of new relationships, activities, understanding, sense of purpose and renewed faith constituted inner strength. Lundman and colleagues (2010) indicated that individuals found meaning while embracing change, resembling spirituality, which has been identified as a key to inner strength. This explained that female caregiver spouses who exhibited greater spirituality had greater inner strength.

Caregiver burden had a direct positive effect on inner strength. The result of The study revealed that female caregiver spouses had an average low

level of caregiver burden. A possible explanation might be that spousal caregivers could improve their inner strength because they experienced low burden. The subscales of inner strength included connectedness, creativity, flexibility, and firmness was found in descriptions of the concept of resilience (Lundman, et al., 2010). Inner strength is related to resilience, then it is understandable that the more burden would see greater resilience. It was congruent with other studies which reported caregivers perceived caregiving responsibilities as low burdensome (Khiewchaum, 2011; Conde-Sala, Garre-Olmo, Turro-Garriga, Vilalta-Franch, & Lopez-Pousa, 2010). They had less difficulty adjusting to caregivers' lifestyles, because they accepted caregiving as a duty (Khiewchaum, 2011; Utriyaaprasit, Bootcheewan, Chayaput, & Thosingha, 2012). Moreover, stressful life event crises could facilitate the development and expression of inner strength (Mendes, Roux, & Ridosh, 2010).

Coping ability had a direct positive effect on caregiver burden. According to Kim, Chang, Rose, and Kim (2012), caregivers using more coping strategies to relieve their stress reported greater burdens. It meant that female caregiver spouses who used more coping abilities had a high level of caregiver burden. Caregiving role involved the wives' responsibility to take care because they were their spouses. Caregivers reported that this duty was perceived regarding their social roles and societal norms in the family and society (Subgranon & Lund, 2000). The result was inconsistent with the related study (Iavarone, Ziello, Pastore, Fasanaro, & Poderico, 2014). A possible reason may be that female caregiver spouses may think that caregiving tasks were their key responsibilities. In addition, female caregiver spouses could solve problems, confront challenges, and overcome

their stressful events. Pearce, Singer, and Prigerson (2006) found that caregivers of terminally ill cancer patients who used more positive coping strategies were associated with more burdens.

Moreover, the result indicated that coping ability had a significant indirect effect on inner strength through caregiver burden. Based on the results, female caregiver spouses perceived a low average of burden, greater use of effective coping strategies and perceived high inner strength. A possible explanation may be that female caregiver spouses endeavored to use greater coping ability to deal with their burden so they could develop inner strength in spite of their burden.

Coping ability had a non-significant direct effect on spirituality. The results were inconsistent with the related studies (Tanyi & Werner, 2007; Moodley, 2008). In this study, coping ability and spirituality were described as positive resources to overcome adversities. A related study revealed that spirituality might be an important coping tool because it involved the use of several different coping styles (Rowe & Allen, 2004). Coping ability and spirituality might overlap in meaning, thus coping ability was not influenced by spirituality.

Social support had a non-significant direct effect on caregiver burden. It could be explained that social support was not the factor that influenced caregivers' burden. The results were consistent with the study of Mashayekhi, Jozdani, Chamak and Mehni (2016) that found no significant correlation between social support and caregiver burden. informational and emotional support could not reduce caregiver burden (Han et al., 2014). In addition, Thompson, Futterman, Gallagher-Thompson, Rose, and Lovett (1993) found that instrumental support and emotional support were ineffective in reducing

caregiver burden.

Social support affected spirituality. The perceived lack of family support for caregiving was associated with decreases in caregivers' spirituality (Park, 2010). The result was consistent with related studies. Social support was significant positively related to spirituality (Pace & Stables, 1997; Lin & Bauer-Wu, 2003; Tantitrukul & Thanasilp, 2009). The lack of family support was associated with lower levels of spirituality (Hebert, Weinstein, Martire, & Schulz, 2006).

Furthermore, social support had a significant indirect positive effect on inner strength through spirituality. The finding indicated that female spousal caregivers who perceived a high level of social support, also perceived a high level of spirituality and reported a high level of inner strength. Social support could enhance caregivers' spirituality (Spinale et al., 2008). Spirituality was a source of inner strength (Waldrop et al., 2005). Therefore, social support and spirituality was the most significant predictor affecting inner strength.

Spirituality had a direct negative effect on caregiver burden. Spirituality could enable caregivers to find positive meaning in their caregiving experience (Hebert et al., 2006). According to the Thai cultural context, it could be explained that all of the reasons of becoming a caregiver were influenced by Buddhist doctrine. This result was congruent with related studies which indicated a statistically significant negative relationship between spirituality and caregiver burden (Spurlock, 2005; Schillings, 2010).

The finding revealed that spirituality had an indirect positive effect on inner strength through caregiver burden. This meant, female caregiver spouses who a high level of spirituality had perceived a low burden and gained higher inner strength.

A possible explanation may be female spousal caregivers in this study reported low burden because they used religious beliefs and practices to reduce their burden resulting in high inner strength.

Implementation

1. This study provided factors influencing inner strength of female caregiver spouses in the Thai context. Therefore, this is a guideline for nurses to provide effective coping ability, social support and spirituality to enhance female spousal caregivers' inner strength.

2. Nurses should facilitate spousal caregivers to access their support resources and coping strategies to promote inner strength.

Future studies

1. The limitation of this study are that the setting was only at inpatients unit and female caregiver spouses, which limits the generalizability of findings. It also used a cross-sectional design which does not allow for changes over time. Future studies need to considered with the use of a longitudinal design to address causal relationships among female caregivers of patients with advanced cancer.

2. The intervention should be designed, conducted and evaluated to enhance the female caregiver spouses' inner strength by facilitating effective coping ability, social support and spirituality.

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