



## **A Study of Causal Relationship of Occupational Stress Among Male Academic University Employees in Thailand**

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### **ABSTRACT**

Staff network from many government universities called recently on the Thai Higher Education Commission to solve their job insecurity, low salary and job and environmental condition stresses resulting from government occupational policy regarding education and occupation. The aim of this study is to investigate the causal relationship of occupational stress among male academic university employees in Thailand. The research conducted in this study was a cross-sectional study among 2,000 male academic employees who worked at Thai government universities in Thailand. The stratified random sampling method was used. Causal variables consisted of wages, family support, periods of duty and job and environmental condition. The effect variable consisted of stress. The results of this study found that job and environmental condition, which is one of the psychosocial dimensions of occupational health, had the most direct effect on stress ( $p < 0.05$ ) while variables such as family support and periods of duty were occupational stress at the low level. The most significant causal variable was job and environmental condition related to occupational stress among male academic university employees in Thailand. Some suggestions for the next research are that greater importance should be placed on psychosocial research in Thailand, especially qualitative method among male academic university employees to confirm these results, and that there should be comparisons between female and male academic university employees.

*Keywords:* Causal relationship, occupational stress, male academic university employees

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### **INTRODUCTION**

There have been major changes in employment condition or job condition in many countries worldwide during economic crisis satiation in 1997 due to

suicide, mental health problems and stress. (Charttananon *et al.*, 1998; Quinlan *et al.*, 2009). Downsizing and restructuring by employers were one of these changes (e.g. the increased use of non-permanent employees and outsourcing). This downsizing and restructuring resulted in the increment of job insecurity, job intensification and multi-tasking (World Health Organisation and the Commission on the Social Determinants of Health, 2008; Benach *et al.*, 2010; Delp *et al.*, 2010). The majority of male employees who were heads of family became unemployed workers from this satiation (Universities staff network, 2013).

## LITERATURE REVIEW

Previous researchers found that nurses, lecturers, doctors and farmers had poor mental health, job stress resulting from downsizing or reorganisation by employers under globalisation (Boyas *et al.*, 2010; Moreno *et al.*, 2010; Caban-Martinez *et al.*, 2011; Hildebrandt *et al.*, 2011; Kaewanuchit *et al.*, 2012; Laws *et al.*, 2012; Kaewanuchit *et al.*, 2015a). Some researchers explained that university teaching among academic staff in universities was found to be a low stress occupation (Wei *et al.*, 2011). However, a Thai study explored occupational stress among female academic university employees and found that job and environmental condition and wages had a direct relationship with moderate stress occupation (Kaewanuchit & Pothong, 2015b).

The Thai government attempted to downsize reorganise the government sector as suggested by The International Monetary Fund (IMF) as a result of the Asian economic crisis of 1997 (Charttananon *et al.*, 1998). This has been part of the intervention efforts put in place up to now. A new policy by IMF was implemented in Thai government universities in 2000. It related to employment and job conditions among academic staff who worked in Thai government universities. A new important government university policy was to decrease the number of civil servant groups who worked in each government university in Thailand. This policy increased the number of academic staff and introduced high wages in government universities but did not have address staff health. Academic staff in universities were a new type of civil servant group. Academic staff in universities holding a first degree were required to sign a contract to work under different job conditions and wages in different government universities without proper labor laws to protect them. Moreover, male academic university employees who were heads of families and who had heavy family commitments ended up suffering from pressure and tension as a result of the heavy workload imposed by their universities (University staff network, 2013). The new policy caused high occupational stress among female and male academic university employees in Thailand. It was associated with a difference in attitude towards staff health in the different universities

(University staff network, 2013). Although occupational stress among Thai male and female academic staff was studied (Kaewanuchit *et al.*, 2015; Kaewanuchit & Pothong, 2015b), the study did not pay sufficient attention to occupational stress among Thai male academic university employees. Recently, university staff from Thai government universities called on The Higher Education Commission, Ministry of Education, Thailand to resolve the problems arising from the education policy that had led to their sense of job insecurity, health inequality and occupational stress (University staff network, 2013). It is important and necessary to study causal relationship of occupational stress among male academic university employees in Thailand because in the majority of families the status of head of the family is held by the male in accordance with the Thai custom of patriarchy.

## **THEORETICAL FRAMEWORK**

There are four dimensions to health hazards, namely, environmental, physical, biological and psychosocial. Occupational stress is a major psychosocial occupational hazard (Commission on the Social Determinants of Health, 2008; Muntaner *et al.*, 2009; Kaewanuchit, 2013a; Kaewanuchit, 2013b). Occupational stress is associated with work-related factors and the job itself. It is divided into individual factor, family factor, social and environmental factor and psychological factor. The theoretical framework of this study concerns the

psychosocial hazard of occupational health related to period of duty and wages as the individual factor, family support as the family factor, job and environmental condition as the social and environmental factor and social determinants of health as the psychological factor.

### *Hypothesis*

Two hypotheses of this study were as follows: (I) wages, job and environmental condition, family support, and period of duty have a direct effect on stress. (II) The variable of job and environmental condition among male academic university employees in Thailand has the most direct effect on stress.

### *Aim*

The purpose of this study was to investigate a causal relationship of occupational stress among male academic university employees in Thailand.

## **METHODOLOGY**

### *Participants*

This study was a cross-sectional study that was conducted among 2,000 male academic university employees at Thai government universities (both original and new university groups). Their positions were permanent and temporary academic university employees in Thailand. They were heads of families/leaders in their universities (1,000 cases/university group).

### *Sampling Method*

This study used stratified random sampling. It links the division of the population into smaller groups. All the participants in the study lived in four regions of Thailand (2,000 cases both original and new university groups). A first strata, there were 49 new university groups and 24 original university groups from government universities from every region in Thailand. Ten groups were randomly select from the 49 new universities and six groups were randomly selected from the 24 original universities. The second strata of random selection then picked out 2,000 male academic staff from both the original and new university groups.

### *Variables and Measurement*

The major factors in this study were individual details (e.g. general demographic data), family support (e.g. dimension of adaptation, resolve, growth, affection and partnership by the family in the APGAR questionnaire), social and environmental factors (e.g. job and environmental condition); these were the independent variables known as causal variables, while the dependent variable, stress, was the effect variable.

The questionnaire used in this study contained 57 questions and was divided into four parts. Part I focused on general data (6 questions), Part II on the job and environmental dimension (26 questions), while Part III was the family APGAR questionnaire (5 questions) (Smikstein *et al.*, 1982) and Part IV was the Suanprung stress test (20 questions) (Mahatnirunkul *et al.*, 1998).

The questions on general demographic data asked for the name of the university, province, sex (code as 1=female and 2=male), education (code as 1= Master's degree, 2=doctoral degree, 3=post-doctoral degree), wages (code as 1=15,001-20,000 baht, 2=20,001-25,000 baht, 3=25,001-30,000 baht, 4=30,001-35,000 baht, 5=35,001-40,000 baht, 6=40,001-45,000 baht, 7=45,001-50,000 baht, 8=>50,000 baht), periods of duty (code as 1=0-1 year, 2=2-3 years, 3=4-5 years, 4=6-7 years, 5=8-9 years, 6=10-11 years, 7=12-13 years, 8=14-15 years). Sex and education used the nominal scale. Wages and period of duty used the interval scale.

The job and environmental variable was measured by six dimensions. They consisted of job task, working hours, quantitative job task, job environment, welfare and job insecurity, respectively. The dimension of job task was associated with teaching task, research task, social service task, Thai culture task, multi-tasking and others. The dimension of working hours related to period of teaching, research, social service, Thai culture and working hours. The dimension of quantitative job task was associated with teaching, research, Thai culture and quantitative job task. The dimension of job environment was associated with items of equipment for doing the job and job environment followed by the concept of occupational health and safety. The dimension of welfare was related to items of welfare equality from government officers, the welfare policy from administration to practise in every dimension and welfare motivation for academic

university employees in universities. Finally, the dimension of job insecurity asked about items of job security in the university, evaluation for working and bonus and period of contract in order to relate all these to the sense of job insecurity. Each dimension and item was measured using the interval scale (code as 1=least, 2=less, 3=more, 4=most). It had an open question related to the relationship of job and environment condition, family, wages and others.

The measurement of family support variable used the family APGAR questionnaire (Smikstein *et al.*, 1982). The latter used the interval scale (code as 0=hardly ever, 1=some of the time, 2=almost always). These were divided into three levels; 7-10=high family support, 4-6=moderate family support, 0-3=little family support.

The scores of the Suanprung stress test were interpreted using stress level and points. The interpretation for the different scales, less stress than the normal level, normal level, moderate level, high level and severe stress, was 0-5, 6-17, 18-25, 26-29, and >30 points, respectively (Mahatnirunkul *et al.*, 1998).

The main measure of predictor variables (e.g. family support, job and environmental condition, wages and period of duty) used in this study was the interval scale in causal relationship.

#### *Data Collection Processes*

Five professors verified the content and construct reliability of this study for verification of the accuracy of this data. The quantitative questionnaire was sent

to the Ethics Committee for Human Research at Mahidol University, Thailand to get documented proof of this human ethics committee and sent to the Thai Clinical Trial Register before the approval. Then, the test and retest reliability of the questionnaires were performed by the researcher. The questionnaires were evaluated to be reliable at no less than 0.8 by using SPSS/PC+ for Windows to find Cronbach's Alpha Coefficient. The reliability of the job and environmental condition, wages, period of duty, family support, and stress variable were 0.80, 0.81, 0.82, 0.80 and 0.90, respectively. Data collection procedure by face-to-face (70% of participants) interview was done by researcher-trained assistant researchers and health volunteers to help in data collection through the process of teaching, approaching participants, explaining questionnaires and giving consent forms to participants. The researcher/assistant researchers gave questionnaires and fixed a date for returning the questionnaires. Finally, the questionnaires were collected in a secret box. At the same time, data collection procedure by social network (30% of participants) was done by email or Facebook to send the questionnaires to participants through the Google documents website. The researcher explained the details of the research through email or Facebook through the university staff network and without giving consent forms to the participants. Completed questionnaires were returned directly to the researcher through email.

*Data Analysis*

Data analysis consisted of numbers, percentages, minimum and maximum scores, skewedness, kurtosis, mean and SD to measure predictor variables on stress among university employees. The relationships of occupational stress among male university employees in Thailand were verified by causal relationship using the M Plus Programme in version 5.2 (Muthe'n & Muthe'n, 2006) to find these causal relationships. It was used to analyse the r square and measure the fit of the model. Individual parameter tests considered the

direct and indirect effect of the causal/independent variables on the effect/dependent variable and the causal diagram.

**RESULTS**

A total of 2,000 participants consisting of Thai male academic university employees completed all the questions for both groups i.e. original universities and new universities. Each university group had 1,000 Thai male academic university employees (50% per a group). Mostly, their educational level was Master's degree holders (60% of all 2,000 cases) (Table 1).

TABLE 1  
General Data Among Male Academic Staff in Universities in Thailand (N=2,000)

<b>Data</b>	<b>Number</b>	<b>Percent (%)</b>
Number of male academic staff in universities : in new universities : in old universities	1,000 1,000	50.00 50.00
Age (years): 24-33 : 34-43 : 44-53	304 980 716	15.20 49.00 35.80
Educational level: Master's degree : Doctoral degree	1,200 800	60.00 40.00
Period of duty (years): 0-1 : 2-3 : 4-5 : 6-7 : 8-9 : 10-11 : 12-13 : 14-15	220 280 250 250 100 400 300 200	11.00 14.00 12.50 12.50 5.00 20.00 15.00 10.00
Wagea (baht): 15,001-20,000 : 20,001-25,000 : 25,001-30,000 : 30,001-35,000	600 400 900 100	30.00 20.00 45.00 5.00

The mean and standard deviation (SD) for the age of Thai male academic university employees was 40±0.50. The mean and standard deviation for period of duty and wages among male academic university employees in Thailand were 10.5±2.202 and 25,001 to 35,000±0.942. The mean for job and environmental condition, family support and stress level of male academic university employees in Thailand were more, some of the time and moderate. The minimum and maximum age of male academic university employees in Thailand was 24 and 53 years old, respectively. The minimum and maximum period of duty among male academic university employees were 1

and 14 years, respectively. The minimum and maximum wages variables among male academic university employees in Thailand were 15,001, and 35,000 baht per month. The age, wages and periods of duty variables showed a negative skewedness of -0.165, -0.157 and -0.032, respectively. The family support, stress and job and environmental condition variables represented a positive skewedness of 0.258, 0.028 and 0, respectively. Job and environmental condition, period of duty, wages, family support, age and stress variables displayed a negative kurtosis of -1.753, -1.353, -1.293, -1.045, -0.526 and -0.105, respectively (Table 2).

TABLE 2  
Statistic Data Among Male Academic Staff in Universities in Thailand (N=2,000)

Variable	Mean	Minimum	Maximum	S.D.	Skewedness	Kurtosis
Age (year)	40.5	24	53	0.500	-0.165	-0.526
Period of duty (year)	10.5	1	14	2.202	-0.032	-1.353
Wages (baht)	25,001 to 30,000	15,001	35,000	0.942	-0.157	-1.293
Job & environment condition	More	Least	Most	0.894	0	-1.753
Family support	some of the time	None	Most	0.686	0.258	-1.045
Stress level	Moderate	Low	Severity	0.920	0.028	-0.105

Based on goodness of fit, the results were accurate for the sample. The values based on Chi square readings were 0.862, p-value=0.3533, CFI=1.000, TLI=1.001, RMSEA=0.749, SRMR=0.002. R-square for waged, family support, stress was

0.501, 0.864 and 0.132 (p value<0.05), respectively. The results for causal relationship of occupational stress among male academic university employees in Thailand are shown in Table 3.

TABLE 3  
Overall Test for Goodness of Fit Among Male Academic Staff in Universities in Thailand (N=2,000)

Criteria	Value
Chi square	0.862 (p-value=0.3533)
CFI	1.000
TLI	1.000
RMSEA	0.749
SRMR	0.002
R square (Wages)	0.501*
R square (Family support)	0.864*
R square (Stress)	0.132*

\* p- value<0.05

TABLE 4  
Direct and Indirect Effect Among Male Academic University Employees in Thailand (N=2,000)

Endogenous/ Exogenous variables	Endogenous variables					
	Period of duty		Family support		Stress	
	Direct effect	Indirect effect	Direct effect	Indirect effect	Direct effect	Indirect effect
Period of duty					0.212*	
Job & environment condition	-0.196*		-0.562*		0.333*	-0.043
Wages			0.396*		-0.073	
Family support	-0.882*				0.216*	

\*p-value<0.05

Job and environmental condition had the most direct effect on stress and an indirect effect on stress with standardised regression weights of 0.333 and -0.043, respectively (p-value<0.05) among male academic university employees in Thailand. Family support and period of duty had

direct effect on stress with standardised regression weights of 0.216 and 0.212, respectively (p-value<0.05). Besides this, the rise in family support resulting from high wages had standardised regression weights of 0.396 (p-value<0.05) (Table 4 and Fig.1).



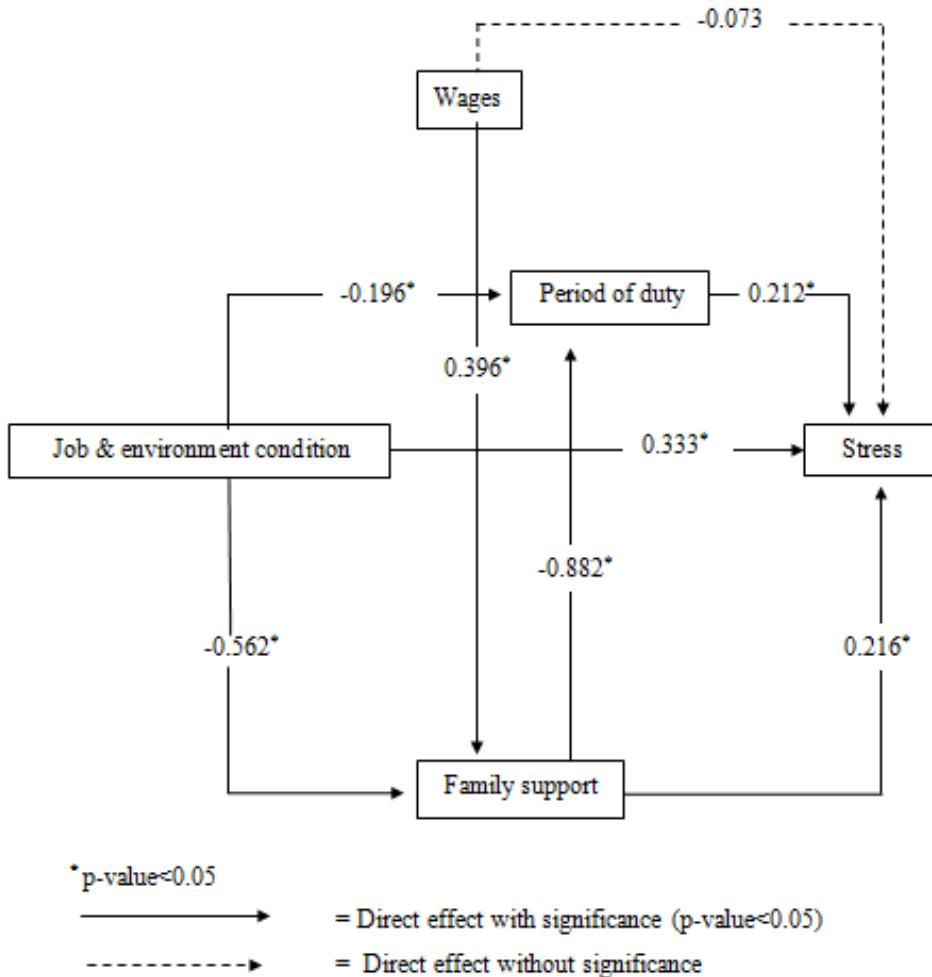


Fig.1: Causal relationship of occupational stress among male academic staff in universities in Thailand (N=2,000).

### FINDINGS AND DISCUSSION

The findings in the perspective of occupational health as a component of public health focused on four dimensions (i.e. physical, biological, environmental and psychosocial dimensions). Occupational stress was one of the psychosocial dimensions in the field of occupational health (Gatchel *et al.*, 2012).

Causal relationship of occupational stress among male academic university employees in Thailand had goodness-of-fit indices that were most accurate for the 2,000 male academic university employees in Thailand. This implied that the important causal relationship due to occupational stress was the condition of job and environmental factors as given by hypothesis II (Fig.1).

The psychosocial hazard in the dimension of occupational health was connected with work-related factors and job task. Period of duty was an individual factor related to occupational stress. Besides this, except for the wages variable, the job and environmental, family support and periods of duty variables had direct effect on stress as given by hypothesis I. This indicated that these factors related to the psychosocial dimension of occupational health in the area of public health. It is associated with the psychosocial hazard of occupational health and social determinants of health in social and environmental factors (e.g. the job and environmental condition). These variables had an effect on occupational stress (Kaewanuchit, 2013a; Kaewanuchit, 2013b).

A major strength of this study is that it applies to questions in the field of public health, such as occupational stress, associated with social determinants of health. The results of this study were consistent with the study of male and female Chinese academic staff in universities. It showed that male and female academic staff were at high risk of succumbing to occupational stress due to the increase in job tasks and research tasks within universities in China (Wei *et al.*, 2011).

The incremental job and environmental condition among male and female academic staff in universities was a psychosocial factor linked to occupational stress (Gatchel *et al.*, 2012; Laws & Fiedler, 2012) while the environmental factor was linked to job satisfaction among

both male and female academic staff in universities (Dağdeviren *et al.*, 2011) and administrators including service employees who worked in universities found that both job and environmental conditions (e.g. a packed timetable and job performance) were factors related to occupation stress at the moderate level (Wei *et al.*, 2011).

The research found that occupational stress level among male academic university employees in Thailand was at the moderate stress level. It implied that moderate stress level of this study could accept to become active at individual level and could not link to severity stress level. However, occupational stress at the workplace can be increased. Individuals should be careful. In addition, male academic university employees who are heads of family/leaders in their universities may sometimes feel pressured from job conditions. They are able to cope using stress management techniques or by relying on social support. However, a qualitative study of this should be done to confirm these results. In addition, a comparison between female and male academic university employees should also be done in the future. This strength of this research study was that it focused on the psychosocial model based on causal relationship. In addition, the findings can provide an explanation on causal relationship related to occupational stress among male academic university employees. They are new employee groups or new type of civil servant in government universities in Thailand resulting from a new Thai government policy after the economic crisis of 1997.

The results of this study showed direct relationship over indirect relationship to stress. The results indicated that independent or causal variables to dependent or effect variable were the good questions to describe the causal relationship of occupational stress among male academic university employees in Thailand. Nevertheless, a limitation to this study was the low budget and delay in budget payment from research funding that proved to be a burden in carrying out this study. These should be looked into to ensure smoothing running of study projects in the future. This study selected only male academic university employees in government universities in Thailand because Thai society practices the patriarchal system, which accepts the male as leader of the family. Participants, who had Master's or doctoral degrees, had more workplace freedom than other groups in universities. In addition, they had family support, and therefore suffered only moderate stress. They make up an important group in the higher social rung of Thai society and are referred to as the "brain of Thailand." The Thai government should pay attention to them before stress leads them to other jobs with low levels of stress in other companies or abroad. This could apply especially to Thai male academic staff in universities, who face high expectations from their families and society in general.

## CONCLUSION

The causal exogenous relationship of occupational stress among 2,000 male academic university employees in Thailand, which had a direct effect on stress the most, was the condition of job and environmental as a psychosocial dimension of occupational health in field of public health ( $p < 0.05$ ). However, wages had a direct effect without significance whereas the causal endogenous relationship of occupational stress, which had a direct effect on stress, was family support, as a family factor, and period of duty, as an individual factor ( $p < 0.05$ ). This showed that the condition of job and environmental, which was a psychosocial hazard of the occupational health perspective, was associated the most in this study with occupational stress among male academic university employees in Thailand.

## ETHICAL CONSIDERATIONS

The quantitative questionnaire used in this study was submitted to the Ethics Committee for Human Research at Mahidol University, Thailand to verify the ethical considerations related to this research before approval was given. This study was a part of a research project, 'A causal relationship of occupational stress among university employees', with the human ethics code, COA. No. 2013/331.2811.

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