IJNHS

INTERNATIONAL JOURNAL OF NURSING AND HEALTH SCIENCE

CHRISTIAN UNIVERSITY OF THAILAND

VOLUME 4 ISSUE 2 JULY – DECEMBER 2016 ISSN: 2408-1035

International Journal of Nursing and Health Science
Christian University of Thailand

Volume 4 Issue 2 (July-December, 2016) ISSN : 2408-1035

Owner Christian University of Thailand

Office PO. Box 33 Donyaihom, Nakhon Pathom Thailand. 73000

Editor-In-Chief Assistant Professor Dr. Janjira Wongkhomthong

Aims and Scope

International Journal of Nursing and Health Science is an international peer-reviewed journal. The journal aims to provide an academic platform for scholars, graduate students, academics and health care professionals to publish their intellectual contributions in the area of nursing and health sciences. The journal publishes reviewed articles, original research articles, and other related health professional articles bi-annually.

Objectives

1. To publish knowledge, concepts, theories, innovations, guidelines and new technologies in nursing and health science
2. To be a supportive resource for academics, students, and instructors in health institutions and organizations in Thailand and internationally.
3. To promote research and development of knowledge in nursing and health science
4. To be a center of knowledge and experience exchange among health professional scholars, academics and practitioners

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Editorial Advisory Board 2013-2016

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Dear Members / Publishers

The purpose of publishing Journal of Nursing and Health Science (IJNHS) is to disseminate information, knowledge and experiences in education, practice and management administration in nursing, medicine, health sciences and other sciences related to healthcare. The aim of this journal is to provide nurses and the healthcare practitioners with nursing and health science knowledge, concept and research leading to the improvement of health status and quality of care for individuals, families, aggregrates, and communities. It also aims to strengthen the quality of nursing and health service management. This journal will publish original papers, reviews, scholar and general articles, and case studies bi-annually.

We would like to invite you to subscribe and submit papers for consideration of publication in this International Journal of Nursing and Health Science.

Yours sincerely,

Assistant Professor Dr. Janjira Wongkhomthong
President of Christian University of Thailand
and Editor-in-Chief International Journal of Nursing and Health Science (IJNHS)

Content

The Relationship Between Stress, Coping and Physio-Psycho-Social Responses to Stress of BNS Students at a Private University in Thailand

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Abstract

In the nursing program, students are exposed to various stressors which may directly or indirectly impede their learning or performance. Specifically, the nature of clinical education presents challenges that may cause students to experience stress. Despite the growing literature on stress and coping strategies among student nurses internationally, apparently little can be found on the literature highlighting experiences of International Program nursing students enrolled at private Universities in Thailand. Therefore, the purpose of this study is to examine the stress factors, perceived stress level, coping strategies and physio – psycho – social responses to stress of nursing students enrolled at a private university in Thailand.

The participants in this descriptive-correlational research were one hundred and thirty-five level three and four nursing students enrolled in the International Program of a private university in Thailand. The self – report online questionnaires which generated responses through Google forms consisted of five parts: 1) demographic information 2) stress factors questionnaire 3) perceived stress scale (PSS) 4) coping strategies questionnaire, and 5) physio-psycho-social response scale (PPSRS).

Results showed that the nursing students were moderately stressed. Being humorous was the most frequently used coping strategy while seeking professional support the least used. Moreover, students have a mild over-all physio-psycho-social response to stress except for emotional symptoms. Significant differences were found in nursing students' stress, coping strategies, and physiop-psycho-social responses when grouped according to year level, interest in learning nursing, English proficiency level, and preferred mode of learning. Positive, yet weak relationships were found among the variables stress factors, perceived stress level, coping strategies, and physio-psycho-social response to stress.

The results from this study may provide essential and useful information for nurse educators in identifying students' needs, facilitating their learning both in the academe and clinical setting, as well as planning effective interventions and strategies to reduce stress in clinical education

Keywords : Stress, Coping, Physio-Psycho-Social Responses to Stress, Nursing Students, Thailand

Introduction and background of the study

Stress in nursing education is acknowledged as one of the most important issues in the modern world (Kalaivani & Rajkumar, 2017). The nature of clinical education presents challenges that may cause students to experience stress. Moreover, the practical components of the program which is important in preparing students to develop into professional nurse role by its nature have made the program even more stressful than other programs (Labrague, 2013). An important part of nursing education is clinical training in levels 3 and 4, where nursing students begin to develop professional ethics as healthcare providers and the foundation of their nursing competence. However, academic and personal sources of stress and coping behaviors associated with clinical training have been identified in the literature to lead to mental health distress among nursing students (Chernomas & Shapiro, 2013). Stress affects individuals in different ways and is considered a cause of physical, emotional and psychological ill health (Örtqvist & Wincent, 2006).

A widely known framework on stress and coping is by Lazarus and Folkman (1984). The authors defined psychosocial stress as a particular relationship between the person and the environment that is primarily appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being. It is an imbalance between the environment demands and perceived resources that the individual has to meet those demands. If the demands exceed the resources, stress can occur in the individual. Secondary appraisal occurs when an individual determines their capacity to manage the environmental demands (Lazarus & Folkman, 1984). On the other hand, how a person copes can influence the degree, duration, and frequency of a stressful event (Randy & David, 2008). Learning to cope with stress is a useful skill for nursing career and life. By setting priorities, planning ahead, and organizing self, one can minimize the impact of stress. Failure to resolve student stress in the shors term could have serious professional and personal consequences in the long term.

Despite the growing literature on stress and coping strategies among student nurses, little can be found on the literature highlighting experiences of International Program nursing students enrolled at private universities in Thailand. To further understand this phenomenon, this study was conducted to know the stress factors, perceived stress level, coping

strategies and physio-psycho-social responses to stress among nursing students enrolled at a private university in Thailand. The results gained from this study could provide essential and useful information for nurse educators in identifying students' needs, facilitating their learning both in the academe and clinical setting, as well as planning effective interventions and strategies to reduce stress in clinical education.

Research objectives

This study aims to examine the relationship between stress factors, perceived stress level, coping strategies, and physio-psycho-social responses to stress of level 3 & 4 Bachelor of Nursing Science students (International Program) from a private university in Thailand. Specifically, it also aims to answer the following questions:

1. To what extent are the different factors of stress considered stressful by the Bachelor of Nursing Science students (International Program) from a private university in Thailand when taken as a whole and when grouped according to selected socio-demographic variables?
2. What is the level of perceived stress of the Bachelor of Nursing Science students (International Program) from a private university in Thailand when taken as a whole and when grouped according to selected socio-demographic variables?
3. To what extent do the Bachelor of Nursing Science students (International Program) use different coping strategies when taken as a whole and when grouped according to selected socio-demographic variables?
4. What is the extent of physio-psycho-social responses to stress of the Bachelor of Nursing Science students (International Program) when taken as a whole and when grouped according to selected socio-demographic variables?
5. Is there a significant difference in the stress factors of Bachelor of Nursing Science students (International Program) when grouped according to selected socio-demographic variables?
6. Is there a significant difference in the perceived stress level of Bachelor of Nursing Science students (International Program) when grouped according to selected socio-demographic variables?
7. Is there a significant difference in the extent of use of coping strategies among Bachelor of Nursing Science students (International Program) when grouped according to selected socio-demographic variables?
8. Is there a significant difference in the physio-psycho-social responses to stress of Bachelor of Nursing Science students (International Program) when grouped according to selected socio-demographic variables?
9. Is there a significant relationship among stress factors, perceived stress, coping strategies, and physio-psycho-social responses to stress of Bachelor of Nursing Science students (International Program) from a private university in Thailand?

Hypotheses of the study

From the foregoing problems, the hypotheses set forth are as follows:

1. There is no significant difference in the stress

factors of Bachelor of Nursing Science students (International Program) when grouped according to selected socio-demographic variables.

2. There is no significant difference in the perceived stress level of Bachelor of Nursing Science students (International Program) when grouped according to selected socio-demographic variables

3. There is no significant difference in the extent of use of coping strategies among Bachelor of Nursing Science students (International Program) when grouped according to selected socio-demographic variables

4. There is no significant difference in the physio-psycho-social responses to stress of Bachelor of Nursing Science students (International Program) when grouped according to selected socio-demographic variables.

5. There is no significant relationship between stress factors, perceived stress, coping strategies, and physio-psycho-social responses to stress of Bachelor of Nursing Science students (International Program) from a private university in Thailand.

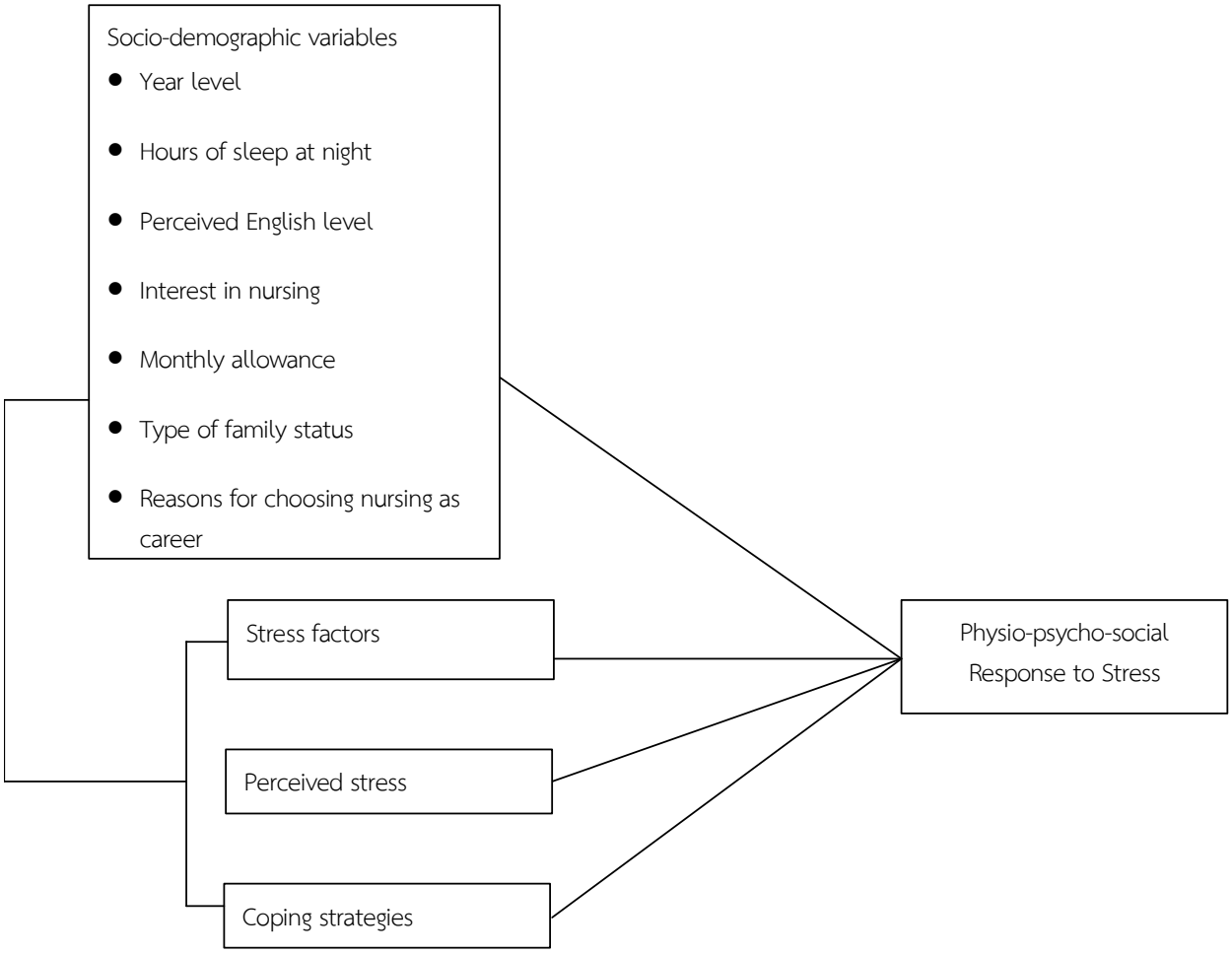

Figure1. Diagram showing the relationship among the study variables

Research methodology

Design

This study used the descriptive – correlational research design. According to Leedy and Ormrod (2001), a descriptive – correlational design is one which surfaces a prevailing condition and at the same time shows the relationship between and among variables. This is appropriate to examine the existence of the relationship between several independent variables without manipulation and outcomes (Graziano & Raulin, 2007)

This study aimed to examine the stress factors, perceived stress level, coping strategies, and physio-psycho-social responses to stress of level 3 and 4 Bachelor of Nursing Science students (International Program) from a private university in Thailand. Thus, the researchers believed that the descriptive-correlational design is appropriate to use.

Setting and respondents of the study

The respondents of the study were the level 3 and 4 Bachelor of Nursing Science students (International Program) enrolled in academic year 2016 from a private University in Thailand. Data was collected from October to November 2016.

Sample

To identify the sample size of this study, the Yamane's formula was used.

This research utilized convenient sampling to recruit respondents for this study. A total of 135 nursing students participated in the survey.

The participants were informed of the objective of the study and anonymity of the students was observed.

Research instrument

The self-report online questionnaire which generated responses through google forms consisted of five parts: 1) Demographic information, 2) Stress factors questionnaire; 3) Perceived stress scale (PSS); 4) Coping strategies questionnaire; and 5) Physio-psycho-social response scale (PPSRS).

Demographic Information

General information collected was year level, gender, age, hours of sleep at night, monthly allowance, current family status, reason for choosing Nursing as a career, interest in learning more about Nursing, grade point average (GPA), perceived proficiency in English language, preferred mode of learning, preferred medium of instruction in the classroom settings, and nationality of instructors they feel most comfortable learning with.

Stress factors questionnaire

To examine nursing students' types of stressors and degree of stress from different factors, a questionnaire developed by Shiferaw, Anand, & Nemera (2015) consisting of 27 statements pertaining to possible sources of stress for students was utilized. These statements are grouped into four categories: academic stressors, environmental stressors, interpersonal stressors, and intrapersonal stressors. It is on a five-point Likert scale ranging from 1 (not at all stressful) to 5 (extremely stressful). The higher the score, the higher the degree of stress experienced from the given factors. To determine the degree of stress, the following verbal interpretations were used: 1.00-1.80 for not at all stressful, 1.81-2.60

for somewhat stressful, 2.61 – 3.40 for moderately stressful, 3.41 to 4.20 for very stressful and 4.21 to 5.0 for extremely stressful. Previous research indicated that this questionnaire has both validity and reliability indexes of > .70 (Shiferaw, Anand, & Nemera, 2015). In this study, the instrument showed a reliability coefficient of .93 (Cronbach's alpha)

Perceived stress scale (PSS)

To examine nursing students' stress levels, the Perceived stress scale developed by Cohen (1988) was used. This consists of 14 positive and negative statements referring to within the last month's experience of the respondents and rated on a five-point Likert scale with scores ranging from 1 (never) to 5 (very often). PSS scores are obtained by reversing responses to the seven positively worded items (4, 5, 6, 7, 9, 10, and 13) and summing across all scale items. Higher scores mean higher perceived stress. To interpret the stress level of students, the following verbal interpretations were used: 1.00–2.33 for low level, 2.34 – 3.66 for moderate level stress, and 3.67 – 5.00 for high level of stress. Previous studies have shown adequate validity and internal consistency for all version and subscales ranging from .73–.91 (Salene & Amtmann, 2013). In this study, the instrument showed a reliability coefficient of .90 (Cronbach's alpha).

Coping strategies questionnaire

To examine the coping strategies used by nursing students to overcome stress, the Adolescent Coping Orientation for Problem Experiences Inventory (ACOPE) developed by Patterson & McCubbin (1987) was used. This consists of 54 items under 12 domains rated by the respondents on a five-point Likert scale ranging from 1 (never) to 5 (most of the time). Higher scores reflect higher frequency. To interpret the scores, the following verbal interpretations were used: 1.00 – 2.33 for rarely used, 2.34–3.66 moderately used, and 3.67 – 5.00 frequently used. The authors of this questionnaire have done extensive validity checks and reported reliability for subscales ranging from.50–.72 (McCubbin, Thompson & McCubbin, 2001). In this study, the reliability coefficient of the instrument is .86 (Cronbach's alpha).

Physio-psycho-social response scale (PPSRS)

To examine the nursing students' responses to stress, the Physio-psycho-social response scale (PPSRS) developed by Sheu et al. (2002) was used. The PPSRS describes nursing students' responses to and emotions caused by stress. It also measures the physio-psycho-social health status of students especially those exposed in the clinical practice. The PPSRS consists of 21 items divided into three subscales: Physical symptoms, emotional symptoms, and social-behavioural symptoms rated on a five-point Likert-type scale ranging from 1 (never) to 5 (very often). Both subscale scores and total scores are computed. Higher scores mean more severe responses to stress. To interpret the scores, the following verbal interpretations were used: 1.00 – 2.33 for mild response, 2.34 – 2.66 for moderate response, and 3.67–5.00 for severe response to stress. Reliability and validity testing of the instrument was done by Sheu et al. (2002). In this study, the reliability coefficient of the instrument is .96 (Cronbach's alpha).

Data analysis

The data were analyzed using SPSS version 18. Descriptive statistics include: frequency, percentage, and mean. Independent samples t-test was used to test differences between two means, ANOVA to compare differences of more than two means, and Pearson's correlation coefficient was used to test the relationships among stress factors, perceived stress level, coping strategies, and physio-psycho-social responses to stress. A p-value of equal to or less than .05 was considered significant.

Findings

Demographic and background information of participants

Descriptive statistics regarding frequencies and percentage were used to describe year level, gender, age, hours of sleep at night, monthly allowance, family status, reason for choosing nursing, interest in learning nursing, GPA, English language proficiency, most preferred mode of learning, most preferred medium of instruction in class, and most preferred instructor for learning.

In the present study, the total respondents in the study were 135 Bachelor of nursing students (International Program) coming from the level 4 (67.4%) and level 3 (32.6%). Majority of the respondents were female (97.0%) who were between the ages 21 to 23 (72.6%). The respondents mostly sleep 5 to 6 hours (77.0%), receive a monthly allowance of 5,000 to 10,000 Baht (58.5%), and mostly living with their parents and/or siblings only (69.6%).

The results showed that the top reasons why the students chose nursing were parental pressure (48.1%), followed by personal choice (28.1%), and then job security (20.7%). The majority of them are still interested in learning more about nursing (92.6%), had a GPA between 2.0 to 3.0 (95.6%) in the last semester. Most students perceived themselves to be in the level 2 (can talk about themselves, their families, and current events) and level 3 (can easily discuss a variety of topics; can completely understand what others are saying) (76.3%) of English proficiency. Most students prefer to come to class and attend lectures (48.1%), a combination of English and Thai languages (80.0%), and learn from both foreign and Thai instructors (60.7%).

Table 1

Stress factors among Bachelor of Nursing Science students (International Program)

	Stressor	Mean	SD	Verbal interpretation
I	Academic stressor	2.42	.67	Somewhat stressful
II	Environmental stressor	2.11	.71	Somewhat stressful
III	Interpersonal stressor	2.16	.66	Somewhat stressful
IV	Intrapersonal stressor	2.18	.70	Somewhat stressful
	Overall	2.24	.58	Somewhat stressful

Table 1 presents the extent to which the different factors are considered stressful by the level 3 and 4 Bachelor of Nursing science students (International Program). Results showed that academic stressors have the highest mean ($\bar{x}$ = 2.42, SD =.67) followed by intrapersonal stressors ($\bar{x}$ = 2.18, SD =.70), interpersonal stressors ($\bar{x}$ = 2.16, SD =.66), and environmental stressors ($\bar{x}$ = 2.11, SD =.71).

Table 2

Perceived stress of Bachelor of Nursing Science students (International Program)

	Statement	Mean	SD	Verbal interpretation
1	Being upset that events happened unexpectedly	2.33	.85	low
2	Feeling of unable to control the important things in life	2.37	.95	moderate
3	Feeling nervous and "stressed"	2.71	.95	moderate
4	Able to deal successfully with day to day problems and annoyances	3.76	.69	high
5	Feeling effectively coping with important changes that were occurring in life	3.80	.69	high
6	Feeling confident about ability to handle personal problems	3.84	.66	high
7	Feeling that things were going according to own way	3.83	.73	high
8	Feeling unable to cope with all the things that should be done	2.39	.93	moderate
9	Able to control irritation in life	3.84	.74	high
10	Feeling on top of things	3.82	.72	high
11	Being angered because things were happening outside of control	2.36	.89	moderate
12	Thinking about the things that needs to be accomplished	2.58	1.0	moderate
13	Able to control the way of spending time	3.81	.70	high
14	Feeling that difficulties were piling up so high that they could not be solved	2.5	.92	moderate
	Overall	3.14	.26	moderate

Table 2 shows the perceived stress level of both level 3 and 4 Bachelor of Nursing Science students (International Program). The students have an overall verbal interpretation of moderate stress level ($\bar{x}$ = 3.14, SD =.26). Among the list of stress symptoms, the students have indicated high stress levels on the following statements: able to deal successfully with day to day problems and annoyances, feeling effectively coping with important changes that were occurring in life, feeling confident about ability to handle personal problems, feeling that things were going according to own way, able to control irritation in life, feeling on top of things, and able to control the way of spending time.

Table 3

Coping strategies used by Bachelor of Nursing Science students (International Program)

	Coping strategy	Mean	SD	Verbal interpretation
1	Ventilating feelings	2.40	.64	Moderately used
2	Seeking diversions	3.05	.52	Moderately used
3	Relaxing	2.95	.57	Moderately used
4	Self-reliance	3.01	.71	Moderately used
5	Developing social support	3.08	.68	Moderately used
6	Solving family problems	3.19	.82	Moderately used
7	Avoiding problems	2.10	.64	Rarely used
8	Investing in close friends	2.71	.94	Moderately used
9	Seeking professional support	2.30	.84	Rarely used
10	Engaging in demanding activities	2.93	.76	Moderately used
11	Being humorous	3.33	.94	Moderately used

Table 3 shows the frequency of coping strategies used by the Bachelor of Nursing Science students (International Program). The coping strategy with the highest mean frequency as used by the nursing students is 'Being humorous' ($\overline{X}$ = 3.33, SD =.94) while the coping strategy with the least mean frequency is 'avoiding problems' ($\overline{X}$ = 2.10, SD =.64).

Table 4

Physio-psycho-social response to stress of Bachelor of Nursing Science students (International Program)

		Mean	SD	Verbal interpretation
1	Emotional symptoms	2.42	.82	Moderate
2	Social behavioral	2.16	.77	Mild
3	Physical symptoms	2.05	.78	Mild
	Overall response	2.21	.68	Mild

Table 4 shows the physio-psycho-social response to stress of Bachelor of Nursing Science students (International Program). Results show that, overall, the students have a 'mild' physio-psycho-social response to stress ($\overline{X}$ = 2.21, SD =.68). They have mild socio-behavioral and physical symptoms in response to stress but showed a higher mean response for emotional symptoms ($\overline{X}$ = 2.42, SD =.82).

Table 5

Significant findings on stress factors and coping strategies using t-test

	Stress factors				Use of Coping strategies			
Year level	Mean	SD	t	df	Mean	SD	t	df
Level 3	2.17	.58	-2.055*	133	2.86	.43	2.040*	133
Level 4	2.38	.55			2.70	.35		
Interest in learning further about nursing								
Yes	2.21	.57	-2.144*	133	2.79	.42	-1.104^{ns}	133
No	2.61	.58			2.94	.34		

* *p <.05,* ^{ns} *not significant*

Table 5 shows the significant difference in the stress factors of Bachelor of Nursing Science students when grouped according to selected socio-demographic variables, results were statistically significant only according to year level t (133)= − 2.055, p < .05 between the third year ($\bar{x}$ = 2.17, SD =.58) and fourth year nursing students ($\bar{x}$ = 2.38, SD =.55) and between those interested ($\bar{x}$ = 2.21, SD =.57) and not interested ($\bar{x}$ = 2.61, SD =.58) to learn more about nursing t (133)= − 2.144, p < .05. The use of coping strategies also significantly differed between the third year and fourth year nursing students t (133) = 2.040, p < .05. The third year nursing students ($\bar{x}$ = 2.86, SD =.43) have higher mean frequency in the use of coping strategies compared to the fourth year students ($\bar{x}$ = 2.70, SD =.35).

Table 6 shows results from ANOVA that perceived stress level [F (4, 130) = 5.60, p <.05)] and physio-psycho-social response [F (4, 130) = 3.06, p <.05)] significantly differs according to nursing students' perceived English proficiency level. Post hoc test revealed a significant difference in the perceived stress means of level 1 ($\bar{x}$ = 2.13, SD =. 64) and level 3 ($\bar{x}$ = 2.74, SD =.74) English proficiency levels. Furthermore, physio-psycho-social means differed between level 5 and level 1 ($\bar{x}$ = 1.00, SD =.00; $\bar{x}$ = 2.38, SD = .78) English proficiency levels and level 5 and level 3 ($\bar{x}$ = 1.00, SD =.00; $\bar{x}$ = 2.32, SD =.62). Physio-pyscho-social response also showed significant differences in means according to the most preferred mode of learning [F (4, 130) = 4.158, p <.05)]. Post hoc test revealed significant differences between the means of real-world experience ($\bar{x}$ = 2.15, SD =.67) and the use of digital technologies ($\bar{x}$ = 2.87, SD =.53).

Table 6

Significant findings on perceived stress level and physio-psycho-social responses using ANOVA

	Perceived stress level			Physio-psycho-social response		
	Mean	SD		Mean	SD	
Perceived English language proficiency			$F = 5.60^{**}$			$F= 3.06^{*}$
Level 1: can order meals, ask for time and ask for directions	2.13	.64		2.38	.78	
Level 2: can talk about myself, my family, and current events	2.49	.67				
Level 3: can easily discuss a variety of topics; can completely understand what others are saying	2.74	.74		2.32	.62	
Level 4: can easily participate in all manners of conversation with few grammatical mistakes	2.26	.69				
Level 5: can use English language the way an educated native speaker of the language would	1.04	.05		1.00	.00	
Most preferred mode of learning						$F= 4.158^{*}$
Come to class and attend lectures	2.51	.72		2.10	.68	
Interacting with friends	2.42	.77		2.10	.58	
Digital technologies	2.77	.79		2.87	.53	
Self-study	2.42	.65		2.57	.66	
Real-world experience	2.50	.81		2.15	.67	

$^{*}p < .05$, $^{**}p < .01$

Table 7 shows the significant relationship among extent of stress from different factors, perceived stress level, extent of use of coping strategies, and physio-psycho-social response to stress, results revealed significant weak positive relationships between stress factors and perceived stress levels ($r = .386$, $p < .01$), between perceived stress level and coping strategies ($r = .382$, $p < .01$), and between perceived stress level and physio-psycho-social response to stress ($r = .198$, $p < .01$).

Table 7

Correlation among the study variables

Variable	1	2	3	4
1. Stress factors	-			
2. Perceived stress level	.386**	-		
3. Coping strategies	.152	.382**	-	
4. Physio-psycho-social response	.157	.198*	.162	-

** *p*<.01, * *p* <.05

Discussion

This study assesses the Bachelor of Nursing Science (International Program) students' stress factors, perceived stress level, coping strategies, and biopsychosocial response to stress guided by the Lazarus Stress and Coping Limitations of the study were related to the following: using cross-sectional design does not allow the establishment of cause and effect relationships, recruiting only the level 3 and level 4 students as respondents, using convenience sampling, using English language questionnaires, and using google forms to delivered and retrieve the questionnaires.

Descriptive analyses showed that the respondents as a whole have a moderate level of stress and consider academic sources of stress as more stressful (moderate level) than other sources (environmental, interpersonal, intrapersonal). This result is similar with other studies included in the literature review conducted on the stress and coping of nursing students in Asian countries which showed a moderate to severe levels of stress (Kumar & Nancy, 2011; Labrague, 2013; Shaban, Khater, & Akhu-Zaheya, 2012; Singh, Sharma, & Sharma, 2011; Younas, 2016). It is consistent, however, that the most commonly stated stressor was the academic aspect which includes workload and clinical training (Khater, Akhu-Zaheya, & Shaban, 2014; Labrague, 2013; Seyedfatemi, Tafreshi, & Hagani, 2007; Younas, 2016). Most students use 'being humorous' as a coping strategy to stress and used less seeking professional support. As to coping responses, this same literature review conducted by Younas (2016) stated that nursing students use more positive coping strategies which includes, as revealed in this study, the use of humour. It is however interesting that in contrast to Younas' findings that nursing students mostly seek professional support, students from this study have utilized it the least. Moreover students have mild biopsychosocial responses to stress which were mainly manifested through emotional symptoms.

From the list of demographic variables, extent of stress from different factors was higher among fourth year students and among those who are not interested to learn more about nursing. According to the preferred mode of learning, the physio-psycho-social response to stress of students differed between the use of technologies and real-world experience.

The former had a higher mean level of physio-psycho-social response to stress. It also differed between those with an English proficiency level of 5 and those with an English proficiency level of 3 which revealed higher mean stress response. Interestingly, those with a perceived English proficiency level of 3 had a higher perceived stress than those in the perceived English level of 1.

As to the relationship of variables, perceived stress level is positively related with stress factors, use of coping strategies, and physio-psycho-social response to stress although the relationships were found to be weak. Consistent with the study conducted by Labrague among nursing students in government schools in the Philippines, emotional symptoms were the most common response to stress and those students who reported higher levels of stress were more likely to experience more physio-psycho-social response to stress (Labrague, 2013).

Results affirm Lazarus and Folkman's (Lazarus & Folkman, 1984) framework that stress is the result of the interaction between the individual and the environment. Stress level is then appraised by the individual and coping strategies utilized. Furthermore, findings support that stress affect individual's physical, psychological, and social health if adaptational outcomes are not achieved.

Conclusion and recommendations

Findings from this study showed that level 3 and 4 nursing students from the International Program of a private university in Thailand were exposed to different stressors during their education and training. Results showed that, as a whole, they are at the moderate stress level affecting their overall health status especially their emotional health. This provides helpful and useful information for educators and administrators in identifying students' needs, facilitating their learning and planning effective interventions and strategies to reduce or prevent stress in nursing education and training as well as promote helpful and positive strategies to cope with stress. It is recommended that further study be conducted among all levels of BSN education, both In the Thai and International Program. A qualitative study to explore the in-depth stress experiences of students could add to the richness of these data.

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Factors Related to Premarital Sexual Behavior among Thai Adolescents

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Abstract

The purpose of this correlational descriptive study was to identify the correlated factor of premarital sexual behavior among Thai adolescents. The eligible participants consisted of 430 students, who were studying in grades 9 to 12 at a secondary public school in Nakhon Pathom Province, Thailand. The questionnaires consisted of four parts. The first part of the questionnaire included demographic characteristics. The second part was the measurement of the participants' self-esteem. The third part was the assessment of parental monitoring. Lastly, the Daily Spiritual Experience Scale (DSES) was administered. The reliability was presented at 0.83, 0.76, 0.93 respectively. Descriptive statistics were used to describe characteristic of participants. A chi-square test was used to explore the association between gender, family structure, parent education and early sexual initiation. Pearson's product moment correlation was used to examine the relationship between, self-esteem, parental monitoring, academic performance and spirituality.

The results revealed that Thai male students were more likely to have sex than Thai female students. Approximate thirty percent of male students engaged in sexual initiation, whereas only 20% female students did. Adolescent male started having sex earlier than female. The average age of students involved in sexual behavior was under 15 years old. The factors related to early sexual behavior were low self-esteem, family structure, parents' education, parental monitoring, and spirituality. Premarital sexual behavior was significantly negatively correlated with positive self-esteem, family structure, parents' education, and parental monitoring, academic performance, and daily spiritual experiences and interrelated with each other ($p < .01$). It is recommended that the factors related to premarital early sexual behaviour especially parental monitoring and spiritual experience be promote in the Thai family context to delay premarital sexual behavior.

Keywords : Premarital Sexual Behavior, Thai Adolescents

Introduction

According to many researches from various countries, early sexual initiation issues have grown in seriousness up due to negative consequences such as teenage pregnancy and STDs/HIV. (Buhi & Goodson, 2007; Sneed, 2009). For example, the United States high school student survey presented the prevalence of sexual intercourse was 41%, [22 young people (aged 13-24) were diagnosed with new HIV infection.] Nearly 230,000 babies were born from teen girls aged 15-19 years (CDC, 2015).

Thailand also experiences these problems The survey of reproductive health among Thai youth conducted by the Department of Health. found that the average age of the first sexual intercourse in Thailand was 15-16 years old. Eleventh graders had high percentages of having sexual activities (Bureau of Epidemiology, Thailand, 2015). As previously reported in Thai studies, adolescents involved in early sexual intercourse were more likely to have unprotected sex. (Sirirassamee, & Sirirassamee, 2015). For this reason, Thailand has a prevalence of teenage pregnancy rates 42.5 % per 1,000 in women aged 15-19, (Bureau of Epidemiology, 2016).

Other negative consequences of early sexual intercourse is that the initiation of sexual intercourse at an early age may cause teens to have a higher number of sexual partners and a higher risk of STDs (CDC, 2015). In 2016, the Department of Health in Thailand stated that STD rates among adolescents aged 15-24 years increased 143.44% per 100,000 in women aged 15-19 (Bureau of Epidemiology, 2016).

Several factors have been reported in the literature to either promote or hinder adolescents from engaging in premarital sexual behaviours. Factors associated with adolescents' early sexual behavior are lack of parental monitoring, living with one parent, low self-esteem, and poor academic performance (Lenciauskiene & Zaborskis, 2008; Haglund & Fehring, 2010). Though such factors have been reported in studies in Western countries, limited studies have been conducted in Eastern countries, especially in Thailand. Therefore, this study will fill an important knowledge gap and may set a foundation for future interventions.

The Objective of the Study

The correlational descriptive study was to identify the factors related to premarital sexual behavior among Thai adolescents.

Theoretical Framework

The concepts of the Neuman Systems Model used in this study are the five variables correlated with the client system. The Neuman's model states the client system as an open and dynamic system. Every part of the system is interrelated and interdependent (Neuman, Neuman & Fawcett, 2011). Based on the aforementioned literature review, and for the purpose of this study, gender is used as the physiological variable; with self-esteem as the psychological variable; while the sociocultural

variables consisted of the family structure such as live with mothers, mothers and fathers, or relatives, parental education, and parental monitoring. The developmental variable is referred to as academic performance and the spiritual variable as the daily spiritual experiences.

Participants

The subjects in this study included 430 Thai female or male students between the ages of 14 to 17 years, studying from grades 9 through12. Convenience sampling was used to reach the appropriate number of subjects. All parental consent and student consent signatures were turned in to the investigator before the commencement of collecting data. Anonymity of student participants were maintained throughout the study.

Instruments

In the current study, a self-administered, closed-ended questionnaire was used as the research instruments. The questionnaire was comprised of four parts. Part I: demographic characteristics, such as age, gender, student' education level, grade report of academic performance, parents' educational level, whether students live with one parent, two parents, or relatives/caregivers, history of sexual experiences, and age of first sexual initiation. Part II: the Rosenberg Self-Esteem Scale (RSE) by Rosenberg & Morris (1989) has ten items with a 4-point rating scale from strongly agree (SA =4) to strongly disagree (SD=1). This measurement consists of two types of questions: five positive questions comprised of items 1, 3, 4, 7, and 10 and five negative questions comprised of items 2, 5, 6, 8, 9. The reliability was 0.76. Part III: , the Parental Monitoring Scale (PMS) by Li, Feigelman, & Stanton (2000) has 6 items with a 5-point Likert scale from 1 to 5: 1=never, 2=rarely, 3=sometimes, 4=most of the time, and 5=always. The Cronbach's alpha reported at 0.83 which was acceptable reliability. Part IV, the Daily Spiritual Experience Scale (DSES) by Underwood (2011) consisted of 16 items. The first 15 items are scored on a Likert rating scale from 1 to 6: 6= never, 5= once in a while, 4= some days, 3= most days, 2= everyday, and 1 = many times a day. The 16th item has four response categories: 4 = not at all, 3 = somewhat close, 2 = very close and 1 = as close as possible. The Cronbach's alpha was presented at 0.93. These questionnaires were translated into Thai language and then translated back into English.

Human subjects' protection

After received the Christian University of Thailand Institution Review Board approval No 067 and school permission from the director of the secondary school in Nakhon Pathom, Thailand, the investigator employed data collection procedure included the consent and assent forms. All parental consent and student assent signatures were returned to the investigator before collecting data.

Data collection

The investigator employed data collection procedure including the consent and assent forms. All parental consent and student assent signatures were returned to the investigator before start collecting data. A questionnaire as an instrument for this quantitative research contained a self-administered, closed-ended

questionnaire in four parts: demographic data, RSE, PMS, and DSES

Results

As shown in Table 1, in the present study the total convenience participants included 430 students: all were Buddhists, 53% were boys (n=228), 47% were girls (n=202) with school level from 9th to 12th grades. The prevalence of early sexual behavior among boys was 28.5%, while 20.3% were reported by girls.

According to family structure, findings showed that most of the participants lived with parents (72.6%), while 19.3% lived with a single parent and 8.1% lived with others. Of those who lived with both parents, 18.6% reported they had sexual experience: of those who lived with either father or mother, 36.1% reported they had sexual experience: of those who lived with others, 51.4% reported they had sexual experience.

Nearly 50 % of participants' parents had finished high school, followed by 27.0% from elementary school, and 25.6.% from college or university. Among students who reported sexual initiation, 31.9% of parents had completed elementary school, 27.5% of parents had completed high school, and 11.8% had completed college, 60% of these participants reported sexual experience at age 14–15 years old, followed by 29.2% at 16 years old and 7.7% for the 11–13 age group (see Table 2). The youngest adolescent male who started having sex was 11 years old, whereas for girls it was 12 years old (Table 3). An average age was 14.84 for males (S.D. = 1.12) and 15.17 for females (S.D. = 1.09). This means that adolescent males had sexual experiences at an earlier age when compared to adolescent females.

The results indicated that the mean scores of self-esteem for those who never had early sexual initiation was 25.37 (S.D. = 4.74), whereas the mean scores of students who had sexual initiation was 23.31 (S.D. = 3.31). Findings revealed that the mean scores on the parental monitoring for students who were involved in sexual engagement was higher 24.20 (S.D. = 5.45), while the mean score for students who had not initiated in early sexual behavior was 16.38 (S.D. = 5.37).

Almost half of the sample earned a GPA between 2.01 and 3.00, 46.3% had a GPA between 3.01 and 4.00, and 6% obtained a GPA between 1.01 and 2.00. Students with a GPA between 3.01 and 4.00 had early sexual initiation at 14.1%, 28.8% of students who had a GPA between 2.01 and 3.00 reported early sexual initiation, while 73.1% of students who had a GPA between 1.01 and 2.00 reported early sexual initiation. Students who never had sexual initiation had higher mean scores on their grade reports than those who had early sexual initiation of 3.03 and 2.62 (S.D. = 0.52, S.D. = 0.52).

The mean scores on the DSES for students who were involved in sexual engagement was 56.26 (S.D. = 10.76), while students who had not initiated in premarital sexual behavior had lower scores on the DSES (higher spiritual experiences) (S.D. = 16.71).

Also, the results revealed that the mean score on the parental monitoring for students who were involved in sexual engagement was 24.20 (S.D. = 5.45), while the mean score for students who had not initiated in early sexual behavior was16.38 (S.D. = 5.37).

Table 1 Descriptive analysis the study variables among students who had premarital sexual behavior and no premarital sexual behavior (n= 430)

Variables	No (n = 324)	Yes (n = 106)
Gender		
Males	163 (71.5)	65 (28.5)
Female	161 (79.7)	41 (20.3)
Family Structure		
Living with parents	254 (81.4)	58 (18.6)
Living with 1 parent	53 (63.9)	30 (36.1)
Living with others	17 (48.6)	18 (51.4)
Parents' Education (years)		
Elementary School (1-6)	79 (68.1)	37 (31.9)
High School (7-12)	148 (72.5)	56 (27.5)
College/University (13-18)	97 (88.2)	13 (11.8)
Mean ± S.D.	11.86 ± 3.85	10.45 ± 3.58
Self-Esteem		
Self-Esteem scores		
Mean ± S.D	25.37 ± 4.74	23.31 ± 3.31
Parental Monitoring		
Parental monitoring scores		
Mean ± S.D	24.20 ± 5.45	16.38 ± 5.37
Academic performance		
Grade Point Average		
3.01-4.00	171 (85.9)	28 (14.1
2.01-3.00	46 (71.2)	59 (28.8)
1.01-2.00	7 (26.9)	19 (73.1)
Mean ± S.D.	3.03 ± .52	2.62 ± .52
Spirituality		
Daily Spiritual Experiences		
Mean ± S.D	48.60 ± 16.16	56.26± 10.76

Table 2 The correlations of measured variables and early sexual initiation

Variables	1	2	3	4	5	6	7
1. Gender							
2. Family structure	-.10*	1					
3. Education	.03	-.01*	1				
4. Grades	.36**	.04	-.10*	1			
5. Monitor	.26**	.18**	.21*	-.43**	1		
6. Self	.12**	.10**	.20**	.26**	.24**	1	
7. Spirituality	.13**	.04	.13**	.32**	.23**	-.10	1
Early sex	-.10*	-.23**	.16**	-.32**	-.57**	-.19**	-.21**

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

As shown in Table 2, the result indicated that there was significantly negative correlation between family structure and premarital sexual initiation ($r = -.23$, $p < .01$). This can be described that students who lived with one parent were more likely to have premarital sexual initiation than students who lived with two parents. Students whose parents had less education were more likely to have sexual experience. Grades also had a significant negative correlation among students who never had sexual experience and those who were involved in sexual behavior ($r = -0.32$, $p < .01$). than those whose parents finished higher education ($r = -0.16$, $p < .01$). There was a negative correlation between spiritual experiences and early sexual initiation ($r = -0.21$, $p < .01$). There was significant moderate negative correlation between parental monitoring and early sexual initiation ($r = -0.57$, $p < .01$). There was a significant negative correlation between self-esteem and early sexual initiation ($r = 0-.19$, $p < .01$).

The correlation of each variable was significant in which negative relationship ranged from -0.10 to -0.57. Among these variables, parental monitoring was moderate by correlation with early sexual involvement, whereas family structure, parents' education background, grades, spiritual experiences, and self-esteem had a low correlation. Gender, parents' education and self-esteem had a weak correlation when compared to other variables. In addition, most of variables correlated with each other except for family structure, self-esteem were not significantly intercorrelated with spirituality. Interestingly, parental monitoring was the only variable which had significant intercorrelation with the entire variable set.

Discussion

The study showed that 60% of those who reported premrital sexual initiation were 14-15 years old, which was higher than a survey of reproductive health among Thai youth conducted by the Department of Health. They reported that the average age of the first sexual intercourse among Thai adolescents was 12-15 years old.

The percentage of sexual activity for eighth grade students was 4.4% for boys and 3.0% for girls. For eleventh graders, the report showed that 25.9% of boys and 15.5 % of girls were sexual active (Bureau of Epidemiology, Thailand, 2015). In Thailand, Gender double standards still exit in Thai culture. Young Thai females are expected to remain virgins until marriage, while there are lower social expectations for males about their attitude toward premarital sexual experiences (Sridawruang, C., Crozier, K., & Pfeil, M. ,2010; Supametaporn, Stern, Rodcumdee, & Chaiyawat, 2010). Self-esteem indicates that there was a weak correlation between self-esteem and early sexual initiation. This result was congruent with the findings of Longmore et al's study (2004), which demonstrated that non-virgin adolescents had lower self-esteem when compared to virgins for both genders. Family structure plays an important role and many studies report that adolescents who live with both parents are at a lower risk for early sexual experiences when they two with both parents (Peres et al., 2008; Lenciauskiene & Zaborskis, 2008; Haglund & Fehring, 2010). The findings from this study were supposed by a previous study, which stated that family environment influenced adolescents' daily lives and development. Adolescents who lived with disrupted families or step-parents had a greater risk for early involvement in sexual experiences than those who did not live with disrupted parents or step-parents. Fortste and Hass (2002) concurred the study revealed that adolescents whose parents have higher level of education were less likely to have early engagement in sexual experiences. More significantly, parental monitoring factor was correlated with less premarital sexual experience, the students who had low parental monitoring were more likely to be involved in sexual experiences than those who had high parental monitoring (Nagamatsu, Saito, & Sato, 2008; Dessie, Berhane, & Worku, 2014) Lohman & Billings (2008) supported this variable in their studies to indicate how much this influence teenagers. Academic performance is considered as another protective factor which related to early sexual initiation. This current study's finding had consistent results with Forehand et al's study (2005) indicated that low school performance was associated with reduced odds of intending to engage in sex. Adolescents who had high education goals and academic achievement were less likely to delay having sex because they knew this behavior would risk pregnancy and STDs which might affect their academic plan in the future. Spiritual experience was one of the significant factor to prevent early sexual initiation among Thai adolescents. The study's result was congruent with the results from Chamratrithirong et al's study (2010) which examined the impact of family spiritual beliefs and practices on substance use and risky sexual behaviors among young adolescents 13-14 years old in Bangkok. This finding was consistent with Kang and Romo's study (2011). Adolescents who had high levels of church engagement also had higher levels of personal spirituality. High personal spirituality was associated with decreased adolescent risky behavior.

Conclusion & Recommendation

The relationship between all variables, parental monitoring showed a significant moderate negative correlation with early sexual behavior when compared with others. The significant factor related to premarital sexual behaviour was parental monitoring and then followed by family structure, academic performance, and spirituality respectively. The importance of family context, including the role of parental monitoring impact on early sexual initiation, must be considered.

Even in this study, the result did not ascertain that spirituality was highly correlated in preventing premarital sexual initiation among Thai adolescents. However, there was so meaningful for understanding the function of parental monitoring and spirituality in preventing premarital sexual experience at an early age. The Neuman System Model provides knowledge to understanding adolescents as a whole unit. With consistencies of previous studies in earlier part, spirituality, family structure, parents' education, parental monitoring, self-esteem, and academic performance can be placed on protective factors to prevent adolescents from initiating in sexual experiences at a younger age. Therefore, it may be necessary to do future research and include adolescents from a wider age range across the adolescence period, from grades 7 to 12 (12-17 years).

Finally, the foreseeable benefits of this study will provide further support to possible interventions that may help prevent early sexual initiation in Thai adolescents; the benefit may extend not only to Thai adolescents but to adolescent who are living in comparable cultures in the Asian world and who may be experiencing similar high rates of early sexual initiation.

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The Efficacy of The Psychospiritual Intervention on Job Stressors and Burnout among Thai Protestant Pastors

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Abstract

This experimental study aimed to investigate the efficacy of psycho-spiritual intervention on job stressors and burnout among Protestant Thai pastors. Participants were 48 pastors with age between 23 and 65 years, a mean age of 36 years. Instruments used were the Challenge and Hindrance Stressors Scale (CHSS), and the Francis Burnout Inventory (FBI). The findings indicated that the decrease in both the job stress scores and the level of burnout scores made between the pretest and posttest intervention conditions were similar across the two groups (experimental, control); that is, the difference was not statistically significant.

Keywords : Psycho-Spiritual Intervention, Spiritual Well-Being, Calling, Religious Coping, Burnout, Job Stressors, Thai Protestant Pastors

Introduction

The problem of burnout among pastors is significant and had been mentioned as a major reason for pastors having thoughts of leaving the ministry, dropping out, or exiting from the ministry (Francis, Hills, & Kaldor, 2009). Clergy are leaving the ministry in greater numbers than ever before. In the United States, it was reported that approximately 1,800 pastors leave the ministry each month (Fisher, 2010). More specifically, it was demonstrated that ex-pastors were facing burnout (Beebe 2007; Doolittle, 2007). Moreover, in the Asian setting, pastors in Hong Kong revealed their intention to give up ministerial work due to severe job stress (Hang-yue, Foley, & Loi, 2005). It is generally acknowledged that ministry as a vocation is inherently stressful, given the intensive people-helping component of the work. There is little doubt that clergy stress and burnout can be detrimental to the mental health and well-being of the minister (Maloney, 1988). Many pastors attempt to hide these feelings and try to maintain a positive public persona because they believe in God's calling for them to engage in their ministry and, thus, should be able to deal with stressors (Charlton, Rolph, Francis, Rolph, & Robbins, 2008). However, the pastors' families

frequently see inside the persona how fatigued, withdrawn, and discouraged the pastors have become (Miner, 2007).

Burnout among pastors negatively impacts both physical and emotional well-being, often resulting in depression (Buys & Rothman, 2010; Doolittle, 2010), loss of vision for ministry due to unsolved conflicts (Chandler, 2010), as well as threatens the ability to provide effective and caring leadership to those seeking spiritual guidance and support in time of crisis (Maslach et al., 2001). It is a serious problem for congregations and local communities because the pastor is the first person many turn to in times of crisis. Pastors are even considered to be effective mental health providers by many (Weaver, Koenig, & Larson, 1997). Burnout, thus, impacts the well-being and relationships of pastors (Buys & Rothman, 2010).

The main reasons for pastor burnout, mostly, include spiritual life dissatisfaction, incompetence, or suffering caused by emotional exhaustion (Doolittle, 2010). By the same token, Mann (2007) opined that for some pastors, spiritual burnout symptoms are signs of losing meaning and purpose, feeling loss of faith and calling by God, lack of desire to practice spiritual activities, and detachment from others.

Pargament (1997), a prolific writer on the psychology of religion, asserted that the aspect of spirituality can encourage individuals to use religious coping effectively. Pastors are expected to have a closer relationship with God in the spiritual domain and a stronger spiritual foundation compared to non-pastors. Thus, when they face personal crisis, they could either apply religious coping strategies in a positive way to focus on God as a supportive source, or in a negative way that highlights God's trials in order for them to enhance their individual strength. Past research proved that pastors are more likely to have an advantage over other individuals since they are able to see a crisis as a potential benefit being a trial from God, or because they are more secure in their long-term relationship with God (Pargament, Koenig, & Perez, 1998).

Moreover, with the integration of religion and mental health in the psychospiritual intervention applied in this study, it could be theorized that the spiritual resources which are of intrinsic religious orientation and mature in nature could serve as the main motivation and drive for pastors to cope with stressors and burnout, enabling them to achieve high levels of spiritual well-being, sense of calling, and positive religious coping.

Methodology

Research design.

This study consisted of a pretest-posttest randomly assigned two-group comparison study of measured outcomes following the pastors' participation in a one-day psychospiritual intervention workshop. The use of pretest and posttest measures was required as the foundational research question revolved around within-subject changes in a combination of spiritual well-being, calling, and religious coping, burnout, and challenge and hindrance job stressors outcomes. The inclusion of a control group was required to examine whether

any observed changes can be attributed to participation in the program and not likely due to outside factors. In the current research design, the use of random assignment of subjects was included as, according to Trochim (2006), the technique to mitigate the selection bias threat to the internal validity of a multiple group study.

Participants.

In order to make this experimental research worthwhile and fulfill the research intention of conducting the study with targeted church leaders, 48 full-time Thai pastors, both male and female (male: n=36, 75%; female: n=12, 25%), aged between 23 and 65 years old (with a mean age of 36 years), with at least two years of pastoral work experience, and a member of any of the three major Protestant churches in Thailand, were recruited to participate.

These 48 participants were randomly assigned to the control (no intervention) group (male: n=21, 84%; female: n=4, 16%) and the experimental (intervention) group (male: n=15, 65.3%; female: n=8, 34.8%).

Materials.

The intervention package was provided over the course of five sessions in a one-day workshop, with each session having a theme that incorporated a specific spiritual domain. The intervention package was detailed as Table 1

Table 1

Psychospiritual Intervention main concept, content, and other details.

Session	Duration	Main theme	Activity
Session 1	30 min.	Introduction and music relaxation	• Defining the intervention • Relaxation exercises
Session 2	90 min.	Spiritual struggles	• Psychoeducation on stress and burnout • Sharing each individual's spiritual struggles
Session 3	90 min.	Spiritual strivings	• Individual reflection on God's response to one's spiritual struggles of job stress and burnout
Session 4	120 min.	Spiritual resources	• Spiritual meaning making, focusing on the relationship with God through three spiritual resources • Spiritual well-being (meaning, purpose, wholeness) • Calling • Religious coping
Session 5	30 min.	Prayer therapy and conclusion	• Encouraging the participants to pray and talk to God closely, based on their faith • Participants share reflections on the group process and their hopes for their future spiritual path

Instrumentation.

I: Personal Information. A demographic questionnaire was constructed to derive categorized personal information on the following aspects: (1) gender, (2) age, (3) marital status, (4) number of children, (5) education level, (6) monthly income, (7) years of pastoral service, (8) size of the church, (9) current religious denomination, and (10) pastoral work. Additional questions 11-13 focused on the respondent's perceived level of stress, thoughts of moving or leaving the ministry, and ways of coping with stress.

II: Measures. The two validated instruments of Thai versions are used (CHSS and FBI).

1) Challenge and Hindrance Stressors Scale (CHSS) developed by M. Cavanaugh, W. Boswell, M. Roehling, and J. Boudreau (2000). On the whole, challenge stressors are perceived as enhancing mastery and personal growth, while hindrance stressors hinder them. The items for both variables were taken from the original Cavanaugh et al. (2000) scale. In this study, the Thai version of CHSS demonstrated reliable as Cronbach's alpha of .85

2) Francis Burnout Inventory (FBI). The FBI was developed and published by L. Francis, P. Kaldor, M. Robbins, and K. Castle (2005). It is a 22-item measure designed to assess burnout in religious leaders. The FBI consists of two subscales: the Scale of Emotional Exhaustion in Ministry (SEEM) and the Satisfaction in Ministry Scale (SIMS). In this study, the Thai version of FBI demonstrated reliable as Cronbach's alpha of .84

Procedure

The psychospiritual intervention workshop entailed the expertise of three facilitators with experience in the field of theology, psychology, and communication. These facilitators had been trained to follow the manual of the experimental procedure and were expected to demonstrate their ability and competence in implementing the program through role-play situations and other workshop activities.

Analytic strategy

To examine differences in the sample scores between the pretest and posttest of both experimental and control groups, 2 x 3 MANOVA for repeated measures was conducted on the factors of burnout, challenge job stressors, and hindrance job stressors. The multivariate tests based on all these multivariate tests of significance (i.e., Pillai's, Wilks', Hotelling's, Roy's) were employed to test the mean difference of both groups combined. In the meantime, tests of within-subjects contrasts were used to compare the significance of the mean scores made in the pre-intervention condition with those made in the post-intervention condition. For each factor against group interaction of the three variables of burnout, challenge job stressors, and hindrance job stressor outcomes, all the aforementioned multivariate tests of significance and tests of within-subjects contrasts were conducted.

Results

The results indicated that the decrease in both the job stress scores and the level of burnout scores made between the pre- and

post-intervention conditions were similar across the two groups (experimental, control): that is, the difference was not statistically significant.

Challenge/Hindrance job stressors. Results from the multivariate tests of significance indicated that the main effect for the within-subjects variable of Trial (pre- post-job stress) was significant ($p<.05$), based on all four multivariate tests of significance (Pillai's, Wilks', Hotelling's, Roy's). From the cell means, the results indicated that the participants scored higher on the job stressor variable in the pre-intervention condition ($M=3.115$) than in the post-intervention condition ($M=2.967$), averaged across the two groups (experimental, control). This was confirmed by the tests of within-subjects contrasts which contrasted the job stressor scores obtained across the pre- and post-intervention conditions. The contrast compares the job stressor scores made in the pre-intervention condition ($M=3.115$) with those made in the post-intervention condition ($M=2.967$), and was statistically significant, $F_{(1,46)}=4.145$, $p<.05$.

For the trial (pre- post-job stress)* group interaction, all four multivariate tests (Pillai's, Hotelling's, Wilks', Roy's) indicated that this interaction was not statistically significant ($p>.05$), suggesting that the job stressor scores made across the pre- and post-intervention were not dependent on the type of treatment groups (i.e., experimental versus control).

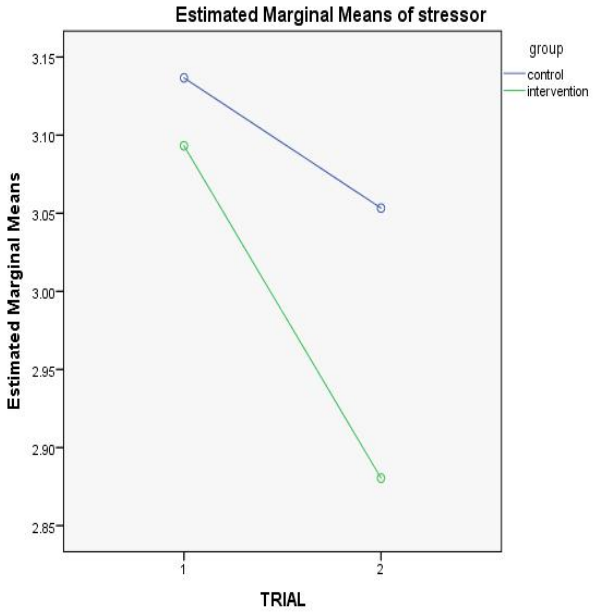

Figure 2 presents this interaction in graphical form.

Figure 2 shows that there is a general decrease in the job stress scores made across the pre- and post-intervention conditions for the two groups. However, the rate of decrease was greater for the experimental (intervention) group than for the control group. The tests of within-subjects contrasts presented the contrast between the job stress scores obtained across the pre- and post-intervention conditions for the two groups. The contrast was

not significant, $F(1,46)=0.792$, $p>.05$, which indicated that the mean difference in the job stress scores made between the pre- and post-intervention conditions was similar for the experimental and control groups.

Job Stress	Mean Difference (pre- *vs* post-intervention)
• Experimental	0.213 (3.093-2.880)
• Control	0.084 (3.137-3.053)

In conjunction with Figure 2, the results indicate that the decrease in the job stress scores made between the pre- and post-intervention conditions was similar across the two groups (experimental, control), i.e., the difference was not statistically significant.

Burnout. Results from the multivariate tests of significance indicated that the main effect for the within-subjects variable of burnout was not significant ($p>.05$), based on all four multivariate tests of significance (Pillai's, Wilks', Hotelling's, Roy's). From the cell means, the results indicated that the participants scored lower on this variable in the pre-intervention condition ($M=2.692$) than in the post-intervention condition ($M=2.705$), averaged across the two groups (experimental, control). However, this difference was not statistically significant. This was confirmed by the tests of within-subjects contrasts which contrasted the burnout scores obtained across the pre- and post-intervention conditions. The contrast compares the burnout scores made in the pre-intervention condition ($M=2.692$) with those made in the post- intervention condition ($M=2.705$), and was not statistically significant, $F(1,46)=0.127$, $p>.05$.

For the trial (pre- post-burnout)* group interaction, all four multivariate tests (Pillai's, Hotelling's, Wilks', Roy's) indicated that this interaction was not statistically significant ($p>.05$), suggesting that the burnout scores made across the pre- and post-intervention were not dependent on the type of treatment groups (i.e., experimental versus control). Figure 8 presents this interaction in graphical form.

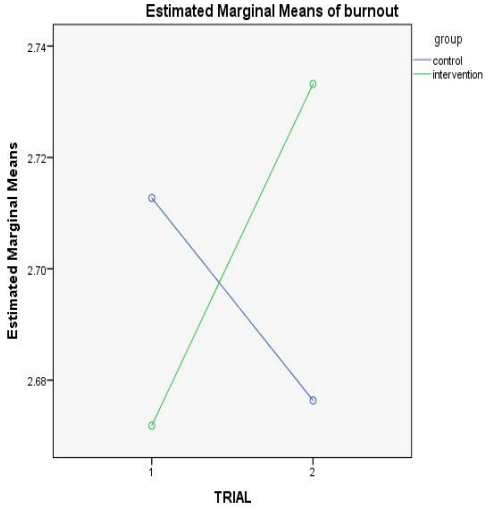

Figure 3. Profile plot for the trial (pre- post-burnout) *group interaction.

Figure 3 shows that the burnout scores increased across the pre- and post-intervention conditions for the experimental (intervention) group, but decreased for the control group. The tests of within-subjects contrasts presented the contrast between the burnout scores obtained across the pre- and post-intervention conditions for the two groups. The contrast was not significant, $F(1,46)=1.94$, $p>.05$, which indicated that the mean difference in the burnout scores made between the pre- and post-intervention conditions was similar for the experimental and control groups.

Burnout	Mean Difference (pre- *vs* post-intervention)
• Experimental	-0.061 (2.672-2.733)
• Control	0.037 (2.713-2.676)

In conjunction with Figure 3, the results indicate that the changes in the burnout scores between the pre- and post-intervention conditions were similar across the two groups (experimental, control).

Discussion

The results of the study contradicted researcher expectations as the psychospiritual intervention package which incorporated elements of spiritual well-being, calling, and religious coping, increased the levels of challenge/hindrance job stressors and burnout instead of lowering them for the intervention (experimental) group. On the other hand, the control group, without undergoing psychospiritual intervention, reported lower levels of challenge/hindrance job stressors and burnout. However, the difference between the two was not statistically significant.

For the experimental group, after the intervention of the level of burnout of pastors could possibly increase due to the opportunity of being able to express the suppressed feeling and stresses which could have unknowingly been storing up within themselves. During the sessions, the pastors gained new knowledge about stress and burnout within the context of psychology. Being more aware of the nature and extent of how to deal with emotional problems may have opened up unresolved issues and stress in their emotionality. The intervention itself may have raised the pastors' awareness of the potential harm of stressors and burnout, which may not have surfaced had they not been exposed to the intervention's objectives. In other words, the pastors' heightened awareness of the dangers of stressors and burnout may have triggered fear and uncertainty which the pastors barely realized existed prior to the workshop. Nouwen (1979) applied Jung's model of the "wounded healer" to the pastoral context in that one's own wound can become a source of life for others. By creating space for other broken individuals, failed and wounded pastors are able to transform and empower themselves before they can help heal the wounds of others.

Religious coping can be seen as an active and dynamic process and, alternatively,

as an attempt to make sense of, deal with, and manage stressful life circumstances in a specific time and place. By approaching religion from a coping perspective, it helps people to change from the abstract to the concrete, and allows people to look at how precise each individual applies specific religious elements in particular life contexts and situations. It also forces individuals to encounter their real life problems with reality and faith, and to rely more on God and not only on their own strengths.

Non-intervention (control) group. Without attending the planned workshop, members of the control group were asked to fill in a set of questionnaires on stress and burnout. The self-administered questionnaires were completed and collected within 20 minutes. The researcher, then, provided the same set of questionnaires with the instruction to complete the set after one week and return the same via e-mail. With no intervention and information for the control group, the results showed that the levels of their reported job stress and burnout decreased, but that the interaction was not statistically significant.

Overall, the results indicated that the decrease in both the job stress scores and the level of burnout scores made between the pre- and post-intervention conditions were similar across the two groups (experimental, control); that is, the difference was not statistically significant. The results can be explained by using the theoretical perspectives of professional protective emotional suppression and collectivistic culture. Moreover, another theory could help explain the unexpected results which is the 'expectancy theory with placebo effect'. The following section presents some arguments.

The professional protective emotional suppression framework proposes that people view themselves with authority and perfection, as in the case of pastors as they need to maintain the image of being Christ's representative on earth. Being human beings, the pastors' sense of intense perfectionism within the role of pastoring is unrealistic; thus, they are unable to meet other people's as well as their own expectations. These feelings could potentially create a state of high internal anxiety, high fear levels, and internal feelings of lack of worth and lack of talent (Machell, 1987; Scazzero, 2003, 2006).

From the collectivistic cultural point of view, Asian culture tends to be more reserved in the aspect of emotional expression. Negative emotional expression is considered as taboo because cooperation with other group members and putting group well-being above the individual is critical (Pratomtong & Bakker, 1983). When taken within the context of the current investigation, these theoretical perspectives can explain the outcomes. For example, pastors in the control group, may have tried to conceal their stress and burnout symptoms to put themselves in a better light at the pre- and posttest segments of the study.

The expectancy theory, being one of the most popular theories on the placebo effect can also help explain the results. The placebo effect phenomenon is related to the perception and expectations of the subject (Peck & Coleman, 1991). If a subject sees something as helpful, then it can heal; and if views as harmful, it can

cause negative effects. Both expectations and conditioning play a critical role in the placebo effect phenomenon and, to some extent, can make some positive contribution. Hypothetical expectancy is based upon the conditioning and expectation of the subject. The effect seems to disappear if the subject is informed that his/her expectations are unrealistic, or that the placebo treatment is completely ineffective.

In this investigation, for example, the control group received nothing from this researcher except information on the purpose of the research, without psychoeducation and intervention, but with conditioning and the expectation of filling up a set of questionnaires. Thus, the placebo effect from the expectation theory helps to explain the phenomenon experienced by some pastors: that these expectations arise not only from conscious thoughts but also from subconscious associations in the brain.

It could, thus, be understood that this study has shed light on the revelation that within the circle of Thai Protestant pastors, psychospiritual intervention alone might not be a sufficient tool in lowering their levels of job stressors and burnout, and that the process can even produce the opposite consequences as it may bring to the surface hidden emotional wounds and stir up emotional suppression. This may stem from pastors' professional and social requirements, being considered to be men and women of authority, perfection, correctness, and holiness.

Implications of the Study

The findings from the present study carry a number of important and practical implications relative to the efficacy of psychospiritual intervention aimed at lowering the levels of stress and burnout among the church leaders concerned.

First, the use of spiritual-integrated therapy as psychospiritual intervention has filled an important gap in the literature with regard to the relationship between religion and mental health in both Western and non-Western traditions as well as in the fight against stress and burnout among religious leaders in the community.

Second, individual or group pastoral counseling and Christian coaching will help pastors address the realities of their own psychological and spiritual challenges, promote well-being and professional renewal in their quest to be emotionally healthy pastors. Interestingly, psychology looks at burnout as a negative state of emotion; in theological context, however, it is part of one's journey in spiritual growth. A painful experience is described as the "dark night of the soul" by the Spanish mystic and poet John of the Cross, 1541-1597 (Moore, 2004). These difficulties are often seen as a means to break illusions and to get insight into reality by God's astringent grace to open new realms of spiritual experience. The dark nights are not problems, but opportunities for growth.

Third, at the church organization level, denominational leaders should provide training workshops to understand psychological perspectives on issues that impact on the mental and spiritual health of pastors. These religious authorities should engage in a collaborative partnership with other helping professionals in exploring the value of stress management programs and continuing research as part of their professional development planning.

Fourth, more intensive preventative and psychoeducation schemes and programs aimed at reducing or managing stress and burnout should be introduced to seminary education in addition to the infusion of stress management and burnout prevention in curriculums for future pastors to help them deal with forces that adversely affect spiritual life.

Finally, counseling centers incorporating Christian values and traditions should be set up within reach of pastors and church workers. Such centers should be perceived as a safe place for pastors to air their concerns and learn techniques and strategies to reduce stress. Moreover, more retreat centers should also be established to provide a venue for workshops and psychoeducation to equip pastors with the right values, strengths, and skills to deal with spiritual and emotional issues in themselves and their congregants, as well as to serve as a safe environment where pastors can interact with other pastoral professionals and exchange, share, and learn from each other with confidence and openness.

Conclusion

In conclusion, the present research provides a new and fresh look at spiritual resources within the Asian context and, especially, within the Thai setting as the first evidence-based study of the impact of spiritual resources on the levels of stress and burnout among pastors in serving God. This study has unveiled the hidden aspect of emotional wounds in the form of stress and burnout, lying below the surface as in the iceberg analogy but suppressed from public view due to the fear of being seen as weak and unworthy and not being able to serve and fulfill God's call. It is, indeed, impossible to promote a spiritually healthy church and congregation without spiritually and emotionally healthy pastors.

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Molecular Variation in the Sporozoite Theonine-Asparagine-Rich Protein Gene from *Plasmodium Falciparum*-Infected Patients in Thailand

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Abstract

The sporozoite threonine-asparagine-rich protein (STARP) of *Plasmodium falciparum* is a sporozoite protein localized on the membrane of sporozoites and has been considered a potential candidate for malaria vaccine development. Recent studies have shown that synthetic peptides derived from STARP bind efficiently to hepatocytes in culture. Furthermore, antibodies directed against STARP are capable of blocking sporozoite invasion into hepatocytes, suggesting that the protein plays a crucial role in the process of hepatic invasion by sporozoites. Meanwhile, most malarial surface proteins exhibit sequence polymorphism among isolates that could hinder an effective malaria vaccine design. Therefore, we recruited 44 blood samples from patients who got P. falciparum infections from Tak and Kanchanaburi Provinces for analysis. The STARP gene was amplified by the polymerase chain reaction spanning the entire gene, followed by direct sequencing. Results revealed that 44 sequences of the remaining isolates were compared with the sequence of clone T9/96. In total, 4 nucleotide substitutions were observed and all substituted codons resulted in amino acid exchanges. Importantly, most of the altered amino acids retained their physicochemical properties, suggesting that some functional or structural constraints occurred in this protein. Besides, insertion/deletion of the repeat units was found in the 45-amino acid repeats and the 10-amino acid repeat region, accounting for a minor variation in size of this gene among isolates. Therefore, limited sequence variation in STARP of P. falciparum has encouraged malaria vaccine incorporation.

Keywords : Molecular Variation, Sporozoite Threonine-Asparagine-Rich Protein, *Plasmodium Falciparum*

Introduction

Malaria remains a major tropical human disease and every year malaria kills more than a million people worldwide (Breman et al., 2004). *Plasmodium falciparum,* causes the most severe forms of the disease, and is responsible for the high morbidity and mortality, frequent antimalarial drug resistance and aborted vaccines trial (Apinjoh et al., 2015). Therefore, there is an urgent need for the development of a broadly effective malaria vaccine to reduce malaria morbidity and significantly impact this disease, an enormous public health burden (Bojang et al., 2001). In the context of the development of a successful malaria vaccine, a major potential obstacle is the issue of genetic polymorphisms exhibited by malaria antigens. While an understanding of these polymorphisms in natural Plasmodium populations is not only crucial for proper vaccine design, deployment and evaluation, such data may also provide invaluable insights into host-parasite interaction (Richards et al., 2009).

The STARP, one of the dominant surface antigens on the sporozoite of the malaria parasite. *P. falciparum* sporozoite threonine-asparagine-rich protein (PfSTARP), is a 67 kDa, highly conserved, 604-residue protein. Its structure includes a complex repeat central domain consisting of a mosaic region followed by tandem 45-amino acid-encoding (Rp45) and 10-amino acid-encoding (Rp10) repeat regions (Fidock et al., 1994). There is limited size variation in this domain, resulting from highly localised duplication events in the Rp45 and Rp10 regions. There is no size variation in the 5′ or 3′ coding non-repetitive regions. Immunoflourescence and immunoelectromicroscopy assays carried out using immune sera targeting the protein's central and C-terminal region have shown that STARP is expressed on the surface of the sporozoite forms that invade hepatic cells, suggesting a role during parasite's entry to the hepatic cell and infection. STARP proteins have been implicated in hepatocyte invasion based on their surface localization in sporozoites and on the fact that antibodies against them can inhibit hepatocyte invasion. (Fidock et al., 1994)

STARP has been considered a potential pre-erythrocytic vaccine candidate because naturally acquired or experimentally induced antibodies to this antigen could block *P. falciparum* sporozoite invasion of hepatocytes (Pasquetto et al. 1997). Anti-STARP antibodies induced by either natural infections or immunization with irradiated sporozoites can efficiently block sporozoite invasion into hepatocytes in a dose dependent manner (Pasquetto et al., 1997).

Moreover, the use of synthetic peptides from various parts of the STARP protein attached to the liver cells in vitro, at least 12 synthetic peptides can be attached to the liver cells very well. These peptides contain both the N-terminus in the central region, harboring a repeat, and C-terminus. So it is important to support that STARP plays an important role in the process of sporozoite and the liver cells in the cell attachment process (Lopez et al., 2003). A study of the potential of STARP as a component of the vaccine that It was found that when using the synthetic peptide that binds

STARP to LSA 1, LSA 3 and SALSA, the peptide was able to induce both T cell and B cell expression and also specific to these proteins.In addition, the cytotoxic T cell epitope in STARP is likely to be a target for the immune response in liver cell stages (Lalvani et al., 1998)

However, one of the major problems in the development of the vaccine against malaria is antigenic polymorphism. Malaria genetic variation is caused by the exchange of genetic material that occurs during sexual reproduction. The next generation of malaria may have different genetic components. This results in a variety of forms of antigen. The effects on both antibody responses and T lymphocyte responses (Rosenberg et al., 1989) have also been implicated. Moreover, studies of STARP proteins have not been studied extensively in antigenic diversity. However, to design more effective malaria vaccines and to help interpret efficacy data from vaccine trials, an under standing of the dynamics of polymorphism in vaccine antigens and the factors that a redriving to polymorphism is necessary (BenMohamed et al., 2004). This study has examined the molecular variation of STARP gene in *P. falciparum* from infected patients in Thailand. A rational design of STARP gene based vaccine should take into account the molecular variation among natural *P. falciparum* populations and leads to a better understanding of the genetic basis of this gene. This will be beneficial for the development of the vaccine against malaria.

Materials and methods

Source of P. falciparum DNA

We recruited *P. falciparum*-infected blood samples from 44 symptomatic patients who had acquired the infections from diverse geographic areas in Thailand. DNA of these samples were extracted by either using proteinase K digestion followed by phenol/chloroform extraction or using the QIAGEN DNA Extraction kit (Hilden, Germany) following the manufacturer's protocol. After the purification procedure, these DNA samples were stored at-30 ℃

Polymerase chain reaction

1. The extracted DNA is used as a template for PCR. It is necessary for reaction 1 sample of 30 µl net solution consisting of 2 µl of DNA extracted, 0.26 µl of forward and reverse primer, 3 µl of 10X PCR buffer, 3 µl of $MgCl_2$, 4.8 µl of 2.5 µM dNTP,0.3 µl of Taq DNA polymerase for catalytic enzyme and 16.38 µl of distilled water.

2. Bring tubes containing PCR into the automatic temperature and time controls.This consists of a DNA denaturation step at 94℃ for 1 mins, a primer to catch the sample DNA template 50℃ for 0.4 mins and primer extension at 62℃ for 3 mins.The final reaction time was 35 mins.

PCR detection by gel electrophoresis

Preparation of 1X agarose gel and 1X TBE 300 mL in electrophoresis chamber. Prepare the PCR product mixed with loading dye 1 microliter drop into agarose gel by using λ Hind III as the marker DNA. The size of the

PCR product was measured by using 100 volts for 30 minutes, after which the gel was stained with ethidium bromide for 15 minutes. Using ultraviolet light and taking photographs to measure the size of the STARP gene and compared with the size of the DNA marker.

DNA sequencing and data analysis

DNA sequencing is based on the principle of dideoxy chain termination, where DNA labeling uses fluorescence based on the tracking of four different glowing colors for the 4 bases: A C G T The color used for each label. When triggered by laser light will fluoresce in different wavelengths. And the light appears different. They are seen in green, black, blue, and red, respectively, with the ABI Prism 310 Genetic Analyzer. All sequences of the STARP genome are sequenced and aligned with the BioEdit and ClustalX computer programs.

Results

STARP gene amplification by polymerase chain reaction

The STARP gene was amplified by polymerase chain reaction using STARPF0 and STARPR0 primers. The STARP gene from 44 isolates were analyses by agarose gel electrophoresis and compare with the marker gene λHind III. The results of the analysis STARP gene were about 2,000 bp (Figure 1)

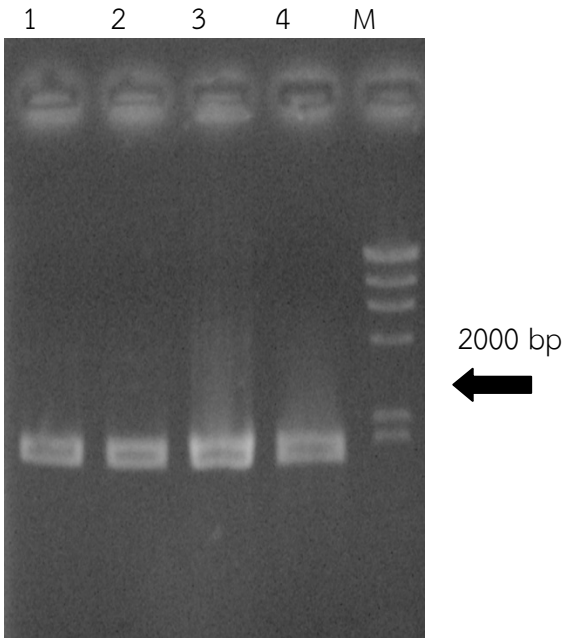

Figure 1. The results of PCR analysis by agarose gel electrophoresis.It was sorted by numbers 1, 2, 3, 4 are examples respectively, and the letter M is the marker using the λHind III.

Analysis of the sequence of STARP gene nucleotides.

By analyzing the sequence of 44 STARP genes, STARP was compared with the STARP gene from T9 / 96, which was the reference nucleotide sequence that was studied (17) in Figure 2. The longest nucleotide sequence was 1979 bp, encoding 604 amino acids and the shortest nucleotide sequence was 1844 bp encoding 559 amino acids. Nucleotides included intron and found that G-C content and A-T content were 21 and 78 percent, respectively. By analyzing each of the STARP genes, there were 4 nucleotide substitutions at position 20, 1123, 1321and 1382.

At the position 20, the nucleotide of exon 1 was replaced from G to A, resulting in the codon being changed from AGG to AAG. The two codons were coded for amino acid production. When the replacement of the respective nucleotides so it changes the type of amino acid from Arg to Lys in27 samples. The position 1123, which is a part of exon 2, changes the nucleotide from A to G, resulting in the codon changing from AAT to GAT, and replace amino acids from Asn to Asp in 11 samples. The replacement of the nucleotide from A to C causes the codon to change from ACA to CCA, resulting in the amino acid change from Thr to Pro, found in a one sample. At the position 1382, two types of nucleotides were substituted in one codon: from A to C and C to A or AAC to ACA, resulting in amino acids from Thr to Asn in 16 samples as shown in Table 1. Comparison of these codon substitutions used nucleotide sequences from T9 / 96 as a reference sequence.

In addition to the point mutation occurring in exon1 and exon2, mutations in both Rp45 and Rp10 sequences were observed.In the Rp45, there is a sequence of repeats: Tm3, SK20, K59, PN18, A83, AF5, S151, Tm33, AF1, Tm27, CH7, A100, A99, CH1, MK32, RB5, SK1, TD511, SK37, TM11, TM23, TM9, AF3, B82, B111, B112, B113, B114, T137, TM5, TM22, TM24, TM26, TM32, TM45, TD505, TM25, TM2 and S118 except sample B91as shown in Table 2and in the Rp10 section. There were 3 deletion/insertion regions: position 1454-1483. There are 15 samples of deletion. In the positions 1483-1484,there are 31 samples of insertions. In addition, there are 12 deletion samples in positions 1547-1576as shown in Table 3.

Analysis of the amino acids of the STARP gene

The replacement of the nucleotide sequence that occurs in Table 1 causes four amino acids to change from Arg, Asp, Thr and Thr to Lys, Asn, Pro and Asn at the position 7, 375, 441 and 461, respectively. Considering the properties of the amino acid, the position 375 changed from Asp (acidic charged) to Asn (uncharged, but polar) and the position 441 changed from Threonine (with polarity) to Proline (no polarity). The recurrent sequence changes that occurred in Rp45 and Rp10 from Table 3 and Table 4 resulted in the increase of insertion and deletion in different sequences. In another the amino acid changes remain the same physical and chemical properties.

Table 1. The sequence of nucleotides in the altered position of the STARP gene.

Number of variant isolates	nucleotide position	codon	amino acid	Type of nucleotide substitution
41 samples	20	AGG	Arg	Transition
		AAG	Lys	
11 samples	1123	GAT	Asp	Transition
		AAT	Asn	
1 samples	1321	ACA	Thr	Transversion
		CCA	Pro	
16 samples	1382, 13833	ACA	Thr	Transversion
		AAC	Asn	

Table 2. The nucleotide change in Rp45.

Number of variant isolates	Number of repeat in Rp45
43 samples	1
1 samples	2

Table 3. The nucleotide change in Rp10.

Number of variant isolates	The position of nuclotide changed in Rp10 *		
	1454-1483	1483-1484	1547-1576
15 samples	Deletion	insertion	-
12 samples	-	insertion	deletion
4 samples	-	insertion	-

* Sequence refer positioning in T9 / 96 strain excluding intron

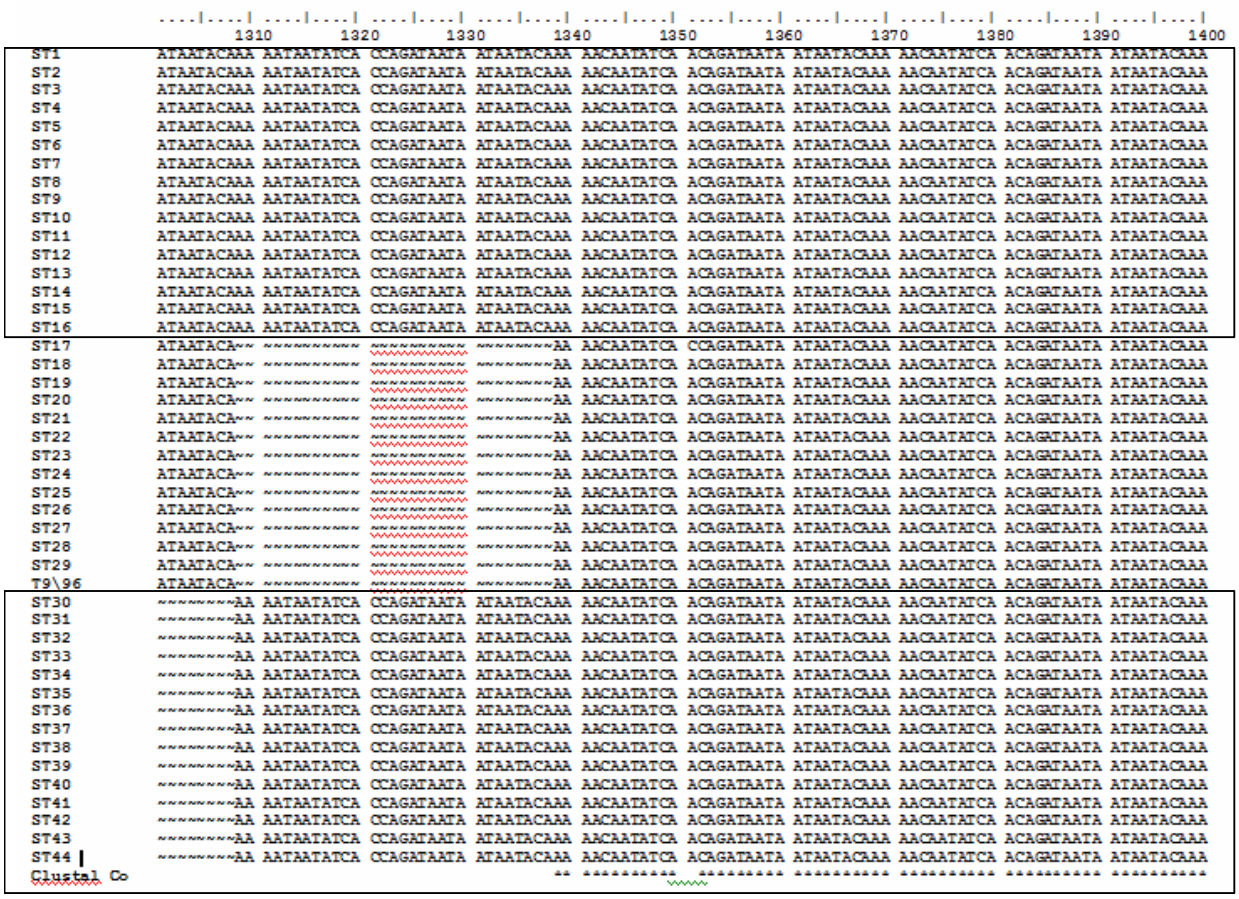

Figure 2. Multiple sequence alignment of STARP gene

Discussion

This research was conducted to study the molecular variation of STARP genes from Thai patients. The variation of these genes was low. Only 4-point mutations were found. In addition, variation of the repeated sequence was found in Rp45 and Rp10, but not in other parts of the gene. However, this indicates the gene is conserved to maintain the genotype, especially towards the end of N-terminus, which is the signal peptide position, and towards the C-terminus end. The substitution of both transition and transcriptional nucleotides is found 50 and 50%, respectively. Importantly, most of the altered amino acids retained their physicochemical properties, suggesting that some functional or structural constraints occurred in this gene

Therefore, the presence of STARP gene diversity in this study is an important basis for the development of STARP vaccine components. It is noteworthy that the insertion and deletion of repeated nucleotides in the Rp45 and Rp10 regions will change in pattern. Especially in the Rp10 region, where the nucleotide sequences are arranged in series, each set may have a different sequence of sequences (degeneration sequence). It seems to be related to the slipped strand mispairing mecha nism between the nucleotide sequences of duplicate nucleotide sequences. This is due to the exchange of genetic material of malaria in sexual reproduction and these pattern is one of the antigenic polymorphisms of malaria (Hughes, 2004).

However, for the composition of effective anti-malarial vaccines not only destroying many stages but also antigen components should not be excessively variation and can stimulate the body's immune system (Miller et al., 1986). Moreover, It can stimulates the immune system of both B cell and T cell to be effective in destroying or inhibiting the progression of malaria completely and it will result in the immunity for a long time especially in STARP genes that are found to be involved in adherence to liver cells (Lopez et al., 2003). The STARP gene also has a variety of low nucleotide sequences. When using circumsporozoite protein (CSP) and thrombospondin-related adhesive protein (TRAP) together, it can be more effective than malaria in the use of one protein. (Khusmith , 1991)

Therefore, the finding of STARP gene variation in this study is an important basis for the development of STARP vaccine components.

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Approaches in Developing Food Products for Elderly

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Abstract

Many countries are experiencing to an aging society. As the world economic comes to depend on elderly people, innovative products are needed to support consumer demand. Suitable food products are one of the basic requirements for elderly people. The elderly may have a lower sense of sensory perceptions, which results in smell, taste, hearing, sight, and touch. Thus, understanding of these senses is important for developing food products for elderly. So far, elderly food products can be found which address heart health, digestive health, bone health, cognitive health, joint health, and age retardation products. Japan is the first country that has a patent registered for elderly food product. However, Thailand is currently conducting many studies in order to develop elderly food products related to realistic portion size, visualization of sizing, nutrient dense foods, micronutrient enhancement, texture modification, compensatory strategies, and packaging solution.

Keywords : Product Development, Elderly Food, Aging Society, Guideline, Approach

Introduction

Nowadays, many countries are turning to an aging society. Due to the evolution of medical and health sciences and technology, the average life expectancy of people is increasing, especially, the industrial countries, such as, Japan, and United States of America. Even in developing countries, such as, Singapore, Malaysia, and Thailand, the numbers also are increasing. In addition, the birth rate is decreasing. The number of elderly population in the next 40 years is increase. The population of elderly in industrial countries will be more than 30 percent and about 20 percent in developing countries. (World Economic forum, 2012). This is approximately 2,000 million people, which means that the elderly will be more than half of the consumers in the world. When the world economy depends on elderly people, innovative products are needed for support the consumer demand. Food product is one of the basic requirements for elderly people.

The exported value of food products for all over the world is approximately 1 million US dollars. Thailand is also one of the biggest food exporting countries. Thus, we need to in develop food product that are suitable for elderly people, including ready to eat food (RTE), easy to chewing food, digestible food, low fat food, high minerals and vitamins food, etc.

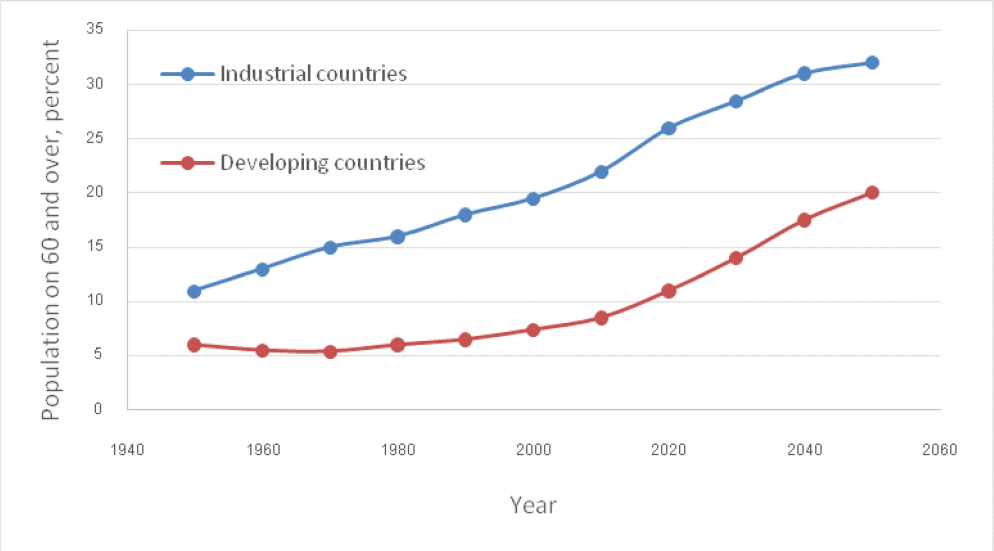

Figure 1 : Population of elderly people prediction in next 40 years

Source : Global Population Aging : Peril or Promise?. World Economic forum 2012.

Sensory degradation of elderly

The degradation of sensory perceptions can be found in the elderly due to their cells disruption. Sensory is defined as the 5 combination senses, which are smell, taste, hear, sight, and touch. This is how consumer receives information about food's flavor, appearance, color, temperature, and texture. Thus, the decline of these functions in elderly creates an opportunity to develop food products for the elderly. (Rolls 1993, Morley 1997).

The ruination of olfactory nerve in elderly has been described means lderly that some can not smell well and that they also face more trouble in smell identification (Wysocki & Gilbert 2006, Aschenbrenner et al., 2008, Schubert et al., 2011).

The elderly taste system does not change much. In the past, some researchers stated that taste declines with age due to the decreasing of taste buds (Seiberling & Conley, 2004). When the researchers use more accurate techniques, they found that there is little any loss of taste buds. However, they may have some changes in taste cell membrane, which lead to small differences in taste system (Fukunaga et al., 2005).

Dental status and oral health are the influence factors, which impact on oral tactile perception (Ship, 1999). Seniors may suffer from chewing efficiency, such as, increasing of chewing frequency or duration (Kohyama et al., 2002, Mioche2004).

Food sensory recognition increases when customers continually bite, thus, flavor perception in elderly might not be comparable to younger due to the difficulties in dental status, which leads to longer chewing time.

Elderly food products

Most food products developed for seniors claimed compounds or nutrients, which are appropriate to elderly and can be classified into 6 groups: heart health, digestive health, bone health, cognitive health, joint health and age retardation. (Leatherhead Food Research, 2012)

Heart health products contain high omega-3 fatty acids and are consumed for reducing cholesterol by adding some plant sterols and stanols to the product. The example of this product is Slovenia: Danone Danacol Erdbeere (Figure 2). The market trend of this product type is approximately 11 billion U.S. dollars per years.

Figure 2: Slovenia: Danone Danacol Erdbeere.

Source: https://static.openfoodfacts.org/images/products/560/105/001/9100/front_pt.5.full.jpg

Digestive health products contain probiotics and prebiotics. Mostly products are dairy products, such as, milk, yoghurt, and drinking yoghurt. There is also some fermented cereal products for example, sourdough and sour bread. However, this type of product is suitable for not only elderly but also for all customers, because digestible problem can be found in a wide range of customers. Nevertheless, there is an industry that produced for specific age like Actimel 50+ by Danone (Figure 3).

Figure 3: Actimel 50+

Source: http://www.foodtrendtrotters.com/wp-content/uploads/2012/01/Actimel-50+.jpg

Bone health products are growing annually and its market value is roughly 2 billion U.S. dollars per year. This type of product mostly contains calcium and vitamin D. Some products might add extra nutrients for value-add, such as, B-complex vitamins and vitamin K. Nearly all company developed this type of product from dairy because it is its normally high in calcium. However, there are new approaches, which are developed from juice and biscuits as well. For example, Virginias B-San Calcio Densis Biscuits from Spain (Figure 4).

Figure 4: Virginias B-San Calcio Densis

Source: https://www.dieetland.nl/media/catalog/product/cache/2/image/650x650/9df78eab33525d08d6e5fb8d27136e95/v/i/virginias-bsan-integral-calcio.jpg

Cognitive health products are found that to reduce early Alzheimer's disease. Some nutrients are required in the process of making new connections in the brain called synapses. The loss of synapses is one of the key features of early Alzheimer's disease. Omega 3 fatty acids, uridine monophosphate and choline, together with several key vitamins, all work together to help this process. The example of this product is Foremost Calcimex, which contains high amount of both calcium and Omega 3 fatty acids (Figure 5).

Figure 5: Foremost calcimex

Source: http://1.bp.blogspot.com/-cfEMg4umxJM/TnIvg07ipAI/AAAAAAAALg0/_1e-ib8CW8E/s1600/SANY0001.JPG

Joint health product is one of the famous products that is predictable to be high market value. It mostly contains glucosamine, which is a natural chemical compound in human body. It helps boost up the health of your cartilage. In elderly, levels of this compound begin to drop, which leads to the gradual breakdown of joint. The example of joint health product is Joint Juice from United States of America (Figure 6).

Figure 6: Joint Juice

Source: https://www.jointjuice.com/sites/jointjuice/files/images/other/PRODUCT_all3-new.png

Age retardation product or cosmetic food products contain several active ingredients, such as, collagen and aloe Vera, which promote beneficial to skin, facial, and hair. Some research suggests that the demand of this type of product is increasing with age. This product might be easier to sell to women than men. (Leatherhead Food Research, 2012)

Patents trademarks and copyright products for elderly

There were some patents, trademarks and copyright products for elderly. They are classified into 3 groups, which are product, process, and packaging. The interesting discovery is all of them were registered only in Japan. In Japan, they also classified their patents into 3 groups as well, which are 1) patent about elderly food, 2) patent about canned beverage for elderly, and 3) patent about elderly food processing.

Registered products for seniors patented composed of 5 products; which are dried noodle-like food, functional food comprising lyophilized natto, foodstuff having lotus root as material, soybean milk cream, and rice cake food product.

Dried noodle-like food was developed by Pigeon Corp / Hakubaku KK. The main ingredient is wheat flour. Its thickness and length is not higher than 2 millimeters and 5 centimeters, respectively. Product texture is very soft and the amount of salt is reduced. Hence, this product is good for elderly oral health due to its chewable and easy-swallow.

Functional food comprising lyophilized natto was developed by blending natto into simultaneous cream. Then, it is mixed with vegetables, cereals, beans to achieve higher

nutritional value. This product is soft and easy digestive.

Foodstuff having lotus root as a source material was developed by mashing lotus roots and molding it into spherical shape. Then it was covered with whole wheat or rice flour and steamed. This product is chewable and easily digestible. Moreover, it maintains the original taste of lotus root, which is popular in Japan elderly.

Soybean milk cream is a low fat functional food. Soybean, a main ingredient, and is high amounts and varies amino acids, low in calories. Corn flour, polysaccharide, stabilizing agent, thickening agent, and collagen are added to soymilk. Then, it is heated and stirred until it becomes a cream-like product. This product is used as food additives in bakery products and some beverages.

The main ingredients of rice cakes are sticky rice flour, Irish potato flour, sweet potato flour, and water. The benefit of these ingredients is that they are easy to swallow and easy-digestible. The taste is similar to the original rice cake, however, there are fewer calories and easier to consume.

The second group of Japan patent is canned beverage for elderly, which has only 1 patent was registered in this group, which is pull tab/mold drink can. The unique of this can is easy for elderly to open. The cover body has adhered to the upper end of the can main body, which accommodates the liquid in the inside. The depth about 4 mm recess part, which becomes the lid, which comprises the cover body from a narrow concave surfaces, and a wide concave surface is formed in the shape of a substantially water droplet. The cutting which forms drinking opening taste in a wide concave surface is engraved in linear. Thus, this can need less strength to open than a normal can.

The last group of Japan patent for elderly food processing is one patent for producing dry food. Normally, dry food processing will reduce the nutritional value of raw materials Thus, when elderly consume this type of food, they will not absorb the nutrients with raw materials. The objectives of the method are maintaining taste and flavor of ingredients, reducing color changes, and prolonging shelf life. The method begins by cutting the fish into small pieces. Then, adding antioxidants about 0.1-10 ppm of meat weight. After that, the meat was lyophilized to keep its nutrients and prolong its shelf life. The patent for elderly in Japan is summarized in Table 1.

Table 1: Summary of patent for elderly in Japan

Title	Date registered	Applicant
1) Elderly Food		
1.1 Dried noodle-like food	25 December 2001	Pigeon Corp / Hakubaku KK
1.2 Functional food comprising lyophilized natto	25 November 2004	Pai corporation KK /
1.3 Foodstuff having Lotus Root as Material	14 April 2005	Azuma Corporation KK
1.4 Soybean Milk Cream		AK Foods KK
1.5 Rice Cake Food Product	22 September 2005	Carnival Cooker KK
	10 June 2010	Shidax Corp
2) Canned Beverage for Elderly		
2.1 Pull tab type/mold drink can	11 October 2012	ImizumiT, JP
3) Elderly Food Processing		
3.1 Method for producing dry food	2 July 2002	Pigeon Corp

Elderly food product in Thailand

Phakkhateema developed the prebiotic fortified soybean milk for elderly consumers. It found that pasteurized soybean milk in the carton box was the highest chosen among 40 participants in Songkla province, Thailand. The 4 percent w/v of probiotics added to the product is Bifidobacteriabifidum, Lactobacillus plantarum and Lactobacillus acidophilus. The food additives added to product were Inulin (I), galacto-oligosaccharides (GOS) and isomalto-oligisaccharides (IMO). After sensory evaluation by 200 elderly adults, the result found that the characteristics of the product were low to moderate viscosity, creamy white color, moderate beany flavor, low sweetness and no negative perception after adding prebiotic. (Phakkhateema, 2009)

Ice cream is one of the elderly foods in Thailand. The research began with study the desert consumption behavior of elderly adults who live in Klong Luang, Pathumthani. Low fat passion fruit ice cream was developed by faculty of science and technology, Valaya Alongkorn rajabhat University. The reconstituted milk was used in order to reduce fat. The developed product contained 47.42 kcal/100 g, carbohydrate 27.12%, fat 2.32%, and protein 1.73%. (Benjang, 2015)

Institute of Nutrition, Mahidol University developed riceberry rice vegan jelly contains high protein and high energy for the Elderly with dysphagia. Riceberry rice flour was reduced to various particle sizes and added to coconut cream. The result found that 80 mesh particle size had the greatest hardness, cohesiveness, and gumminess. This product is suitable for elderly, who had dysphagia problem. (Tasiri et al., 2015)

Srinakharinwirot University developed beverage cartons packaging styles base on universal design approach for those with low vision. The research began by interviewing 20 elderly with low vision about their behaviors and perceptions affecting their decision on purchasing carton beverages. Then, information was analyzed to specify designing approach. The result showed that factors affecting perceptions of people with low vision including shape, size, visual distance, color intensity, texture, illustration, color, font, as well as symbol. These factors affect communication efficiency, particularly in the case of people with low vision. (Anongnad, 2013)

Approaches in developing food products for elderly

The guidelines to develop elderly product may be classified to 7 approaches. The first approach is realistic portion size. The elderly will have a lowered appetite because of less activity, smaller body, weight reduction. These characteristics lead to lower caloric requirement. Thus, a meal size for elderly should be smaller than other ages. Visualization of sizing is the second approach. Large size of product could be frightening for elderly because eating might be a boring behavior for old age. Hence, the size of meal should look small and easy to eat. The third approach is nutrient dense foods. Small piece of product but dense in nutritional value, such as protein is good for elderly health because it can promote satiety and provide the greatest nutrition per bite. Micronutrient enhancement could be the next approach because it can be considered to compensate for reduced nutrient intake. Texture modification is considered as the fifth approach. Longer time of chewing or swallowing will increase the moisture level of the food to compensate for lower saliva production. The softer product is the key to solve this problem. Thus the food can be easily swallowed if need be without chewing or causing choking. The sixth approach is compensatory strategies. The product should be easy to handled, cut, and eaten. Thus, the elderly could easy consume with only one hand due to their reduction in motor skills and prevalence of arthritis. The last approach is packaging solution. A well design of graphics and proper text size are needed in packaging. And the physical package also should be easy to open.

Conclusion

The understanding in developing food products for elderly is needed, due to the degradation of sensory perceptions in elderly. Japan is the first country who has developed elderly food products and registered them as patents. However, Thailand also has some

research about food products for elderly as well. The approaches for developing food products for elderly are realistic portion size, visualization of sizing, nutrient dense foods, micronutrient enhancement, texture modification, compensatory strategies, and packaging solution. The implement of this review is that the food manufacturer can use as a guideline for developing elderly food products to the market. Moreover, consumer can use as an instruction for their consumption as well as their decision in buying food product for elderly.

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A New Paradigm of Peace Education Towards 'Just Peace' and 'Peace with the Earth'

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Abstract

As the second decade of the twenty-first century has nearly come to an end, the world is faced with many global challenges: wars, violence, conflicts, terrorism and nuclear weapons of highly massive destruction. The church statements on peace by major Christian denominations call for developing a theology of peace to bring peace and promote justice. Yet the classical concepts of peace as such are inefficient to prevent wars and violence if they neglect two important aspects of peace: 'Just Peace' and 'Peace with the Earth'. 'Just Peace' demands not only the absence of all forms of violence but also a transformation from violence towards non-violence resistance; and 'Peace with the Earth' demands the human responsibility to live in harmony and peace with one another and with the creation. This new paradigm of peace should be instilled in modern theological education accordingly to address particular social, political, cultural, and ecological contexts. This academic article aims at the new paradigm of peace education to generate transformative actions towards the reconciliation of justice and peace and the care of the divine creation for human beings in this world.

Keywords : Violence, War, Peace, Just Peace, Peace with the Earth, Peace Education

Introduction

In the past two decades, peace educators have been challenged in a variety of ways, one of which is the call to educate for peace and justice. The scope of the classical concept of peace was limited merely within pacifism and just war theory. Yet we have discovered that the debates of the two paradigms focused on whether or not to make war. What is not understood is whether the two paradigms are sufficient in solving violence and conflict so rampant in the world today. Until we understand how to build a culture of peace with justice in communities among human beings and the environment, violence and conflicts will still prevail. In this article, I argue that 'Just Peace' and 'Peace with the Earth' can fill this gap of knowledge and thus peace education today should be moved along a new paradigm heading towards the education of peace and justice. This new paradigm needs the construction of a new framework that is different from the classical one. This article, therefore, attempts to articulate a new structure by exploring such relevant literatures as Peace-Promoting Education Reform in SE Asia and South Pacific (UNICEF, 2014) ; Just Peace Companion (World Council of Churches or WCC, 2012) ; Glen H. Stassen's *Just Peacemaking: The new paradigm for the ethics of peace and war* (2008); and Ian Harris' *Theory of peace education* (2002). The article is divided into five parts: (1) The faces of violence in Asia; (2) Evolution of the concept of peace; (3) 'Just Peace'; (4) 'Peace with the Earth'; and (5) A new paradigm of peace education. This article hopes that peace education along this new paradigm will not only prevent violence but also enable the building of communities of peace, in which all can live in peace and harmony.

The Faces of Violence in Asia

In a vast region like Asia, there are different forms of violence. The task of peace-building is challenging because of the plurality of religions and races, languages and cultures, ideologies and philosophies, which could hinder the path to mutual understanding and harmony. Other challenges for developing countries in Asia are poverty, oppression, and suffering. Economic globalization, with its unsustainable development, is widening the gap between the rich and the poor in Asia. It is depleting resources by the terror waged by the powerful and developed countries in other parts of the world (Antone, 2005).

The Decade to Overcome Violence (DOV) during 2001-2010 summarized many faces of violence in Asia (Antone, 2005) : (1) Violence due to intra-state conflicts, which reflect the unrest among the marginalized due to ethnic and religious differences; (2) violence due to inter-state conflicts, which reflect post-colonial and cold war legacy, with differences in ideology; (3) violence from interpersonal and group conflicts due to differences in gender, sexuality, race, class, caste, ability, age, ideology or religion; (4) violence from unjust system of economic globalization and terrorism coupled with abuse of power; and (5) violence

to the ecological system by the abuse of the environment and the loss of stewardship in the creation of God. As the faces of violence are diverse, overcoming violence in Asia calls for many strategies of peace education. It is in this context that the Asian churches are called to be peace makers and to take concrete action in peace-building in order to move beyond conflicts. Thus the Christian Conference of Asia (CCA) had to develop several methodologies to promote peace-building through Asian churches (CCA, 2017)

Peace and Conflict in South East Asia Region

At first glance, South East Asia (SEA) seems to be full of peaceful countries; however, closer examination reveals that the majority of countries in the region are experiencing some form of conflict and violence: First, there are insurgencies in several countries: separatists strive to seek their own identity through violent means in order to be independent from the state (UNICEF, 2014). Second, there are inter-communal conflict and tensions between ethnic or religious groups or social classes, where one group is singled out for persecution. Third, there are political violence in this region, for example, radical terrorist attacks; violence associated with coups, mass demonstrations, and elections, followed by authoritarian regimes that always lead to political repression (UNICEF, 2014).

In addition to these challenges, the SEA region also experiences frequent natural disasters: Earthquakes, tsunamis, typhoon and cyclone caused marked loss of people in the region. SEA is the region of human diversity in terms of ethnic, linguistic, cultural and religious dimensions that are even more aggravated by globalization, migration, modern communication technology that lead to a rapid social change. Countries in this region have to confront the impact of rapid population growth, environmental crisis and climate change, urbanization and exploitation that threaten fragile ecosystem, biodiversity and habitats (UNICEF, 2014). There fore, we need international cooperation to overcome these challenges and we believe that all countries in the region have the potentialities to make a positive contribution to the promotion of peace and the reduction of conflicts. Educational institutions, in particular, hold the responsibility to initiate educational curriculum reform to play a positive role in the peace-promoting process for the SEA region.

Current status of Interpersonal Violence

The Global Status Report on Violence Prevention (GSRVP) in 2014 focuses on interpersonal violence: child mistreatment, youth violence, intimate partner violence, sexual violence and elder abuse. The data cover 133 countries, representing 88% of the world's population. Eight countries in the South East Asia (SEA) region, covering 97% of the population in the region, participated in the survey. The findings are that over the period 2000-2012, global homicides rates have declined over 16% (from 8.0-6.7 per 100,000 population). In the SEA region, homicide rate reached 4.3 per 100,000 population, the fourth highest of the six regions (Table 1). Thailand had the highest

homicide rate in SEA Region in 2012 (5.5 per 100,000 population), followed by Indonesia (4.7), India (4.3), and Myanmar (4.2) (Table 2)(WHO, 2014).

Table 1: *Estimated number and rates of homicides per 100 000 population, by WHO Region and country income status, 2012*

WHO Regions	Estimated number of homicides	Rate/100 000 population
African Region, low and middle income	98 081	10.9
Region of the Americas, low and middle income	165 617	28.5
Eastern Mediterranean Region, low and middle income	38 447	7.0
European Region, low and middle income	10 277	3.8
South-East Asia Region, low and middle income	78 331	4.3
Western Pacific Region, low and middle income	34 328	2.1
All regions, high income	48 245	3.8
Global	**474 937**	**6.7**

Source: *Global status report on violence prevention 2014.*

Table 2: *Estimated number and rates of homicides per 100 000 population, by country and income level in the SEA Region, 2012*

Country#	Homicide rate per 100 000 pop	Number of homicides	Number of population	World Bank income level
Bangladesh	3.1	4 794	154 695 376	Low income
Bhutan	1.9	14	741 824	Lower middle income
India	4.3	52 998	1 236 686 976	Lower middle income
Indonesia	4.7	11 687	246 864 192	Lower middle income
Maldives	3.5	12	338 442	Upper middle income
Myanmar	4.2	2 198	52 797 312	Low income
Nepal	3.3	905	27 474 376	Low income
Thailand	5.5	3 704	66 785 000	Upper middle income

Source: *Global status report on violence prevention 2014.*

Evolution of the Concept of Peace

Peace is a necessity for all nations throughout the world. After the end of World War II, the establishment of the United Nations in 1945 was an embodiment of this universal desire. Peace is a state of harmony and the absence of hostility, war, and direct violence (Mwayuli & Kadenyi, 2009-2010). Hence, peace is the virtue that all people yearn for, especially in societies overwhelmed by violence and conflicts. "Peace is the existence of harmony and the presence of conflict management mechanisms in society. Peace is one crucial value in the contemporary global society where dissonants, disputes, and conflicts abound" (Matui & Mulongo, 2014). The concept of peace has been broadened by the National Council of Churches in the U.S. (1908-1972) from the simple notion of the absence of war to a complete concept that peace involves justice, freedom, and liberation (Anderson, 1984).

Since World War II, wars among nations have lessened while violent internal conflicts become a central concern. Peace in this context, therefore, had two dimensions: the absence of intra-national and international conflicts. However, this conception of peace in merely an absence of war and thus inadequate. Johan Galtung describes this conception as "negative peace" because the underlying points of conflict has not been resolved. Mahatma Gandhi drew a vision of peace that requires not only the absence of war but also the presence of justice and Galtung describes peace with justice as "positive peace" because hostility and violence no longer flourish in it (Mwayuli & Kadenyi, 2009-2010).

During 1950s-1960s when Martin Luther King Jr. and the civil rights movement tried to end the racial persecution in America, peace was understood not only as the absence of war but also the justice of equal rights between blacks and whites, as he claims, "True peace is not merely the absence of tension: It is the presence of Justice" (Mwayuli & Kadenyi, 2009-2010, italics mine). Galtung then describes the situations which seem not to be violent at the surface but deep down inside they contain injustice and oppression as structural violence, which is followed by socio-cultural violence, and ecological violence (Figure 1).

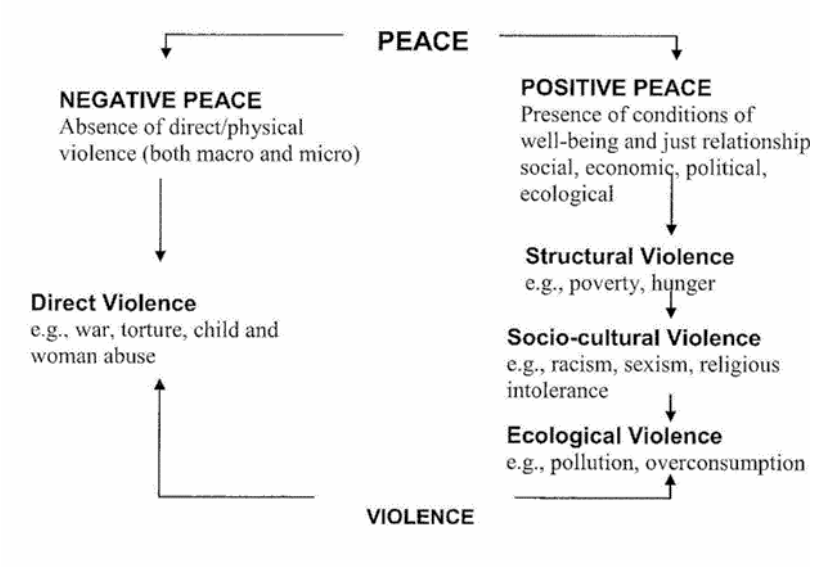

Figure 1: Defining peace and violence

Source: Castro, 2015: 30.

In the educational circle today, "peace" is understood as a condition characterized by the existence of harmony and the presence of conflict management mechanisms in society (Matui & Mulongo, 2014). To be more specific, there are two levels of peace. The first is peacemaking, which involves negotiation to make an initial agreement that aims at resolving immediate conflicts. Although the level of peacemaking can manage immediate conflicts but it does not touch the underlying structural issues. The second is peacebuilding, which attempts to involve economic, political and educational institutions to generate a long-term peace. It is only peacebuilding that can deal with underlying structural issues, to create harmony and real peace on the basis of mutual respect and social justice (Matui & Mulongo, 2014).

'Just Peace'

'Just Peace', as the World Council of Churches defines, is "a collective and dynamic yet grounded process of freeing human beings from fear and want, of overcoming enmity, discrimination and oppression, and of establishing conditions for just relationships that privilege the experience of the most vulnerable and respect the integrity of creation" (WCC, 2012: 5). According to this definition, Just Peace involves acknowledging our own inescapable vulnerability including the vulnerability of other human beings, the Divine, and the created order.

Justice and peace have been ecumenical concerns since the foundation of WCC in 1948. One of the most comprehensive statement on Just Peace was the Declaration of the Vancouver Assembly in 1983: "Peace is not just the absence of war. Peace cannot be built on foundations of injustice. Peace requires a new international order based on justice for and within all nations, and

respect for the God-given humanity and dignity of every person" (WCC, 2012). Because of this definition, a new international order emerged when member churches of the World Council of Churches (WCC) and other Christian organizations have united to seek the way to approach violence and to reject war in favour of Just Peace.

Just Peace invites all people to participate in this common project and to commit themselves to building a culture of peace (WCC, 2011). The launch of DOV during 2001-2010 has helped to make visible the extent of violence and the possibilities to overcome such violence and promote peace. Such a shift away from violence makes the justification of war more difficult. However, merely to prevent war is not enough, it is necessary to promote peace among people and nations (Kerber, 2011). This means that we must move forward on the path to a Just Peace, a path towards the mystery of a peace that passes all understanding.

Most of the church statements on peace by some major denominations call for a theology of just peace as a positive theory of just peacemaking (Brubaker et al, 2008). Yet they realized that a lasting peace must include love, justice, freedom, and liberation. Without these virtues, there can be no peace. Pamela Brubaker et al (2008) state, "We believe the practices of peacemaking are ethically normative because they bring peace, solve problems, promote justice and cooperation in a world whose wars are immeasurably destructive." Then they suggested ten practices of just peace on pragmatic grounds for people of all faiths to follow in order to change the world. "We appeal to all people of good will to adopt these practices and work for them, grounding themselves in a commitment to change our world to peace rather than war and oppression. Each person can base these practices on his or her own faith."

The International Ecumenical Peace Convocation (IEPC) in 2011 encouraged the individuals, groups, and churches to renew their commitment to support non-violence, peace, and justice. The Convocation calls for Peace on Earth, which covers four areas: (1) Peace in the Community, (2) Peace with the Earth, (3) Peace in the Marketplace, and (4) Peace among the Peoples. The rationale is that people cannot have peace on earth without Peace in the community, Peace with the earth, and Peace in the marketplace. We cannot live in peace unless we can control domestic violence, violence against women and children, racism, human trafficking, ethnic violence, and violence against the creation (Kerber, 2011). Thus the Convocation went far beyond classical understanding of peace towards the Ecumenical Declaration of Just Peace. This declaration makes clear that the concept of Just Peace goes beyond the opposite of "Just war". It involves a paradigm shift not only in method but also in attitude away from violence towards the non-violent resistance (Kerber, 2011)

Many scholars working independently on a just peace theory hold an agreement on the following major themes (Brown, 1996): (1) A Just Peace is more than the absence of war; (2) The divine revelation directs Christians to promote

peace in communities: (3) Christians need to make common peacemaking with people of all faiths; and (4) the hallmark of peacemakers are the communities of hope and justice. Guillermo Kerber (2011) comments from his ten-year experience in overcoming violence that in the real life situations, various aspects of violence and peace are intertwined, so only a holistic approach can effectively respond to these entangled challenges. Thus the institutions like colleges, universities, and the churches should respond to this complicated issue in a more comprehensive way to overcome violence as peacemakers.

'Peace with the Earth'

The world today confronts many natural disasters, which challenge the life and wellbeing of humanity. Environments are being exploited by human beings resulting in the depletion of natural resources, deforestation, soil erosion, and the climate change. These factors are related to ecological violence. Ecocide, the death of nature, is the extension of that violence into nature (Kerber, 2011). To address these ecological crises, it is necessary to go beyond scientific methods towards spiritual, social, and cultural transformation towards the spirits of socio-cultural and ecological concerns. It is then that Peace with the Earth begins.

To elaborate on the theme 'Peace with the Earth', WCC's Peace Convocation in 2006 declared that the rationale for this theme is: "Peace on earth includes peace with the earth. Human beings are called to take responsibility for nature. Today's challenges in regard to ecology, climate change and natural resources make it urgent to consider our views and actions" (Kerber, 2011). The questions are: What can we do to better care for creation? What can we do on both the personal and the collective level? Kerber suggests that this requires a deep change in the way human beings place themselves in front of creation instead of placing themselves as part of creation. We need transformation of mind to the way we relate ourselves with the nature as it is included in the divine will of peace. Nature is groaning and suffering today because of the ecological crisis. This is a vision of peace to be hoped for and restored with faith.

Environmental justice mandates the right to ethical, balanced, and responsible uses of land and resources for the sustainability of the ecosystem. The full meaning of environmental justice covers the fair treatment and meaningful involvement of all people in the development, implementation and enforcement of environmental laws, regulations and policies. This means that everyone can have a safe and healthy place to live, work and play, as there are enough natural resources for all. No one should bear a disproportionate share of the negative consequences of environmental hazards (Mwayuli & Kadenyi, 2009-2010). There are many examples of environmental injustice occurring locally and globally that greatly challenge the integrity of peace. In Kenya, poor communities, slum dwellers, the marginalized are the ones who bear the effect of environmental pollution even though they produce the least waste. In South East Asia, rainforests were replaced by palm oil

trees to supply the West with cheaper ingredients for cosmetics and food. Today, developing countries are suffering from climate change and global warming through flooding and drought while it is the developed nations who produce the most Carbon dioxide and greenhouse gases that cause the hazards of global warming (Mwayuli & Kadenyi, 2009-2010).

A new paradigm of peace education

Education for Peace and justice

Education is the key to peace (Harris, 2002). In the twentieth century, there was a considerable growth in peace education paralleling the increasing social concern of horrific forms of violence—ecocides, genocides, modern warfare, ethnic hatred, racism, sexual abuse, domestic violence. As Maria Montessori declares "Preventing conflicts is the works of politics; establishing peace is the work of education" (Guetta, 2013). Montessori urged teachers to abandon authoritarian pedagogies and replace them with a dynamic curriculum from which students could choose what to study. Harris (2002) supports this idea as peace depends on an education that would free children's spirit, promote love, and freedom. Silvia Guetta adds that it is necessary to redefine peace values and accept that the most fundamental one is the human dignity. As such, all people—children and adults—should be educated to appreciate this fundamental value in their own lives and in the development of humankind (Guetta, 2013).

Harris (2002: 4) comments that the goal of peace education is to create a condition of peace in a society where "citizens can freely share concerns, be productive, have creative use of their time, enjoy human rights and manage conflicts without direct violence." Peacebuilding's ultimate goal is that people can maintain among themselves the intrapersonal and interpersonal peace, and also maintain peace among groups and societies (Matui & Mulongo, 2014). However, peace is not only related to organizational principles but it is also rooted in the heart, mind, and character of individuals. It is therefore necessary for peace educators to develop a curriculum that cultivates the character and the mind of peacebuilder (Walsh, 2014). Peace education can further change people's mentality especially in the spirit of tolerance in order to be able to respect the human rights of others. Peace education develops specific competencies in conflict management and resolution through dialogue and encounter. In addition, peace education should also include environmental and ecological concerns in the curriculum (Guetta, 2013).

Logically, education for Peace with the Earth requires the emphasis on the key principles of Just Peace—to care for the precious gift of creation and to strive for ecological justice. For Christians, this is a response to the call to repent from wasteful use of natural resources and be converted on a daily basis. Leaders should add in their Christian education the proper use of natural resources to preserve the environment from the threats of climate change and pollution. Peace educators should teach people around the world

to learn to live in ways that allow the entire earth to grow peacefully. Promote "Green University", "Eco-Congregation", and "Green Churches" to activate ecological concern in the mind of people. In the international level, we need to support the implementation of international agreements and protocols of Peace with the Earth in the government and the private sectors. Then we can hope for a more inhabitable earth, not only for human beings but also for all creatures today and for the future generations to come (WCC, 2012).

Theological education needs to tailor itself toward the needs of Peace with the Earth and provide a new paradigm of peace education. In this paradigm shift, peace educators need to reassess the responsibility to take good care of the environment. The biblical passage on the Creation of Man in Genesis 1:28-31 implies that God wants human beings to have a balanced interrelationship with the environment. The Creator assigns pcople and woman to be in charge of the earth, to preserve and not to destroy it. Human beings depend on the environment for food and living in the ecosystem. Thus, the emphasis is put on the interdependence of people, animals, plants, vegetation, atmosphere, and water supply. Theological education should help people to realize that in the ecosystem, anything that one being does to another has impact not only on that particular being but also on all other elements as a whole (Mwayuli & Kadenyi, 2009-2010).

Building communities of peace for all

Although the ecumenical church has started and continued its role and functions on Just Peace, we also recognize the necessity to seek collaboration with other faith communities in order to move along this new paradigm together. It is not possible to overcome violence without recognizing the contributions of followers of other religions. As a matter of fact, all theological reflection have to take place in today's plural societies (WCC, 2011). The scopes of Just Peace and Peace with the Earth have to be broadened to include all faiths—Christianity, Buddhism, Hinduism, and others—to move together to do justice to all creation in nature and bring peace on earth.

The great religions of the world carry powerful potentialities for peace in their message and practice. However, peace is not just an abstract word; rather, it needs action and commitment. All religions can organize such activities as peace education in schools, seminars and discussions, prayer meetings for peace, concerts for peace, and distribution of peace literatures (WCC, 2012). By so doing, the flame of hope in the possibilities of religions uniting around the common good of humankind is ignited everywhere. The best known international organization dedicated to interreligious peace work is the World Conference of Religions for Peace known as "Religions for Peace-International," which was founded in 1970 as the largest international gathering of the representatives from the world's

greatest religions with the aim of promoting peace in the world (WCC, 2012).

Interestingly, the theme "Building Communities of Peace for All" of the 12th general assembly of the Christian Conference of Asia (CCA) affirmed that peace is possible in Asia despite its diversity and plurality. As H. S. Antone (2005) comments, "The theme affirms that there can be peace in pluriformity, not in uniformity; in variety, not in homogeneity; and that peace is the key to a meaningful life together in Asia. "In spite of our Asian differences, our communities are somehow bound by a common vision of peace, dignity, security, and fullness of life for all".

As poverty and economical oppressions are still our major problems in Asia, the church and educational organizations should aim to build a community of faith and love for all kinds of people as a "life-affirming world for the poor and powerless" to promote equality in society. As Cain H. Felder claims, "The church has been an advocate for the poor and downtrodden for whom, paradoxically, life is frequently more sacred than it is for the rich and powerful. The New Testament world and its apocalyptic is a world of hope—a life affirming world for the powerless, the poor, the exploited, but it is also a world to which the wealthy/powerful are invited" (Felder, 1985-1986).

Our world needs a spiritual awakening and a paradigm shift. Each religion has its own essential core consisting of truth and love that can lead us beyond conflicts towards mutual love and cooperation. The goal of Just Peace is not religious syncretism but the unity in diversity in truth and love as one community on this planet earth. Although we live in a multi-religious world, but we can collaborate in opening a new chapter in interreligious relation for the wellbeing of humanity and all created orders in this world.

Just peace practices

Education for peace is more than mere instruction in the strategies of work for peace. Rather, it is spiritual formation of character of peacemaker, who engages in the practices of peace, and learns to care for the earth as a way of cultivating peace. In other words, peace education is not simply acquiring certain items of knowledge; it is about formation of character in everyday life practice (WCC, 2012). To practice the new paradigm of peace, each of us must play a part. We must become the persons who live for the sake of others: First, we should live unselfishly; and second, we should seek reconciliation, harmony, and cooperation in all situations (Kabbah, 2009). As Mary N. Getui says, "Reconciliation through justice and peace will impact on the wider world if achieved and won at personal level, in the heart as it were" (Getui, 2008). To accomplish this, we basically need a recognition of Creator God as the source of life from whom all bounties and blessings flow to all people. We also need a recognition and establishment of a personal relationship between God and the individual. Then we should commit ourselves to promote harmonious co-existence with all humans and creations in our environment (Getui, 2008).

The World Council of Churches (2012) recommended some guidelines for Just Peace practices:

1) Being a church of peace

The challenge is to be a church of peace by rediscovering, redefining and affirming the churches' role not only to advocate peace but to practice and teach peace. Church leaders and members should walk in solidarity with the oppressed and to challenge the perpetrators of injustice.

2) Peace-training programs for young people

Training can be done through activities, games, dramas and creative arts that relate to real-life situations. Training through games and mock scenarios can teach lessons that are remembered. Youth learn to cooperate and to react differently when in conflict. They are encouraged to respect others' opinions especially in multi-ethnic, multi-religious situations.

3) Healing of Memories

Healing of memories is a key component for building Just Peace. Training can be designed to heal the pain and burden of memories of past conflicts. Those who are trained can then serve as channels of hope and recovery for others. This training should be focused on emotional and personal responses rather than intellectual responses.

4) A healthy life-style program

The healthy life-style program is designed to reach out to young people who are illiterate, have no skills or jobs, and are on the wrong side of the law. This program empowers the young people by giving them basic education, computer skills, visual communication skills and opportunities to develop their other talents. The youth will be more confident and their self-worth will be enhanced to help them believe that a better world is possible.

Conclusion

This articles argues that a new paradigm of peace education toward Just Peace and Peace with the Earth can contribute to peacebuilding in the world today. Yet peace education is not only related to principles or theory but also related to the change of heart and mind of people, expressed in behaviour and actions. It is only transformation of the heart that can transform conflict in any forms. Promoting the spirit of tolerance is essential to enhance the recognition of human dignity and rights. Peace education should involve environmental and ecological concerns to promote environmental justice. Religious and educational organizations have to bring peace education in this new paradigm into practice in all kinds of projects and activities to promote justice and peace. This most important arena of peace education and peacebuilding in our concern is the South East Asia region in the atmosphere of insurgencies, conflicts, political violence, and natural disasters including ecological crisis. Some guidelines to bring Just Peace into practices are: Being a church of peace, peace-training programs for young people, healing of memories, and a healthy life-style program. It is our hope that this new paradigm of peace education will enable us to build the communities of peace, justice and harmony in the world for people and the creation today and for those of the next generations to come.

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2. The manuscript should be written in Microsoft Word format.

3. The font face of Times New Roman will be used throughout the manuscript. The font size 12 will be used for body text and font size 14 bold for title of paper. First letter of each word in the title appears in upper-case whereas the others in lower-case.

4. Authors' name(s) will be written at the top right corner after the manuscript' title, follow by the symbol * and write the footnote included authors' name(s), authors' position(s), organization(s), and contact email.

5. There must be an abstract and at least three keywords including in the manuscript and must not exceed 300 words or one A4 page.

6. References must be written in APA style.

7. Sections of the manuscript must be included : Introduction, review of literature, methodology, findings, discussion, conclusion/recommendations.

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Example of Research Article

Roles of Travel Incentives on Employee Motivation and Performance

Dr. Nucharee Supatn[1]

[1] Assistant Professor of Department of Management, Martin de Tours School of Management and Economics, Assumption University

Abstract

Travel incentive is a type of the organizational reward that includes individual business meeting, group travel to offsite business meetings, as well as the travel and tours to any places outside the office. The influences of three factors related to travel incentives i.e. destination image, need for travel, and self-congruity on employees' perceived value on the travel incentives, their work motivation, as well as their job performance were tested in this research. Questionnaire survey was conducted. The 418 sets of data were collected from the employees of the firms located in central business districts. The structural equation modeling was performed to determine the relationships among major constructs. The results indicated that destination image influenced perceived value and job performance. Need for travel influenced both work motivation and performance of the employees. Self-congruity influenced perceived value and work motivation. Perceived value could influence work motivation. Finally, work motivation was found to influence job performance of the employees.

Keywords : Perceived Value, Destination Image, Need for Travel, Work Motivation, Job Performance

Example of Academic Article

An Integrative Literature Review of Global Nursing Ethics

Yoshimi Suzuki[1], Rie Sayama[1]

[1]Faculty of Nursing, Toho University

Abstract

Objectives : The purpose of the integrative literature review is to investigate the literature concerning GNE from the viewpoint of the kind of literature, the countries where the primary authors live, and the major topics related to ethics. We then will generalize on the present condition of GNE. **Method :** Our review was based on the methodology of Cooper's integrative review. We searched the literature of the last ten years using the Pubmed database, CHINAL, and Japana Centra Revuo Medicina. 86 literatures that met our criteria were analyzed. **Findings :** (1) 53 out of the 86 literatures contained "Information". (2) Regarding where the primary authors live, 42 live in the United States, 11 in the United Kingdom, and seven in Canada. (3) The numbers of major topics reviewed were : 1) Nursing ethics between each country, (a) 21 ethical issues related to immigration of nurses, (b) ten related to global nursing cooperation, (c) seven regarding comparison of nursing ethics between countries; 2) nursing ethics on a global scale, (a) 12 related to interpretation and use of global code of ethics for nurses, (b) 11 related to ethical consideration in global nursing research. **Implication :** (1) This research indicates that the knowledge of GNE has been spreading. Although the importance of GNE has been recognized, future research may be required. (2) The top three authors are from English speaking countries indicating that geographical bias exists in the countries that deal with GNE. (3) GNE depends on the context, so, it is necessary to pay attention to where and how they are used.

Keywords : Global, International, Nursing, Ethics, Literature Review

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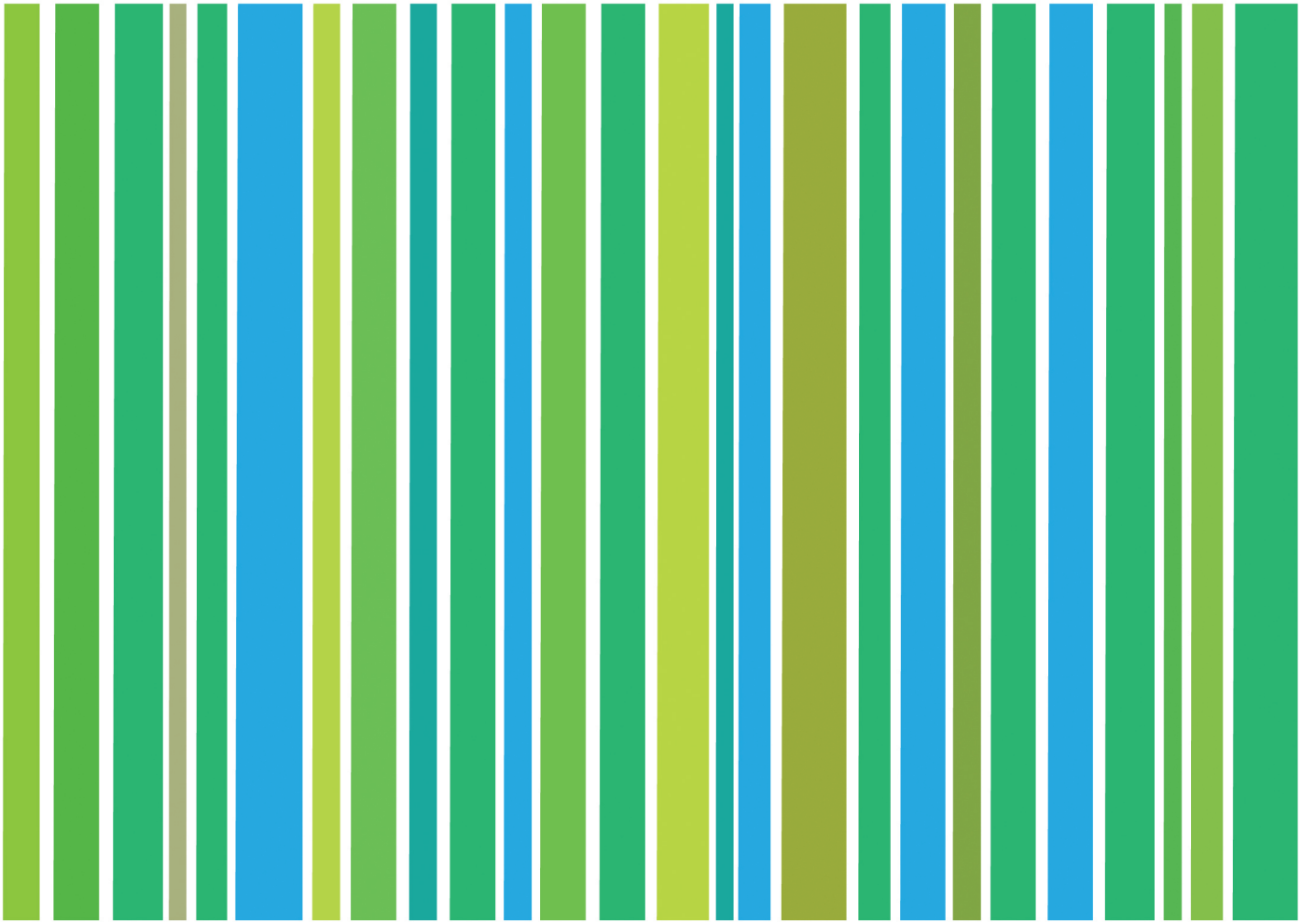

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