ORIGINAL ARTICLE

A PSYCHOSOCIAL OCCUPATIONAL STRESS MODAL AMONG ACADEMIC EMPLOYEES IN THAI GOVERNMENT UNIVERSITIES UNDER JOB CONDITIONS

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ABSTRACT

Psychosocial occupational stress is one of the health hazards in the workplace in the view of occupational health. The aim of this study was to analyze a psychosocial occupational stress model among academic employees in Thai government universities under job conditions, Thailand. Primary data were collected from 500 academic employees in Thai government universities using stratified random sampling. The relationship between stress and tasks among academic employees in Thai government universities under normal job conditions was verified using a psychosocial occupational stress model. The results found that teaching and researching tasks had a direct effect on stress with standardized regression weights of 0.279 and 0.186, respectively (p-value < 0.01). In addition, teaching tasks had a negative relationship with academic service tasks with standardized regression weights of -0.199 (p-value < 0.01). At the same time, teaching tasks also had an indirect effect on stress through academic service tasks. Academic service tasks had a direct effect on stress with standardized regression weights of 0.098 (p-value < 0.05). By contradiction, the cultural preservative task did not have direct effect on stress (no significance). In addition, this model under normal job conditions is an appropriate model to describe the stress among academic employees in Thai government universities under job conditions because it indicated a very close fit and an excellent goodness of fit index. This psychosocial occupational stress model displayed that teaching tasks had the most direct effect on stress among academic employees in Thai government universities under job conditions.
***Keywords**: Psychosocial model, occupational stress, academic employees, job conditions, Thailand*

INTRODUCTION

The economic crisis of 1997 affected economies and created massive worldwide unemployment globally[1]. It led to a high suicide rate, mental health problems (e.g. stress crisis, anxiety, and depression) and physical health problems (e.g. hypertension, heart disease, and hyperlipidemia). Reports from the department of mental health, Ministry of Public Health in Thailand indicated that in 2008, Thailand's suicide rate was 5.7 per 1,000 Thai citizens and a high stress level (34%) including working population[2]. Unfortunately, in 2012, high levels of stress and mental health problems were still being recorded, especially, in the central region of Thailand and Bangkok[3-5]. In Thailand, the economic crisis led to the adjustment of employment in all sectors (e.g. service, industrial, government sectors). The Thai government sector changed the employment system through job and environmental conditions after the economic crisis in 1997. In 1999, Thai government policy revoked all civil servant positions in government universities. The aim was to decrease health expenditure in the government sector and to create incentives for high-performing persons to attain lecturer positions in government universities.

This resulted in the forming of new government official types that were called by different names (e.g. government employee, university employee, temporary employee etc.) that related to social class, which led to social and health inequity. Indeed, there was the forming of new government official types that replaced all civil servant positions. Nevertheless, their social status did not have all concrete laws under the labour law of Thailand. It means individual types of employment not having separate regulations. Later, the forming of new government official types became associated with job conditions and wages that were different in each university, and this led to job insecurity and lack of academic freedom of choice among academic employees who still work in Thai government universities because of politics within their universities. Several government universities had different potential. Academic employees in universities seemed to be suffering from job stress/ occupational stress. In 2012, university employees called for help on the Commission on Higher Education Committees, which had asked the previous Thai government to

change the status of these employees from civil servant to employees in universities. They gathered by social network as an academic movement of leaders of academic employees from the Commission on Higher Education Committees and Ministry of Interior in the Ministry of Education, Thailand. This problem experienced by academic employees in universities, who were referred to as the "brain of Thailand" needed a solution to prevent a brain drain in the future. In 2012, the Yingluck policy on the increase of wage and salary of civil servants led to job conditions that greatly challenged academic employees in universities[6].

A Thai research work into the causal relationship, which influences occupational stress among male academic university employees in Thailand, found that job and environmental condition had the most direct effect on stress while variables such as family support and periods of duty were occupational stress at the low level[7]. The most significant causal variable was job and environmental condition related to occupational stress among male academic university employees in Thailand[7]. Moreover, a Thai research work into the causal relationship, which influences occupational stress among academic university employees of Thailand, found that job and environmental conditions had a direct exogenous relationship with occupational stress the most[8].
Dimensions related to occupational stress/ job stress were divided into four tasks (e.g. teaching, research, academic service and culture preservation)[9].

In this research, an applied concept was public health in the field of occupational health, especially, psychosocial health hazard and social determinants of health perspective, especially, job conditions[10-12].
Public health in the field of occupational health was divided into four dimensions: physical, chemical, biological and psychosocial dimensions[13-15]. The stress causes in the psychosocial dimension occurred as a result of physical work condition, workload, role of the individual in the organization, human interrelationships, career development and job responsibility[14, 15]. Thai researchers in the past did not play attention to study the psychosocial dimension. However, Thai research related to some occupation with stress by mixture of public health and social determinants of health perspective. For example, Thai contract farmers found that there was a direct relationship between stress and globalization (i.e. transnational corporations and transnational economics). The modelling revealed that globalization (i.e. transnational corporations, transnational economics) had a direct effect on farm worker stress, and transnational practices showed weak associations among Thai state regulation, Thai state social protection, Thai market, land holding and technology variables and their effects upon stress by indirect effect[16]. Meanwhile, farmers and Thai farm workers also suffered from occupational stress resulting from globalization[17, 18].

Moreover, social determinants of health perspective discussed poverty[19-21], social inequity[15, 21, 22], marginalization[21], housing and environment[21], job conditions that led to stress[23-25] and social differentiation based on health equity[26]. Job conditions (e.g. workload, wage, responsibility, job insecurity etc.) are an important issue in the global era affecting changes in lifestyle and the job system among occupations associated with occupational stress[27-34]. The working hypothesis of this research is that an increment of work in all tasks (e.g. teaching, researching, academic service and cultural preservation) leads to psychosocial occupational stress among academic employees at Thai government universities under job conditions.

The operational definitions for this research consisted of (1) Occupational stress is a result of stress, tension, lack of satisfaction and pressure among academic employees in Thai government universities under job conditions. Its measurement is the Suanprung Stress Test or SPST-20[35]. This test was based on 20 items. The latter is a standardized stress test of the Department of Mental Health, Ministry of Public Health, Thailand. (2) Academic employees at Thai government universities are academic employees in universities after a change in Thai government policy from 2000 to 2015. Their salary comes from both government subsidy and revenue of each university. (3) Job conditions are workload conditions that amount to at least 35 job tasks/week for academic positions in Thai government universities. It is divided into four tasks (e.g. teaching, researching, academic service and culture preservation tasks). (4) Teaching task is quality and quantity of teaching in Thai normal educational system according to the requirements of each university (e.g. hours for teaching, quantity of teaching etc.). (5) Researching task is quality and quantity of researching in Thai normal educational system according to the requirements of each university (e.g. research for local, policy, industrial development, classing research etc.). (6) Academic service task is quality and quantity of academic service in Thai normal educational system according to the requirements of each university (e.g. guest speaker, guest lecturer, peer review, dissertational committee, editor etc.). (7). Cultural preservative task is quality and quantity of preserving Thai culture in the normal Thai

educational system according to the requirements of each university.

METHODOLOGY

Research population

The population of this cross-sectional research consisted of academic employees at Thai government universities (500 cases) in all regions of Thailand who were academic employees currently in a transition phase from the government policy in 2000 to the present new one (in 2015), and who had experience with the changing of government policies affecting government universities in Thailand.

Sampling method

The sampling method was stratified random sampling. It involved the division of the population into smaller groups. It was known as strata. The first strata comprised the total number of government universities in Thailand, both 49 new universities and 24 original that were divided into two groups. A random sample from both groups was taken from 10 new universities and 6 original universities among academic employees in each university. A second strata comprised a random sample of each stratum (both academic employees in new universities and original universities) and was taken from a number proportional to the stratum's size when compared to the population. Hence, academic employees in this research study totaled 500 cases who worked for both the new universities and the original universities. The research was conducted by the quantitative method.

The sample size

In this research, the sample size by formula ($N = P(1-P) Z^2 / e^2 = 0.5 \times 0.5 \times 3.84 / 0.0025$) were at least 384 cases. But the total sample size of this research were 500 cases to decrease error estimation.

Research instruments

Instruments used in this research were the questionnaire which contained of 42 closed items and an open item (e.g. You have fact/ suggestion about psychological occupational stress among academic employees at Thai government universities under job conditions or not, and how?). Total items were 43 items. The measurement of instruments consisted of general demographic variables, teaching task variables, researching task variables, academic service task variables and cultural preservative task variables among academic employees at Thai government universities under job conditions. General demographic variables consisted of 6 items. Teaching task variables, researching task variables, academic service task variables and cultural preservative task variables among academic employees at Thai government universities under job conditions consisted of 16 items and an open question. By addition, stress variable by using the Suanprung Stress Test[35] of the Ministry of Public health in Thailand (SPST-20), consisted of 20 items. These details are included as relevant:

(1) The general demographic instrument was based on six items (i.e. name and province of workplace; age; sex; period of duty (year); education; salary).This level of measurement was nominal, ordinal and interval scales.

(2) The teaching task instrument was based on 4 items (i.e. You had lower hours of standard for teaching according to the requirements of your university; Your university had calculated teaching tasks equal to the other universities; You had spent time on preparations for teaching; You had quantity of teaching task).

(3) The researching task instrument was based on 4 items (i.e. You had lower hours of standard for researching according to the requirements of your university; Your university had calculated researching tasks equal to the other universities; You had spent time on research and preparing for lessons; You had quantity of researching tasks).

(4) The academic service instrument was based on 4 items (i.e. You had lower hours of standard for academic service according to the requirements of your university; Your university had calculated academic service tasks equal to the other universities; You had spent time for academic service on preparations; You had quantity of academic service tasks).

(5) The cultural preservative instrument was based on 4 items (i.e. You had lower hours of standard or cultural preservation according to the requirements of your university; Your university had calculated cultural preservative tasks equal to the other universities; You had spent time for cultural preservative on preparations; You had quantity of cultural preservative task). These items of teaching, researching, academic service, and cultural preservative tasks were answered using a 4-point Likert-type of scale of none (coded as 1), less (2), moderate (3) and the most (4). The items of teaching, researching, academic service, and cultural preservative tasks were summed together to form an additive index which had a Cronbach's Alpha reliability coefficient of 0.90, 0.88, 0.84, and 0.82, respectively.

(6) The stress instrument was based on 20 items (i.e. fear of error working, not meeting work or school goals, family conflict over money or household shores, concern about toxic substance or environmental pollution in air, water, noise and earth, feeling of competition and comparison, not enough money to pay, tight muscles or muscular aches, tension headaches, back pain, change in

appetite, migraine, anxiety, frustration, anger and irritation, feeling blue or depressed, poor memory, mental confusion, difficulty concentrating, fatigue, feeling tired, catching many colds). Each item of stress variable was answered using a 5-point Likert-type of scale of none (coded as 1), slight stress (2), moderate stress (3), more stress (4), and the most stress (5). Total stress score had four levels. These levels were mild stress (code as 1=0-24 scores), moderate stress (code as 2= 25-42 scores), high stress (code as 3= 43-62 scores) and severe stress (code as 4= ≥ 63 scores). The items of stress variable were summed together to form an additive index, which had a Cronbach's Alpha reliability coefficient of 0.88.

Data collection procedure

Verification of the data accuracy was checked in terms of content and construct validity by five professors. Content and construct validity of questionnaires were accepted. Then, questionnaires were estimated for reliability of no less than 0.8 by SPSS/PC+ for Windows to find Cronbach's Alpha Coefficient. It was found that the reliability of predictor variables and stress were 0.87 and 0.90, respectively. Then, participants replied questionnaire. After the completion of the questionnaire were analyzed by statistical analysis.

Ethical Considerations

The research was approved by the Ethics Committee for Human Research at Mahidol University, Thailand. Its ethic research code was COA. No. 2014/313.0711. Besides, its Thai Clinical Trials Registry (TCTR) in Thailand identification number was TCTR20141124002.

Statistical analysis

The general demographic data were analyzed by frequencies and percentages. Data for teaching, researching, academic service and culture privative data were analyzed by minimum, maximum, percentages, means and standard derivations using the SPSS program (version 19.0). The total psychosocial occupational stress model was verified by path model to establish the relationships among the variables measuring stress among academic employees at Thai government universities under job conditions. The statistic program for analysis the path model was used to analyze R square and measure the goodness of fit of the model to consider individual parameter tests (i.e. direct influence, and indirect influence) of the independent variables on the theorized dependent variables using M-plus program version 5.2. The list of indices for measurement of fit of the Path model in the M plus program was: chi square ≠ 0, degrees of freedom ≠ 0, p-value >0.05, CFI >0.95, RMSEA <0.07, and SRMR <0.05.

RESULTS

There were a total of 500 respondents in the research of which 70 % were female and 30 % male academic employees at Thai government universities, respectively. Sixty percent of academic employees at Thai government universities worked in original universities. At the most, 60% had received a master's degree. In terms of the period of duty, 40% worked for 6-7 years. Salary in 2014 was 25,001-30,000 baht/ month for 50% of the respondents (Table 1).

The mean and standard deviation for the teaching task, researching task, academic service task, cultural preservative task and stress level variables were 1.656±0.866, 2.928±0.921, 2.870±0.969, 2.118±1.214 and 3.020±1.038, respectively. The minimum and maximum of those variables were coded as 1 (none), and 4 (the most). While the minimum and maximum of stress level variables was coded as 1 (none) and 4 (severe stress) (Table 2).

The teaching task variable showed a positive skewedness of 1.172, and a kurtosis of 0.471. But the cultural preservative task variable presented a positive skewedness of 0.588 and a negative of -1.260. Moreover, the researching task, academic service task and stress level variables all displayed negative values for both skewedness and kurtosis. The negative skewedness of the researching task, academic service task and stress level variables was -0.675, -0.294, and -0.828, respectively. The negative kurtosis value of the researching task, academic service task, and stress level variables was -0.276, -1.030, and -0.487, respectively (Table 2). Covariance among academic employees at Thai government universities is shown in the table (Table 3) below.

A psychosocial occupational stress model that emerged from this research was based on goodness of fit. Test of model fit indicated the most accurate values among academic employees at Thai government universities under job conditions: the Chi-Square of 0.105 (p-value = 0.7464, df =1), CFI of 1.000, TLI of 1.088, RMSEA of 0.000, SRMR of 0.003 indicated a very close fit. Furthermore, the use of variables could explain the stress change by 10.7 % (R square = 0.107, p <0.01).

Teaching and researching tasks had a direct effect on stress with standardized regression weights of 0.279 and 0.186, respectively (p-value < 0.01). In addition, teaching tasks had a negative relationship with academic service tasks with standardized regression weights of -0.199 (p-value < 0.01). At the same time, teaching tasks also had an indirect effect on stress through academic service tasks. Academic service tasks had a direct effect on stress with standardized regression weights of 0.098 (p-value < 0.05). However, cultural preservative tasks did not have a direct effect on stress (no significance) (Figure 1).

Table 1: Number and percentage of general demographic data among academic employees in Thai government universities under job conditions (N = 500)

General demographic data	Number (cases)	Percentage
Number of academic employees : New universities	300	60.00
: Original universities	200	40.00
Age (years) : 24-33	100	20.00
: 34-43	300	60.00
: 44-53	100	20.00
Sex : Female	350	70.00
: Male	150	30.00
Education : Master degree	300	60.00
: Doctoral degree	200	40.00
Period of duty (years) : 0-1	10	2.00
: 2-3	30	6.00
: 4-5	82	16.40
: 6-7	200	40.00
: 8-9	128	25.60
: 10-11	36	7.20
: 12-13	14	2.80
Salary (baht) : 15,001-20,000	18	3.60
: 20,001-25,000	152	30.40
: 25,001-30,000	250	50.00
: 30,001-35,000	80	16.00

Table 2: Data statistics among academic employees in Thai government universities under job conditions (N = 500)

Variables	Mean	Minimum	Maximum	S.D.	Skewedness	Kurtosis
Teaching task	1.656	1 (None)	4 (most)	0.866	1.172	0.471
Researching task	2.928	1 (None)	4 (most)	0.921	-0.675	-0.276
Academic service tasks	2.870	1 (None)	4 (most)	0.969	-0.294	-1.030
Cultural preservative tasks	2.118	1 (None)	4 (most)	1.214	0.588	-1.260
Stress level	3.020	1 (slightly stress)	4 (severe stress)	1.038	-0.828	-0.487

Table 3: Covariance among academic employees in Thai government universities under job conditions (N = 500)

Variables	Academic service task	Stress	Researching task	Cultural preservative task	Teaching task
Academic service task	0.937				
Stress	0.035	1.076			
Researching task	-0.043	0.161	0.847		
Cultural preservative task	-0.005	0.110	0.284	1.472	
Teaching task	-0.163	0.221	-0.063	0.007	0.750

DISCUSSION

This research study found that most of the respondents were original academic employees at Thai government universities and most had completed a master's degree, which they did overload teaching task in the Thai educational system according to the requirements of each university (e.g. hours for teaching, quantity of teaching etc.) associated with high stress level (Table 1, 2). Mean and standard deviation of stress level was 3.020±1.038 (Table 2). It indicated that academic employees at Thai government universities under job conditions were highly stressed. This indicates that these persons would probably react with high stress. They will probably not be able to adapt and adjust to a decrease in stress in a short period, and this was the danger. If it is not alleviated, it will turn into chronic stress, and later lead to various diseases[35].

According the occupational health perspective[15] and social determinants of health, psychosocial health hazards under job conditions lead to both physical and mental health problems[11, 12, 25]. Figure 1 indicates that teaching tasks, which are important tasks among academic staff in universities worldwide, had the greatest direct effect on stress. Researching tasks had a high direct effect on stress. The other variables did not represent outstanding tasks among academic employees at Thai government universities. They showed weak relationship to stress because they were not major tasks for academic staff in universities. These findings are consistent with those from previous studies[28-30, 34]. Mostly, various research focused on teaching and researching tasks among academic staff in universities more than on other tasks. Both teaching and researching tasks related to workload, responsibility, role overload linked to occupational stress among university teachers in China[28]. In addition, academic staff in universities were affected by job conditions[29] such as excessive workload, insufficient preparation for lectures and difficulties in supervising students' research projects, all of which led to occupational stress[30].

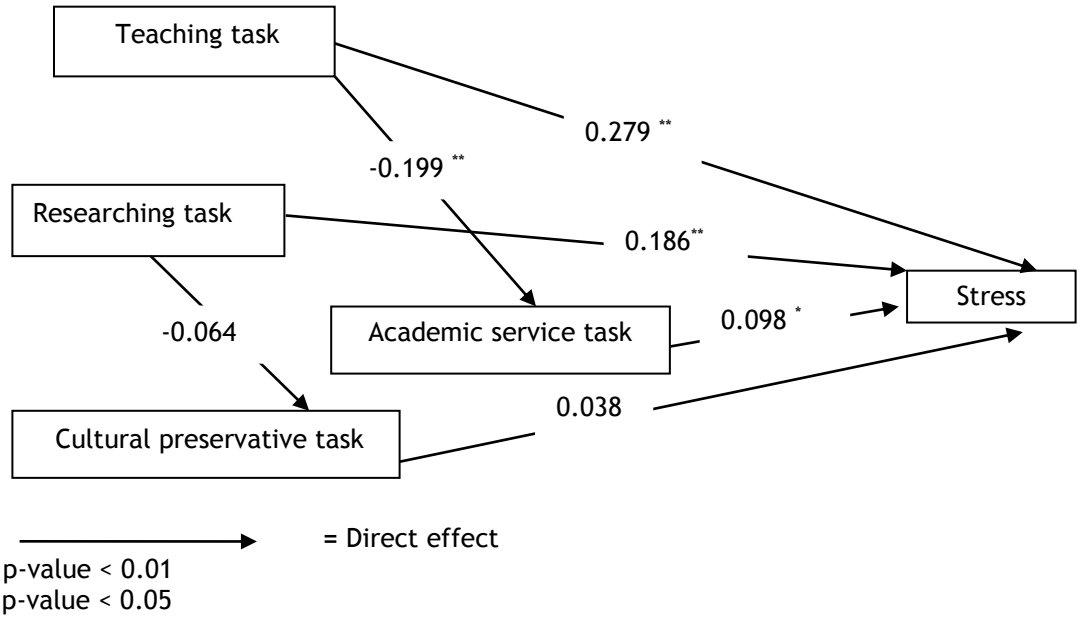

Figure 1 A Psychosocial occupational stress model among academic employees in Thai government universities under job conditions (N = 500)

These research findings in terms of teaching and researching tasks were similar to high workload level, high research quality among academic staff in universities in Pakistan, Tanzania and Nigeria related to occupational stress. Ina qualitative study among academic staff's perceptions of stress as a result of stressors originating from academic work setting in Belgium, 100% of academic staff surveyed complained about workload. Related stress effects were aches in parts of the body, bad emotion, stress and being mentally absent[34]. From previous studies and this present research, it is found that academic employees at Thai government universities, the "brain of the country" suffered from high stress as a result of their occupation. Thai government and administrators of universities should pay attention to the prevention of occupational stress. The strength of this research was in attempting to link public health as a result of occupational health hazards and social determinants of health perspective through a short questionnaire. However, the research had two limitations. The first limitation was about the using the Suanprung Stress Test from the Department of Mental Health, Ministry of Public Health to measure stress among academic employees at Thai government universities under job conditions. The level of stress was remarkably high[35]. In this research, the authors did not use other Thai stress tests to compare with this test. They only used the "Suanprung Stress Test"[35]. This was because the other Thai stress tests did not have unity of occupational stress dimensions. This test were used to measure stress symptoms. This is a measure with high sensitivity, but lower specificity in terms of public health in occupational stress perspective. Hence, results may be both high false-positive and negative. The authors suggest that for future studies a way to measure occupational stress in Thailand under job conditions should be developed.

A second limitation of this result was that only 500 academic employees at Thai government universities in all regions of Thailand were recruited. Therefore, it was not possible to assess if this sample is representative of a larger population among academic employees at Thai government universities. This was because the researchers did not have access to data related to people who were not part of the study. However, the overall outcome showing high rates of stress is consistent with the observation among academic employees at Thai government universities.

A suggestion for future research should give prominence to advanced quantitative (e.g. Structural Equation Modeling or SEM analysis) and qualitative study (e.g.in-depth interviews, observations). Both academic staff and supportive academic staff at Thai universities should be identified for a study on occupational stress and the linkage of work and family conflict too. In addition, the findings suggest that the psychosocial model used in this research highlights the importance of the development of employees' mental health policies and health welfare arrangement by health organization and administers. Decision makers should give more attention to all facets of conditions faced by and the job scope of academic employees at Thai

government universities and other workers under job conditions in the 21st century.

CONCLUSIONS

This psychosocial occupational stress model displayed that teaching tasks had the most direct effect on stress by using the M plus program. In addition, this model under job conditions is an appropriate model to describe the stress among academic employees at Thai government universities because it indicated a very close fit and an excellent goodness-of-fit index. The authors recommend that these issues should be studied further in subsequent studies to confirm the validity of this relationship through both advanced qualitative and quantitative methods.

CONFLICT OF INTERESTS

The authors declare no conflicts of interest in this study.

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