

ความเครียดในที่ทำงานของบุคลากร คณะแพทยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ®

กิตติพงษ์ คงสมบูรณ์

Stress in The Workplace: A Report at the Faculty of Medicine, Srinakharinwirot University.

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บทคัดย่อ:

ความเป็นมา: ความเครียดในที่ทำงานเป็นปัญหาที่สำคัญ ทำให้ประสิทธิภาพการทำงานลดลงและยังส่งผลต่อสุขภาพกายและจิตใจ เช่น ภาวะซึมเศร้า อาการง่วงนอนในขณะที่ทำงาน เป็นต้น

วัตถุประสงค์: เพื่อหาความชุกของความเครียดระดับสูงและรุนแรงและปัจจัยที่สัมพันธ์ต่อความเครียดในที่ทำงาน

วัสดุและวิธีการ: บุคลากรคณะแพทยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ ทุกคน จำนวน 1,133 คน ได้รับแบบสอบถามแต่มีผู้ตอบแบบสอบถามจำนวนทั้งสิ้น 740 คน เป็นการศึกษาเชิงวิเคราะห์ แบบภาคตัดขวาง เก็บข้อมูลในช่วงเดือนพฤษภาคม ถึง เดือนกรกฎาคม พ.ศ. 2552 วิเคราะห์สหสัมพันธ์ด้วย Logistic regression ทดสอบสมมติฐานสองทาง $p < 0.05$

ผลการศึกษา: พบความชุกของความเครียดระดับสูงและรุนแรงมากที่สุดร้อยละ 67 ในกลุ่มคนงานและพบน้อยที่สุดร้อยละ 51.2 ในกลุ่มแพทย์ บุคลากรช่วงอายุ 20-29 ปี มีความเครียดระดับสูงและรุนแรงเป็น 1.6 เท่าของกลุ่มอายุ 30-39 ปี บุคลากรที่มีภาวะซึมเศร้าและความง่วงในตอนกลางวันจะมีความเครียดระดับสูงและรุนแรง กลุ่มพยาบาลมีความคิดเห็นในเรื่องสวัสดิการไม่เพียงพอสัมพันธ์กับความเครียดที่เพิ่มขึ้น

สรุป: คนงานและบุคลากรอายุ 20-29 ปี มีความเครียดมากที่สุด ภาวะซึมเศร้าและความง่วงในตอนกลางวันมีความสัมพันธ์กับความเครียด

คำสำคัญ: ความเครียด, บุคลากร, ที่ทำงาน

งานวิจัยนี้ได้รับทุนสนับสนุนจากเงินรายได้ของศูนย์การแพทย์สมเด็จพระเทพรัตนราชสุดาฯ สยามบรมราชกุมารี คณะแพทยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ

ภาควิชาเวชศาสตร์ป้องกันและสังคม คณะแพทยศาสตร์ มหาวิทยาลัยศรีนครินทรวิโรฒ อ.องครักษ์ จ.นครนายก 26120
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Abstract:

Background: Stress in the workplace is a major problem affecting the efficiency of work and quality of work life. Stress may also lead to other health problems both physical and mental such as migraines, depression, and excessive daytime sleepiness.

Objective: To determine the prevalence of high to severe stress among the employees of the Faculty of Medicine, Srinakharinwirot University, and to explore factors associated with the stress.

Materials and methods: 1,133 personnel of the Faculty of Medicine, Srinakharinwirot University were selected and response rate was 65%. The study design was cross-sectional and data were collected from May to July, 2009. Logistic regression was employed for multivariate analysis. A two-tailed p-value of less than 0.05 was considered significant.

Results: The highest prevalence of high to severe stress of 67% was found among the laborers while the lowest prevalence of 51.2% was found among the medical doctors. These laborers had odds ratio of high to severe stress 5.6 times (95% CI=1.9-16.6) higher than the doctors. Personnel in the 20-29 years age group had 1.6 times more high to severe stress than the 30-39 years age group. Personnel who suffered from depression and excessive daytime sleepiness had higher level of high to severe stress than personnel who did not. Nurses agreed that inadequate welfare increased stress levels.

Conclusion: Laborers had the highest level of stress and age group of 20-29 years had higher stress than other age groups. Major depression and daytime sleepiness were associated with stress levels.

Key words: personnel, stress, workplace

Introduction

Many studies have established that job stress is related to the type of work and other factors. For example in United State of America, oncology staffs experience stress at work 63% of total staffs,¹ whereas radiologists have severe organizational discomfort 38.5% of total,² male automotive assembly workers have self-perceived stress 31.1% of total³ and Indian foundry shop floor workers have high job strain 25% of total.⁴ With medical personnel in Norway, young physicians may have stress related to work-home interference due to a lack of adaptive decrease

in work hours and an increased number of children.⁵ The psychosocial stress such as job-related demands, lack of skill discretion is associated with weight gain.⁶ Males and females have different associations with stress. Male Japanese workers eat a lot when they have high job demands, which contribute to obesity.⁷ Male health care workers' emotional stress increases with total patient load more than female and interferes with sleep quality.⁸

Occupational stress affects job performance,⁹ and is associated with serious health problems such as major depression and migraines.^{9,10} Personnel

with high stress may have increased absenteeism due to sickness and decreased job satisfaction. Organizations where stress is a problem can have increased health care costs and high staff turnover.⁹ Modern researchers studying this problem suggest that organizational policies should be constructed with a goal of decreasing personnel stress to improve work performance and organizational success.

The objective of this study was to determine the prevalence of high to severe stress in personnel working at the Faculty of Medicine, Srinakharinwirot University, and to examine associated factors.

Materials and methods

Study population

All of the personnel from the Faculty of Medicine, Srinakharinwirot University, Thailand were recruited for this cross-sectional study. The study was approved by the Ethics Committee of the Faculty of Medicine, Srinakharinwirot University.

Study definitions

Three tools were used in this study. First was the diagnostic screening test for depression in the Thai population: a Health-Related Self-Reported (HRSR) Scale from the Department of Mental Health, Ministry of Public Health, Thailand was used in the study. Specificity and sensitivity of this test with cut-point at 25 score is 93.4% and 75.1%, respectively.¹¹ Cronbach's Alpha Reliability Coefficient of this test from previous study is 0.91.¹¹ It is appropriate for Thai population age group 15-60 years.¹¹ This instrument's interpretation of depressive scores are as follow: a score of 25 or more but

less than 30 is defined as a stressful situation, depressive mood, or other psychological problem, and the patient/subject should seek early treatment and a score of 30 or more is defined as major depression. The author defines depression as depressive score of 25 or more that included stress situation, depressive mood, or other psychological problems and major depression.

The second tool was the Suanprung stress test developed by Suanprung Hospital, Thailand. Concurrent validity in Thai population standardizes with electromyography (EMG) more than 0.27 (significant with 95% confidence interval).¹² Cronbach's Alpha Reliability Coefficient of this test from previous study is more than 0.7 with correlation to EMG significantly.¹² This test is appropriate for student and adulthood.¹² It was used to evaluate stress and interprets stress scores as follow: a score of 0 to 23 is defined as mild stress; a score of 24 to 41 is defined as moderate stress; a score of 42 to 61 is defined as high stress; and a score of 62 or more is defined as severe stress. The author defines stress score into two categories. One is mild to moderate stress and the other one is high to severe stress.

The last tool was the Epworth sleepiness scale (ESS), a questionnaire for measuring daytime sleepiness, which was helpful in diagnosing sleep disorders.^{13,14} The subjects were asked to rate of sleepiness on a scale of increasing probability from 0 to 3 in eight different situations.^{13,14} The total scores of 0-9 are considered to be normal while the total score of 10-24 is considered as excessive daytime sleepiness.^{13,14} The definition of sleep deprivation refers to a night time sleep of less than 7 hours as recommended by the National Sleep Foundation of the United States.¹⁵

The body mass index (BMI) is classified by the Ministry of Public Health, Thailand as follow: BMI <18.5 = underweight; BMI 18.5-22.9 = normal; BMI 23-24.9 = risk of becoming overweight; BMI 25-29.9 = obesity type 1; and BMI >30 = obesity type 2. This study defines the term “overweight” for the subject with BMI >23. This includes risk of becoming overweight, both obesity type 1 and obesity type 2.¹⁶

Self-perceived questionnaire about the problems in the workplace is management problems, co-worker problems, and inadequate welfare. The score for each problem was as follow: 3 = high concern; 2 = moderate concern; and 1 = some concern but not serious.

The officers in this study mean the back-office personnel who support the health-care workers such as accountants, engineers, and lawyers. The laborers mean the personnel whose jobs need strength rather than skill or unskilled personnel such as maids and gardeners.

Data collection

The anonymous questionnaires were composed of four parts. The first part surveyed general demographic data and self-perceived problems in the workplace. The second part was the “Diagnostic Screening Test for Depression in the Thai Population: a Health-Related Self-Reported (HRSR) Scale from the Psychological Department, Ministry of Public Health, Thailand. The third part was the Suanprung Stress Test from Suanprung Hospital, Thailand. The fourth part was the Epworth sleepiness scale. The data were collected from May to July, 2009.

Statistical analysis

For response variables, significant explanatory variables were first identified through bivariate analysis and then through multivariate analysis by logistic regression which explored variables by stepwise analysis. Modifying factors (interaction) were managed by building interaction term and put them in the logistic model. If they were not significant, we removed them from the model. A two-tailed p-value of less than 0.05 was considered significant.

Results

The total number of personnel was 1,133, of whom 740 completed the questionnaires (65% response rate). The characteristics of the participants are described in Table 1.

The percentage analyses of the participants' characteristics shown in Table 1 were as followed. 48% were officers, 30.2% nurses, 9% scientists, 7% laborers, and 5% doctors. 82.1% were female. 90.5% were in the 20-29 and 30-39 years age groups. 53% were single marital status. 14.1% had underlying diseases. 19.5% of the participants worked more than 8 hours per day. 82.7% said they experienced sleep deprivation. 57.2% did shift work. 22.4% were overweight. 18.6% said they experienced depression. 36.8% complained of suffering from daytime sleepiness (Table 1).

The ranking of high to severe stress according to professional group were as followed: laborers 84%, nurses 74.9%, officers 63.7%, scientists 60.9%, and doctors 51.2%. (Figure 1)

Concerning the association of study factors with high and severe stress level, the 20-29 year age group had high to severe stress level 1.6 times higher than the 30-39 year age group. Laborers had high to severe stress level 5.56 times higher than the doctors. Personnel with depression had high to severe stress level 25.78 times higher than personnel without depression. Those who suffered from daytime sleepiness had high to severe stress level 5.52 times higher than those who did not. Personnel who worked about 8 hours a day had high to severe stress level 2 times higher than those who worked more than 8 hours. (Table 2)

The nurses expressed their concerns that welfare problems and management problems correlated with their stress level while there were no a significant correlation between stress level and self-perceived problems among the doctors, the scientists, the officers, and the laborers. (Table 3)

Table 1 Personnel's characteristics

Characteristics	Number	Percent
Professional group		
Doctor	41	5.8
Nurse	215	30.2
Scientist	64	9.0
Officer	342	48.0
Laborer	50	7.0
Total	712	100.0
Gender		
Male	131	17.9
Female	600	82.1
Total	731	100.0

Table 1 (Continued)

Characteristics	Number	Percent
Age group (years)		
20-29	409	56.7
30-39	244	33.8
40-49	58	8.1
50-59	10	1.4
Total	721	100.0
Marital status		
Single	311	53.0
Married	270	46.0
Divorce	5	0.8
Widow	1	0.2
Total	587	100.0
Underlying disease		
No	540	85.9
Yes	89	14.1
Total	629	100.0
Work duration (years)		
Within 2.5	270	42.8
Above 2.5 to 20	361	57.2
Total	631	100.0
Sleep duration		
Less than 7 hours	515	82.7
7 hours and more	108	17.3
Total	623	100.0
Job pattern		
No shift work	304	42.8
Shift work	407	57.2
Total	711	100.0
BMI		
Underweight to normal	574	77.6
Overweight	166	22.4
Total	740	100.0
Depression		
No	602	81.4
Yes	138	18.6
Total	740	100.0
Daytime sleepiness		
No	468	63.2
Yes	272	36.8
Total	740	100.0

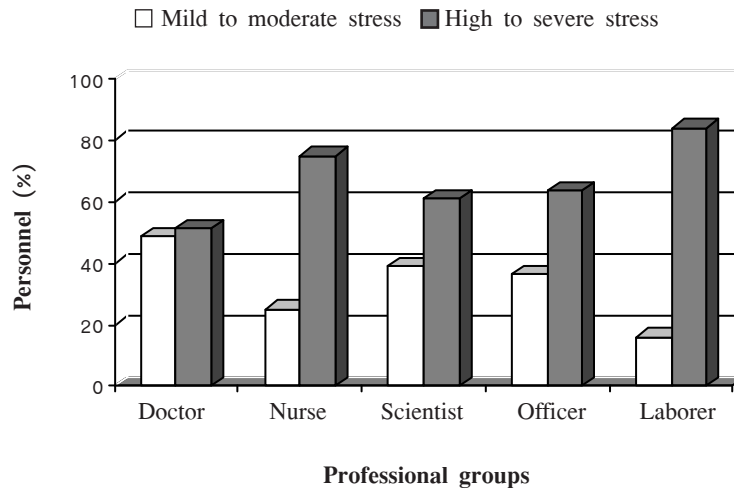


Figure 1 Personnel’s stress according to professional groups

Table 2 Association of study factors with high and severe stress by logistic regression

Factors	OR	95% Confidence interval	P-value
Age group (years)			
20-29	1		
30-39	0.62	0.41-0.94	0.025
BMI			
Underweight to normal	1		
Overweight	0.64	0.39-1.06	0.086
Professional group			
Doctor	1		
Nurse	1.87	0.99-3.53	0.054
Officer	1.44	0.81-2.56	0.215
Laborer	5.56	1.86-16.63	0.002
Depression			
No	1		
Yes	25.78	6.21-107.12	<0.001
Daytime sleepiness			
No	1		
Yes	5.52	3.38-8.99	<0.001
Work time (hours)			
Within 8	1		
More than 8	0.50	0.30-0.84	0.008

OR: Odds ratio (adjusted)

Table 3 Spearman rank correlations between stress level (mild, moderate, high, and severe) and self-perceived problems (least concern, moderate concern, and most concern) by professional group and type of problem

Professional group	Co worker problem		Management problem		Welfare problem	
	Rho	P-value	Rho	P-value	Rho	P-value
Doctor	0.3439	0.1377	-0.1945	0.3515	-0.1952	0.3839
Nurse	-0.0275	0.7150	-0.2524	0.0006	0.2017	0.0060
Scientist	0.1472	0.2977	-0.1955	0.1647	0.0459	0.7442
Officer	0.0163	0.7875	-0.0562	0.3533	0.0233	0.6971
Laborer	-0.0787	0.6203	0.0675	0.6711	-0.0351	0.8256

Discussion

The overall prevalence of high to severe stress in this study is 67%, with the highest prevalence among the laborers, who are considered the highest risk group and the doctors have the lowest prevalence of high to severe stress (Figure 1). These findings were similar to the study of Dougherty, et al.¹ in oncology workers and the study of Magnavita, et al.² in radiologists. But the percentage of high to severe stress of doctors (51.2%) and of the laborers (84%) in this study may be different from the previous studies (63%) because the doctors and the laborers in this study are recruited from different departments such as medicine, pediatrics, radiology, etc. The prevalence of high to severe stress in these laborers was also higher than those found in the studies of Edimansyah, et al. and Mohan, et al.^{3,4} This finding corresponds to the study by Block, who stated that low socioeconomic status, many financial problems, and family problems led to personnel stress.⁶ Also, perhaps the low level of social support

provided for these laborers and job insecurity were detrimental to their health.¹⁷ The doctors had the lowest stress level because they have the highest socioeconomic status among the professional groups and they had higher salary and receive more respect than other professional groups (Table 2). In this study, the 20–29 years age group is found to have high to severe stress level 1.6 times higher than the 30–39 years age group (Table 2). This corresponds to the study by Lindsay, who also found that younger age group of physiotherapists had higher level of high to severe stress than older age group because they encountered problems of high caseloads, periods of increased activity, and staff shortages.¹⁸ In addition, younger age groups had less job experience and social adjustment skills than other age groups.⁵

We also find in this study that personnel who suffer from depression and daytime sleepiness had higher level of high to severe stress than personnel who did not (Table 2). This is

consistent to the finding from the Canadian National Population Health Survey. They found that those who were exposed to persistent high job strain had a higher risk of major depression than those who were exposed to low job strain.⁹ It also corresponds to the study by Jansson-Fröjmark who found that personnel who had high work demands had an increased risk of developing insomnia 1 year later, which led to daytime sleepiness.¹⁹ Reducing job strain in the workplace may decrease both major depression and daytime sleepiness. Personnel who worked within 8 hours usually were daytime work which had high work demands or high patient load so they had high to severe stress more than personnel who worked more than 8 hours that usually were nighttime work. As the study of Vanagus that health care personnel who have high patient load are high risk of stress.²⁰

In this study, the nurses agree that inadequate welfare increased stress levels while management and co-worker problems do not (Table 3). The employer might give welfare inadequately so that the nurses got stress. The employer should manage welfare to improve the financial situation of employee in need and may also strive to improve their employment chances and many other aspects of their lives including sometimes their mental health.²¹

The low response rate (65%) of this study caused random error and selection bias, some professional groups participate disproportionately so the results were not the totally representative of real personnel. The future research should focus on stratified random sampling that it could be more precise and validity.

Conclusion

The laborers at the Faculty of Medicine of Srinakharinwirot University had the highest prevalence of stress. The younger age group (20–29 years) had the highest stress. Stress level was related to major depression and daytime sleepiness. The employer should improve welfare adequate to the employee's need especially in nurses.

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