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## ORIGINAL ARTICLE

### IMPACT OF PREDISPOSING FACTORS ON ACADEMIC STRESS AMONG PRE-SERVICE TEACHERS

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#### ABSTRACT

**Background and objective:** Many studies have been done on stress among educators. Teachers, lecturers, and tutors all over the world has been brought into attention when it comes to stress related issues. Our purpose was to investigate the level of academic stress among pre-service teachers in a teaching education institution in Perak, Malaysia. **Methods:** In this study a cross-sectional comparative survey study was conducted on pre-service teachers from a teacher education institution. The variables that was tested and correlated throughout the study are age, gender, and marital status, and medical history, influence of medications, exercise and social lifestyle. Data was collected through questionnaires to find out the outcome. Descriptive data analysis was used to describe the socio-demographic data. Correlation analysis was used to determine the significant relation between the variables.  $P < 0.05$  was considered as significant of the study. **Results:** Majority of the students, 78.4% represent the severe category of distress according to the Kessler scale. The remaining 13.6% were recorded as being under mild and 7.6% ( $n=19$ ) under moderate category of distress. Regrettably, less than 1% ( $n=1$ ) of the pre-service teachers were from the well category. Exercise was found to be significantly associated with the prevalence of severe psychological distress. Simple logistic regressions showed that pre-service teachers who exercised had a significant 91% reduced risk for psychological distress ( $OR=0.09$ ; 95%  $CI=0.02, 0.35$ ) compared to those who doesn't exercise. **Conclusion:** At the end of this study, a better understanding on the predisposing factors of academic stress among pre-service teachers was determined and therefore interventions on coping with stress can be made simple. Various physiotherapy interventions on preventive and corrective measures were suggested with reference to the results.

**Keywords:** Predisposing factors, Academic stress, Pre-service teacher

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## INTRODUCTION

Stress is defined as a state of mental or emotional strain or tension resulting from adverse or demanding circumstances. Stress is basically the body's reaction to a change that requires a physical, mental, or emotional adjustment or response<sup>1</sup>. Teaching has been proven as a stressful job. Stress among teachers can be identified at a very early stage itself in the form of academic stress during their academic years as pre-service group of teachers. In addition, the working environment is a contributing factor for highly stress provoking. When individuals cannot fulfil the demands of environment (stressors) and neither copes with overwhelming challenges, this leads to stress<sup>2</sup>. For teachers, high levels of stress may result in low morale, reduced effectiveness, higher level of absenteeism, and reduced commitment to the profession, potentially resulting in the decision to either leave the profession or seek for other alternatives.

In some cases, the individual goes through stress and end up in emotional exhaustion. Emotional exhaustion is defined as the chronic state of physical and emotional depletion that results from excessive job and/or personal demands as well as continuous stress. To overcome or reduce emotional exhaustion, the stressed-out individual creates a psychological distance in order to protect him or herself against the stressful provoking environment. As a result, this professional group is less effective in achieving his or her goals. This results in diminishing as well as negative contributing factors of personal accomplishment, feelings of incompetence and self-doubt. This further contributes to a progressive loss of idealism, energy, and purpose experienced by people in

the helping professions as a result of the working environment and work processes. Stress also occurs when a person deals with a situation that they recognize as irresistible and cannot be managed<sup>3-10</sup>.

Previous studies showed that work stress contributed to the rapid changes in the National Education Curriculum which aims to transform Malaysia into a fully developed nation by the year 2020. The leading statement requires a lot more expectation and contribution of the teachers as the changing roles of teachers become more challenging and demanding. Among the academic stressors identified were workload, examination, low motivation and high family expectations<sup>2</sup>. The teaching profession has been identified to be facing three negative situations, which are stress, low teacher morale, and resignation though this is less apparent in economic recession<sup>6</sup>. However, stress among teachers is a serious issue because it can disrupt an adolescent's capacity to handle daily life. Considerable amount of studies has been carried out on stress among teachers especially in the western countries, there is very little studies on stress among teachers carried out in developing countries such as Malaysia. Therefore, this study aims to explore the similar situation among teachers in Malaysia. In this study, the focus is on the exploration of how pre-service teachers perceive stress and experience specific stress effects in their studies, in order to foster the development of different kinds of strategies with regard to the management of stressful situations<sup>4</sup>.

The primary objective is to investigate the level of academic stress among pre-service teachers in a teaching education institution. The secondary objective is to determine the

predisposing factors among the exercised and non-exercised group. The significance of this study is to encourage substantial understanding, identification and recognition of the complexities associated with teacher's stress. Besides, it can provide a meaningful contribution towards future advancements in teacher stress models since this study is targeting only the novice group of teachers who are currently under training. It can also serve as a preliminary study in stress among teachers and can become a basis for future studies on similar topic such as the managing stress strategies, outcome suggestions and further studies on stress for the same population or on a different population<sup>4</sup>. This study may also contribute to create and promote awareness programs and campaigns in the future to help stress management which seems to be an arising issue in the country.

This understanding can then be used as a precursor to provide a better and more efficient approach especially to health providers who face or anticipate cases of stress related conditions. Subsequently, in determining the predisposing factors of academic stress, the management strategies and interventions can be planned out strategically and effectively as a method or manner of stress prevention.

## RESEARCH METHODOLOGY

This study employed a cross-sectional comparative study design as it was appropriate as the study is carried out at one time point within two groups and seeks to describe particular phenomena as they allow data to be collected based from a large group of population. Data will be collected based on demographic data, predisposing factors and information or knowledge about the outcome

which are the consequences of academic stress. The sample size for this study will be 250 pre-service teachers. The formula for sample size calculation used is Kish L. 1965,  $n = (Z_{1-\alpha})^2 (P(1-P)/D^2)$ . Descriptive data analysis was used to describe the demographic data. Multi-variant analysis was used to find the impact of exercise on academic stress between exercised and non-exercised group.  $P < 0.05$  will be considered as significant of the study. Data analysis would be done using SPSS software. The inclusion criteria chosen were preservice teachers aged 18-23 consisting of both genders and the exclusion criteria were students with pre-existing long term medical illnesses and psychological disorder.

The data is collected from two different instruments. The first is the Psychological Distress Kessler's Scale (K10) and secondly from a survey questionnaire. The researcher would gather qualitative data from both the instruments.

This would help the researcher to understand and identify the variable in a more comprehensive manner. Kessler's Psychological Distress Scale (K10) involves 10 questions about emotional states each with a five-level response scale. The measure can be used as a brief screen to identify various levels of distress.

The self-prepared validated questionnaire consists of four sections which are demographic data, list of items that test the attitude towards stress, health consequences of stress and the various predisposing factors of stress was administered. The data collected from both the instruments are analysed to identify the sources of academic stress among pre-service teachers and to investigate the academic stress level<sup>6</sup>.

## RESULTS

Figure 1 below demonstrates the prevalence of stress according to the Kessler Psychological Distress Scale (K10). Scores of the 10 items are summed, yielding a minimum score of 10 and maximum score of 50 and the range of K10 score was classified under 4 categories namely; well, mild, moderate, and severe.

Low scores indicate low levels of psychological distress while high scores indicate high levels of psychological distress [3]. Based on Figure 1, majority of the students, 78.4% (n=196) represent the severe category of distress according to the Kessler scale. The remaining 13.6% (n=34) students were under mild and 7.6% (n=19) under moderate category of distress. Regrettably, less than 0.4% (n=1) of the pre-service teachers were from the well category.

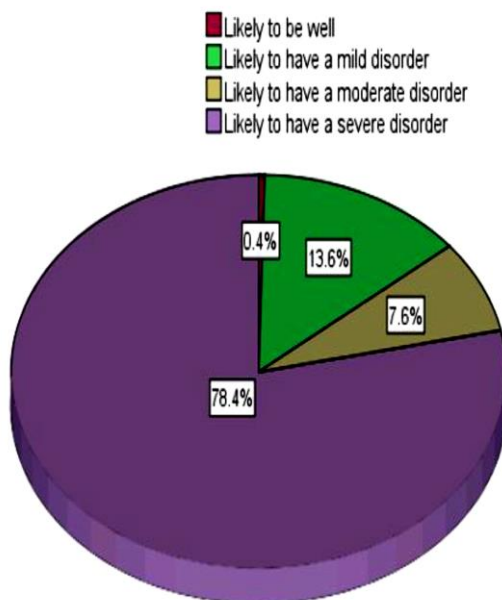


Figure 1 Prevalence of psychological distress based on K10 scale

Table 1 gives the association the predisposing factors and its prevalence of psychological distress. Smoking habit, sleep disturbance, exercising habit and reasons, frequency, types as well as duration of exercise were significantly associated with the prevalence of severe psychological distress<sup>6</sup>.

Simple logistic regressions showed that pre-service teachers who smoke had a significant 91% reduced risk for psychological distress (OR=0.09; 95% CI=0.02, 0.35) compared to those who doesn't smoke. Sleep disturbance is more likely among those at risk of severe psychological distress (OR=3.8-8.9).

Those who doesn't exercise were nine times more likely to encounter psychological distress (OR=9.4; 95% CI=2.8, 31.4) whereby those who exercise few times a week had 76% reduced risk. Compared to those who doesn't exercise at all, spending 45 minutes a day for exercising reduced the risk of psychological distress by 88% while exercising more than 45 minutes reduced the risk by 95%.

Reasons to exercise were also seemed to lower the likelihood of getting stressed. For instance, those who exercised to prepare for sports had a significant 94% (OR=0.06; 95% CI=0.01, 0.35) reduced risk for psychological distress<sup>8,11,12</sup>.

Variables		Stress n (%)		Statistics		Regression	
		Lower (n=54)	Severe (n=196)	$\chi^2$	p-value	OR (95% CI)	p-value
Smoking Status <sup>a</sup>	No	46 (85.2)	193 (98.5)	17.761	<0.001** <sup>b</sup>	-	Ref
	Yes	8 (14.8)	3 (1.5)	-	-	0.09 (0.02-0.35)	0.001*
Alcohol Consumption	No	50 (92.6)	174 (88.8)	0.662	0.416	-	Ref
	Yes	4 (7.4)	22 (11.2)	-	-	1.58 (0.52-4.80)	0.419
Sleep Disturbance	Never at all	41 (75.9)	57 (29.1)	39.651	<0.001**	-	Ref
	Some of the Time	10 (18.5)	123 (62.8)	-	-	8.85 (4.14-18.90)	<0.001**
	Most of the Time	3 (5.6)	16 (8.2)	-	-	3.84 (1.05-14.03)	0.042*
Exercising habit <sup>a</sup>	Yes	51 (94.4)	126 (64.3)	18.626	<0.001**	-	Ref
	No	3 (5.6)	70 (35.7)	-	-	9.44 (2.84-31.37)	<0.001
Reason to Exercise <sup>a</sup>	Personal Enthusiasm	3 (9.1)	33 (22.9)	12.669	0.002*	-	Ref
	Sports Preparation	5 (15.2)	3 (2.1)	-	-	0.06 (0.01- 0.35)	0.002*
	Health and Fitness	25 (75.7)	108 (75.0)	-	-	0.39 (0.11-1.38)	0.146
Frequency of Exercise <sup>a</sup>	Rarely	5 (15.2)	56 (38.9)	8.034	0.018*	-	Ref
	Once a Week	6 (18.2)	28 (19.4)	-	-	0.42 (0.12-1.49)	0.177
	Few Times a Week	22 (66.6)	60 (41.7)	-	-	0.24 (0.09-0.69)	0.008*
Types of Exercise	Aerobic	20 (60.6)	69 (47.9)	8.615	0.013*	-	Ref
	Anaerobic	0	31 (21.5)	-	-	0	0.998
	Both	13 (39.4)	44 (30.6)	-	-	0.98 (0.44-2.17)	0.962
Duration of Exercise	None	3 (5.6)	70 (35.7)	24.037	<0.001**	-	Ref
	< 45 Minutes	39 (72.2)	112 (57.1)	-	-	0.12 (0.37-0.413)	0.001
	≥ 45 Minutes	12 (22.2)	14 (7.1)	-	-	0.05 (0.12-0.201)	<0.001

\*P=0.05; \*\*P=0.001; <sup>a</sup> Selected as input for multivariate analysis; <sup>b</sup> Fisher exact test; Ref: Reference Category

Table 1 Predisposing factors and the prevalence of psychological distress (N=250)

## DISCUSSION

The prevalence of stress was carried out according to the Kessler Psychological Distress Scale (K10). Scores of the 10 items were summed, yielding a minimum score of 10 and maximum score of 50 and the range of K10 score was classified under 4 categories namely; well, mild, moderate, and severe. Low scores indicate low levels of psychological distress while high scores indicate high levels of psychological distress. It was recorded that majority of the students, 78.4% represent the severe category of distress according to the Kessler scale. The remaining 13.6% were recorded as being under mild and 7.6% (n=19) under moderate category of distress. Regrettably, less than 1% (n=1) of the pre-service teachers were from the well category.

Priority Research Center for gender, health and age at the University of Newcastle and the Hunter Medical Research Institute (2010) conducted a study on the association between psychological distresses, disease, disability, and socio-economic factors. The main outcome measure was the Kessler Psychological Distress Scale (K10). The K10 is a widely used and well validated tool which measures symptoms of psychological distress experienced over the past four weeks. Very little literature related to psychological distress among pre-service teachers has been found. Therefore, this study used Kessler Psychological Distress Scale (K10) to determine the level of psychological distress among pre-service teachers.

Smoking habit, reasons, frequency as well as types of exercise were significantly associated

with the prevalence of severe psychological distress [9]. A simple logistic regression showed that pre-service teachers who smoked had a significant reduced risk for psychological distress compared to those who don't smoke. Reasons to exercise also seemed to lower the likelihood of getting stressed<sup>7</sup>. In addition to this, it was found that respondents who exercised few times a week had a significant reduced risk compared to those who rarely exercise. Studies have proven that relaxation in any muscle leads to complete absence of all contractions<sup>8,11</sup>.

The extant literature largely concludes there are relationships between stress and physical activity/ exercise, and that physical activity repels the negative effects of psychological stress. It has been noted that stress and exercise relationships are open to interpretation, and people who are less disturbed by stress might simply be readier to take up

exercise training. It was reported that stress people will engage in unhealthy behaviours, such as poor dietary practices or a lack of exercise, as a means of emotion-focused coping. Indeed, a plethora of research links stress to increased smoking, use of alcohol, and increased substance abuse. From the various findings, it is clear that stress exerts a generally negative influence on physical activity/exercise<sup>12,13</sup>.

### **Recommendation**

The researcher would like to suggest implementation of Progressive Muscle Relaxation (PMR) to be practiced as a daily form of exercise routine. Wolpe's initial modification of Jacobson's Original Progressive Relaxation Training became a standard tool

among therapist of all types, especially those offering behavioural and cognitive-behavioural therapy. It is observed that systematic tensing and releasing of large muscle groups, learning to focus and differentiate between occurrence of tension and relaxation can help a person to completely reduce muscle contractions and experience a feeling of deep relaxation.

### **CONCLUSION**

The study highlights the importance of Aerobic exercise to be practiced daily. Aerobic exercises are beneficial to overall health as it promotes a sense of well-being, and allow optimal process of healing. Aerobic exercise also has some direct stress-busting benefits as it promotes a healthy production of neurotransmitters, called endorphin.

Although this function is often referred to as a runner's high, a simple aerobic activity such as yoga or deep breathing exercises can also contribute to the similar reaction. Aerobic exercise can also promote sound sleep, which is often disrupted by stress and anxiety. It can benefit by easing the stress levels and giving a sagacity of control over your body and mind.

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