

# The Prevalence of Psychological Stress and Its Associated Factors among Secondary School Teachers in Samarahan and Asajaya District

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## ABSTRAK

*Pelbagai jenis pekerjaan dikaitkan dengan tekanan psikologi di mana kerjaya guru dianggap sebagai salah satu pekerjaan yang memberi tekanan. Kajian ini bertujuan bagi menentukan kadar tekanan psikologi serta faktor-faktor yang berkaitan dalam kalangan guru-guru sekolah menengah. Kajian keratan rentas telah dijalankan dalam kalangan guru-guru sekolah menengah di daerah Samarahan dan Asajaya menggunakan borang soal selidik. Status tekanan psikologi diukur menggunakan borang DASS-21 versi Bahasa Melayu. Inventori Tekanan Guru telah disesuaikan bagi mengenal pasti faktor-faktor psikososial. Kadar tekanan psikologi di dalam kajian ini adalah 19.5%. Daripada 241 orang guru, 9.1% mengalami tekanan ringan, 7.1% mengalami tekanan sederhana dan 3.3% mengalami tekanan teruk dan sangat teruk. Kadar tekanan psikologi sangat ketara dalam kalangan guru-guru yang muda, bujang, balu/duda atau bercerai, dan berpendapatan isi rumah yang sangat rendah. Antara faktor pekerjaan, hanya bilangan tahun pengalaman mengajar yang mempunyai hubungan yang ketara dengan tekanan psikologi. Analisis regresi logistik mengenal pasti empat elemen penting yang dikaitkan dengan tekanan psikologi, terutamanya pendapatan isi rumah, kebimbangan, kemurungan dan pengurusan masa. Kesimpulannya, beban psikologi dalam kalangan guru sekolah boleh dikaitkan sama ada dengan faktor-faktor individu atau faktor-faktor pekerjaan. Tanggungjawab mengurus kesihatan mental dalam kalangan guru-guru tidak hanya terletak pada individu sahaja tetapi pada setiap peringkat di dalam organisasi. Sistem pengesanan awal bagi mengesan tekanan psikologi boleh dilaksanakan di peringkat sekolah.*

*Kata kunci: faktor berkaitan, guru, tekanan psikologi, sekolah menengah*

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## ABSTRACT

A wide range of occupations have been associated with psychological stress, and the teaching profession has been considered as one of the most stressful jobs. This study aimed to determine the prevalence of psychological stress and its associated factors among secondary school teachers. A cross-sectional study was conducted among secondary school teachers in Samarahan and Asajaya districts using self-administered questionnaires. The status of psychological stress was measured using the Malay version of DASS-21. The Teachers Stress Inventory was adapted to identify the psychosocial factors. The overall prevalence of psychological stress from this study was 19.5%. Out of 241 teachers, 9.1% had mild stress, 7.1% had moderate stress, and 3.3% had severe to very severe stress. The prevalence of psychological stress was significant among younger teachers, single, divorced or widowed, and those with the least household income. Among occupational factors, only the number of years of teaching experience has a significant relationship with psychological stress. The logistic regression analysis identified four significant elements associated with psychological stress, notably household income, anxiety, depression and time management. As a conclusion, the burden of psychological stress among school teachers can be associated with either individual factors or work-related factors. The responsibility in managing mental health among teachers does not only lie with the individual but at every level in the organisation. The surveillance systems for early detection of psychological stress can be implemented at the school level.

Keywords: associated factors, psychological stress, secondary school, teachers

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## INTRODUCTION

Psychological stress covers a broad spectrum, ranging from normal feelings of vulnerability, sadness and fears to problems that can become disabling, such as depression, anxiety, extensive worries, negative thoughts, or social isolation (Zimmermann 2015). It also implies to as an emotional distress or a negative emotional state (Moon et al. 2015). Psychological stress among workers occurs as a result of an inability to cope effectively with various work demands (Giorgi et al.

2020). Even though a wide range of occupations have been associated with psychological stress in many kinds of literature, the teaching profession has been considered as one of the occupations at risk of psychological stress (Mukosolu et al. 2015; Stansfeld et al. 2011; Woodward et al. 2017). In a review paper by Kassim et al. (2018), among the top five occupations in Malaysia with the highest prevalence of psychological stress, three were of educational background, namely primary school teachers, secondary school teachers, and university

academicians.

In recent years, the culture of teaching has evolved compared to the traditional way of teaching, with the addition of administrative tasks. They are also involved in planning and developing the content of lessons, taking part in assessing students' performance, classroom management and discipline, taking on the role of an instructor and coordinator for extra-curricular activities, and communicating with parents whenever they are needed (Kaur 2011). These additional functions may be stressful for these teachers and may interfere with their primary role of teaching students. Kyriacou (2001) defined psychological stress among teachers as the unpleasant experience or emotion and a negative state experience, that leads to anger, tension, depression, and disappointment that are caused by teaching responsibilities. Teacher stress is one of the occupational stresses that refers to stress in the context of the school environment (von der Embse et al. 2019).

In Malaysia, the total number of school teachers is higher than the total number of higher institutions' educators with primary school teachers seven times higher and secondary school teachers five times higher than lecturers in tertiary institutions (Quick Facts 2018). The prevalence of psychological stress among secondary school teachers ranged between 19.6% (Zamri et al. 2017) and 34.0% (Hadi et al. 2009). The percentage was slightly higher compared to the prevalence of stress among educators from higher learning institutions (colleges and

universities), which ranged from 21.7% (Mukosolu et al. 2015) to 25.9% (Ismail et al. 2014). A cohort study among trainee teachers in England presented that almost half (46%) considered the teaching profession as a stressful job based on their observation. Meanwhile, about 38% of this cohort described their teaching experience during practicum as very stressful (Chaplain 2008). Despite the lack of study, there appears to be a cause for concern regarding the occurrence of psychological stress among secondary teachers in Malaysia.

The factors related to psychological stress can be divided into socio-demographic characteristics (Azizah et al. 2016; Othman & Sivasubramaniam 2019), occupational factors (Hadi et al. 2009; Ismail & Noor 2016), psychosocial factors (Ismail et al. 2014; Mukosolu et al. 2015), and health status (Balakrishnan et al. 2017; Marchand & Marie-Ève 2011). Some studies have shown the different factors associated with psychological stress, such as coping skills (Mukosolu et al. 2015), violence (Moon et al. 2015), life events (Marchand & Marie-Ève 2011; Mukosolu et al. 2015), and a person's perception of their career (Hamjah et al. 2015).

The prevalence of stress had been associated with age in some of the studies. The secondary school teachers in the younger age group (35.2%) were feeling more stressed compared to those in the older age group (27.6%) (Othman & Sivasubramaniam, 2019). On the other hand, another study reported that both primary and secondary school teachers in the

middle age group experienced more stress than the younger age and older age group (Kavita & Hassan 2018). Other studies showed no significant difference between the level of stress and age among special education teachers (Ghani et al. 2014) and university lecturers (Mukosolu et al. 2015).

A study among lecturers in one public university in Malaysia showed that female lecturers were four times more prone to experience occupational stress compared to their male counterparts (Nur Aqilah & Juliana 2012). Whereas, Tai et al. (2019) reviewed 22 studies that were conducted among educators from different levels of school in Malaysia and found that male respondents had a higher prevalence of stress compared to female respondents. In addition, several studies looked at the comparison between marital status and educational level with stress and depression (Ismail & Noor 2016; Kaur 2011; Mukosolu et al. 2015). Being married, single or divorced influenced the stress level. A study by Ismail & Noor (2016) among research university lecturers reported that more of the single respondents presented with stress (34.8%) than married (21.1%) and widowed (16.7%) respondents.

Beside that, the occupational risk factors such as teaching experience, role at school, workload, and student misbehaviour, also played an important role in mental health among teachers. A study by Othman and Sivasubramaniam (2019) presented the highest prevalence of psychological stress among secondary school

teachers was among those with the vastest teaching experience, which is of more than ten years. The same findings were discovered in the study that was conducted among university lecturers (Azizah et al. 2016; Ismail & Noor 2016).

Furthermore, teachers who were appointed as a headmaster or school principal tend to be more stressed than regular teachers (Dawn et al. 2016). A study among primary school principals in Ireland showed that the stress level was higher among newly appointed principals (Darmody & Smyth 2016). Another study suggested that role stress was associated with intention to leave with the presence of mediating factors such as job satisfaction and commitment (Conley & You 2009). In a local study, teachers' job responsibility showed no significant association with teachers' stress (Samad et al. 2011). The job responsibility refers to additional tasks such as appointment as subject coordinator, classroom teacher and school administrator.

Psychological stress also had been associated with the number of teaching classes. The prevalence of psychological stress was higher among teachers, with a large number of classes (Desouky & Allam 2017). However, a study done by Hadi et al. (2009) showed that the number of classes was not a predictor of psychological stress. A review by Haaren-Mack et al. (2019) on sources of stress among physical education teachers divided the workplace sources into three categories: most important, moderate and low importance sources. The most important sources of stress were

curriculum, facilities and equipment, and students' discipline. Meanwhile, the factors that were of moderate importance include interaction or relationship with colleagues, physical strain, and administrative support. Lastly, elements such as the lack of students' motivation and assessment of students' performance were deemed as low importance sources of stress.

The psychosocial element was found as one of the factors which were associated with psychological stress (Hadi et al. 2009; Ismail et al. 2014; Zamri et al. 2017). Psychosocial factors are psychological sensations or experiences that relate to the individual's physical and social status. Among the factors that were commonly described in the literature are time management (Fimian 1988; Samad et al. 2011; Skaalvik & Skaalvik 2017), workload or work-related stressor (Ahsan et al. 2009; Boyle et al. 1995; Chaplain 2008; Desouky & Allam 2017), students' discipline (Aflakseir & Nemati 2018; Boyle et al. 1995; Haaren-Mack et al. 2019; Skaalvik & Skaalvik 2017), professional investment and development (Conley & You 2009; Darmody & Smyth 2016; Malik et al. 2017; Mukosolu et al. 2015), and professional distress (Boyle et al. 1995; Fimian 1988; Iqbal et al. 2016; Malik et al. 2017).

Besides the frequently reported risk factors, there are other potential unexplored contributors to stress among teachers. Other factors such as physical activity, underlying medical problems, time management, and other occupational factors are hard to be found in local studies. Also, most

study in Malaysia were conducted in peninsular Malaysia. Therefore, this study was conducted to explore the burden of psychological stress and possible associated factors such as socio-demographic factors, occupational factors, psychosocial factors, and health status among secondary school teachers in Samarahan and Asajaya District.

## MATERIALS AND METHODS

The study was conducted among secondary school teachers in Samarahan and Asajaya District. This study utilised a cross-sectional study design. Data collection was conducted between January 2019 and March 2019. The inclusion criteria were: a Malaysian citizen, teachers who are working in a secondary government school, aged between 20 and 60 years old, working permanently or on a contract basis, with teaching experience of at least six months prior to the study, and teachers who had contact with or worked directly in the teaching of the students. Teachers who were on study leave, maternal leave, unrecorded leave or unpaid leave throughout the study period were excluded.

The sample size was obtained based on a 95% confidence interval with an acceptable margin of error of 5%, design effect one, and a reference of 32.3% from previous study (Othman & Sivasubramaniam 2019). Therefore, the number of samples required in this study was 262 from the total number of teachers, 813. The sample size includes 10% of possible dropouts.

Sampling was conducted by means of multi-stage sampling, a combination of cluster and systematic random sampling. The total number of teachers was group into clusters according to the schools.

The Malay version of the self-administered questionnaire was used in this study. The teachers' stress level was measured using the Malay version of the Twenty-One Questions on Depression, Anxiety and Stress Scale (DASS-21) (Musa et al. 2007). Meanwhile, the psychosocial aspects of the workplace included 29 items adapted from the Teacher Stress Inventory (Boyle et al. 1995). Data transformation and coding was done before proceeding with the normality tests. The descriptive data was presented in frequency and percentage. Meanwhile, the continuous variables were presented as means with their standard deviation.

Categorical variables were tested for associations using Pearson's chi-squared test. Meanwhile, the Fisher's exact test was used for the variables with an expected count less than five. The most important variables with a statistically significant  $p$ -value  $<0.25$  were entered into the logistic model. This study used  $p$ -value  $<0.25$  to select the variables following the recommendation by Hosmer-Lemeshow, as a  $p$ -value of  $<0.05$  sometimes are unable to recognise some essential variables (Hosmer & Lemeshow 2000). While controlling the cofounders, a multivariate analysis was performed using binary logistic regression to determine the predictors of stress. the result of regression analysis

was expressed as adjusted odds ratio with a 95% confidence interval. This study set the level of significance at 5% ( $p$ -value  $<0.05$ ). All data was analysed using the IBM SPSS Statistics version 22 (IBM Corp., Armonk, NY, USA).

## RESULT

The response rate for this study was 93.8%. A total of 241 samples were entered into the final analysis. The mean age of the respondents was 41.7 years ( $SD=8.36$ ) with predominantly female teachers (63.1%). Most of the respondents were in the age group of 40-49 years (41.1%), Malay (56.8%), Muslims (65.1%), married (81.7%) and had a bachelor degree (85.1%). The median household income of the respondents was RM8,000.00 ( $IQR=4219.50$ ) with the maximum income was RM30,000.00 and the minimum income was RM2,000.00. Most of them (41.9%) were having a monthly household income of more than RM8000.00.

The median years of teaching experience of the respondents were 16 years. The majority of the respondents (60.6%) taught more than 30 students per class and taught students for the national examination (81.7%) such as PT3, SPM, STPM and STAM. More than half of the respondents (65.6%) travelled from home to school for less or equal to 20 km. In addition to this, 20.3% of respondents had medical illnesses and were currently under follow up for a variety of medical conditions, namely, diabetes mellitus, hypertension, asthma, cancer and hyperlipidaemia. The majority of

Table 1: Socio-demographic characteristics of the respondents

Characteristics		n	%
Gender	Male	89	36.9
	Female	152	63.1
Age (years)	20-29	19	7.9
	30-39	75	31.1
	40-49	99	41.1
	≥50	48	19.9
Ethnicity	Malay	137	56.8
	Chinese	32	13.3
	Iban	36	14.9
	Bidayuh	28	11.6
	Melanau	6	2.5
Others <sup>a</sup>	2	0.8	
Religion	Islam	157	65.1
	Christian	68	28.2
	Others <sup>b</sup>	16	6.6
Educational Level	SPM/STPM/STAM	4	1.7
	Diploma	3	1.2
	Bachelor	205	85.1
	Master/ PhD	29	12.0
Marital Status	Single/Divorced/Widowed	44	18.3
	Married	197	81.7
Household Income (RM)	2000-5000	59	24.5
	5001-8000	81	33.6
	>8000	101	41.9
Years of Experience	0-10	71	29.5
	11-20	86	35.7
	>20	84	34.9
Average numbers of student	10-20	1	0.4
	21-30	94	39.0
	>30	146	60.6
Teaching exam subject	Yes	197	81.7
	No	44	18.3
Distance from home (km)	0-20	158	65.6
	21-40	54	22.4
	41-60	19	7.9
	>60	10	4.1
Medical illness	Yes	49	20.3
	No	192	79.7
Smoking	Yes	12	5.0
	No	229	95.0
Alcohol	Yes	8	3.3
	No	233	96.7
Physical activity	Yes	139	57.7
	No	102	42.3

<sup>a</sup>Others: Kedayan, Serani, <sup>b</sup>Others: Buddhist, local religion

respondents (95.0%) did not smoke, 57.7% were physically active, and only 3.3% drank alcohol. Table 1 describes the socio-demographic characteristics, occupational characteristics and health status of the respondents.

### Prevalence of Psychological Stress

The overall prevalence of psychological stress among secondary school teachers in Samarahan and Asajaya District was 19.5%. Out of 241 teachers, 47 (19.5%) were stressed, with 9.1% experiencing mild stress, 7.1% experiencing moderate stress, 2.9% experiencing severe stress, and 0.4% experiencing very severe stress. While the remaining 194 (80.5%) teachers did not report of having stress.

### Associated Factors of Psychological Stress

The prevalence of psychological stress was higher among female teachers (21.1%) and younger teachers aged between 20-29 years (42.1%). Among ethnicities, Chinese showed a higher percentage of psychological stress (25.0%) compared to Malay (20.4%) and Bumiputera Sarawak (Iban, Melanau and Bidayuh) (14.3%). The prevalence of psychological stress was higher among Buddhists and local religions (37.5%) compared to Muslims (19.7%) and Christians (14.7%). Teachers with a bachelor degree (21.0%), the least household income (33.9%) and single, divorced or widowed (34.1%) presented more frequently with stress. Overall, there was a significant association between

psychological stress and age, marital status, and household income. Table 2 shows the association between respondents' psychological stress and socio-demographic characteristics, occupational factors, health status, anxiety and depression.

A significant association was found between psychological stress and years of experience. Respondents with fewer years of teaching experience presented with psychological stress more frequently than respondents with more experience. In contrast, no significant association was found between psychological stress and other occupational factors such as average numbers of student, teaching exam subject, and distance from home. This study showed anxiety and depression were significantly associated with psychological stress. Also, bivariate analysis showed significant relationship between alcohol consumption and psychological stress, where 50% of respondents who consumed alcohol presented with psychological stress. No significant relationship was found between psychological stress and the existence of medical illness, smoking, and physical activity.

Five psychosocial factors had been observed in this study, including time management, work-related stressors, students' discipline, professional investment and professional distress. A significant association was found between psychological stress and psychosocial factors. Table 3 shows the association between psychological stress and psychosocial factors.

### Predictors of Psychological Stress

Table 2: Association between respondents' psychological stress and socio-demographic characteristics, occupational factors, health status, anxiety and depression

Variables	With stress		Without stress		x <sup>2</sup>	df	p-value
	n	%	n	%			
<b>Overall</b>	<b>47</b>	<b>19.5</b>	<b>194</b>	<b>80.5</b>			
<b>Gender</b>					0.630	1	0.427
Male	15	16.9	74	83.1			
Female	32	21.1	120	78.9			
<b>Age (years)</b>					13.520	3	0.004**
20-29	8	42.1	11	57.9			
30-39	19	25.3	56	74.7			
40-49	17	17.2	82	82.8			
≥50	3	6.3	45	93.8			
<b>Ethnicity</b>					5.303	5	0.338
Malay	28	20.4	109	79.6			
Chinese	8	25.0	24	75.0			
Iban	5	13.9	31	86.1			
Bidayuh	3	10.7	25	89.3			
Melanau	2	33.3	4	66.7			
Others <sup>a</sup>	1	50.0	1	50.0			
<b>Religion</b>					4.304	2	0.116
Islam	31	19.7	126	80.3			
Christian	10	14.7	58	85.3			
Others <sup>b</sup>	6	37.5	10	62.5			
<b>Educational Level</b>					1.333	3	0.642
SPM/STPM/STAM	0	0.0	4	100.0			
Diploma	0	0.0	3	100.0			
Bachelor	43	21.0	162	79.0			
Master/ PhD	4	13.8	25	86.2			
<b>Marital Status</b>					7.298	1	0.007**
Single/ Divorced/ widowed	15	34.1	29	65.9			
Married	32	16.2	165	83.8			
<b>Household Income (RM)</b>					10.451	2	0.005**
2000-5000	20	33.9	39	66.1			
5001-8000	13	16.0	68	84.0			
>8000	14	13.9	87	86.1			
<b>Year of Experience (years)</b>					11.882	2	0.003*
0-10	23	32.4	48	67.6			
11-20	15	17.4	71	69.2			
>20	9	10.7	75	89.3			
<b>Average numbers of student</b>					0.764	2	0.694
10-20	0	0.0	1	100.0			
21-30	20	21.3	74	78.7			
>30	27	18.5	119	81.5			
<b>Teaching exam subject</b>					0.060	1	0.807
Yes	39	19.8	158	80.2			
No	8	18.2	36	81.8			
<b>Distance from home (km)</b>					3.253	3	0.352
0-20	26	16.5	132	83.5			
21-40	14	25.9	40	74.1			
41-60	5	26.3	14	73.7			
>60	2	20.0	8	80.0			

Medical illness					1.935	1	0.164
Yes	13	26.5	36	73.5			
No	34	17.7	158	82.3			
Smoking					1.003	1	0.316
Yes	1	8.3	11	91.7			
No	46	20.1	183	79.9			
Alcohol					4.903	1	0.027*
Yes	4	50.0	4	50.0			
No	43	18.5	190	81.5			
Physical activity					0.133	1	0.715
Yes	26	18.7	113	81.3			
No	21	19.9	81	79.4			
Anxiety					57.386	1	<0.001***
Anxiety	42	42.9	56	57.1			
No anxiety	5	3.5	138	96.5			
Depression					85.967	1	<0.001***
Depression	31	68.9	14	31.1			
No depression	16	8.2	180	91.8			

<sup>a</sup>Others: Kayan, Serani, <sup>b</sup>Others: Buddhist, local religion  
 \*p<0.05, \*\*p<0.01, \*\*\*p<0.001

Multiple logistic regression was carried out to determine the possible factors that could be predictors of psychological stress while controlling for cofounders. Table 4 describes the result of the multivariate analysis for the prediction relationship between

psychological stress and selected factors. Four positive predictors of psychological stress were identified, including anxiety, depression, time management, and household income. The regression model showed the anxious were 12 times more likely

Table 3: Association between psychological stress and psychosocial factors

Variables	With stress		Without stress		x <sup>2</sup>	df	p-value
	n	%	n	%			
Time management					43.222	1	<0.001***
High stressor	28	50.0	28	50.0			
Low stressor	19	10.3	166	89.7			
Work-related stressors					15.231	1	<0.001***
High stressor	33	30.6	75	69.4			
Low stressor	14	10.5	119	89.5			
Students' Discipline					20.275	1	<0.001***
High stressor	34	32.7	70	67.3			
Low stressor	13	9.5	124	90.5			
Professional Investment					23.771	1	<0.001***
High stressor	29	37.7	48	62.3			
Low stressor	18	11.0	146	89.0			
Professional Distress					17.238	1	<0.001***
High stressor	23	37.7	38	62.3			
Low stressor	24	13.3	156	86.7			

\*p<0.05, \*\*p<0.01, \*\*\*p<0.001

Table 4: Multiple logistic regression for the predictors of psychological stress

Factors	B	SE	p-value	AOR	95% CI	
Age						
20-29	1.178	1.492	0.430	3.249	0.174	60.542
30-39	0.961	1.181	0.416	2.615	0.259	26.442
40-49	1.119	0.907	0.217	3.062	0.518	18.115
≥50				1		
Religion						
Islam				1		
Christian	-0.593	0.632	0.348	0.553	0.160	1.908
Others	-0.263	1.135	0.817	0.769	0.083	7.111
Marital status						
Single/Divorced/ Widowed	-1.386	0.822	0.092	0.250	0.050	1.253
Married				1		
Household income						
2000-5000	2.084	0.805	0.010**	8.035	1.658	38.932
5001-8000	1.399	0.682	0.040*	4.050	1.064	15.418
>8000				1		
Year of experience						
0-10	0.473	1.121	0.673	1.605	0.178	14.429
11-20	-0.057	0.735	0.938	0.944	0.224	3.989
>20				1		
Medical illness						
No				1		
Yes	0.136	0.643	0.833	1.145	0.325	4.036
Alcohol						
No				1		
Yes	2.590	1.448	0.074	13.333	0.781	227.680
Anxiety						
No				1		
Yes	2.500	0.644	<0.001***	12.186	3.450	43.039
Depression						
No				1		
Yes	2.361	0.597	<0.001***	10.596	3.287	34.162
Time management						
Low stressor				1		
High stressor	1.471	0.638	0.021*	4.354	1.246	15.209
Work-related stressors						
Low stressor				1		
High stressor	-0.220	0.616	0.721	0.803	0.240	2.682
Students' Discipline						
Low stressor				1		
High stressor	0.280	0.636	0.660	1.323	0.380	4.607
Professional Investment						
Low stressor				1		
High stressor	0.439	0.608	0.471	1.551	0.471	5.108
Professional Distress						
Low stressor				1		
High stressor	0.247	0.630	0.695	1.280	0.372	4.401

B= beta coefficient, SE= standard error, AOR= adjusted odd ratio, \*p<0.05, \*\*p<0.01, \*\*\*p<0.001

to present with psychological stress than those with no anxiety. Similarly, those who were depressed were 11 times more prone to be stressed than those without depression. Meanwhile, respondents with high stressors in time management were four times more likely to be stressed compared to those with low stressors.

The respondents with household incomes of RM2,000.00 to RM5,000.00 and RM5,001.00 to RM8,000.00 were eight and four times, respectively, more likely to be stressed compared to those with more than RM8,000.00 household income per month. The maximum income was RM30,000.00. For the goodness of fit of the logistic regression model, we referred to the Hosmer-Lemeshow test. The  $p$ -value in the Hosmer-Lemeshow test was not significant, which was greater than 0.05, indicating the model fit ( $\chi^2(8) = 2.257, p = 0.972$ ). The model explained about 39.8% (Cox & Snell  $R^2 = 0.398$ ) to 63.4% (Nagelkerke  $R^2 = 0.634$ ) of the variance and correctly classified 88.8% of the psychological stress status.

## DISCUSSION

The overall prevalence of psychological stress from this study was 19.5%. This finding was similar to the study done among secondary school teachers in Penang, where the prevalence of psychological stress was 19.6% (Zamri et al. 2017). Meanwhile, in a survey among secondary school teachers in Klang, the prevalence of psychological stress was higher with 32.3% of teachers having psychological stress (Othman & Sivasubramaniam 2019).

The difference in percentage was most likely due to the dissimilarity of the school environment, school location and students' background. In comparison with other institutions, the percentage in this study was slightly lower compared to the other studies among higher institution lecturers. In a study among university staff in a local university, the prevalence of psychological stress was 21.7% with 6.7% of respondents having mild stress, 8.6% with moderate stress, and 6.5% had severe to very severe stress (Mukosolu et al. 2015). Another study by Ismail and Noor (2016) reported that the prevalence of psychological stress was 22.1% among academicians in a research university. The difference in rate between the current study and the previous studies may be due to the variations in respondents' work nature and working environment, as well as location of the institutions. In our study, most of the schools are located in rural and semi-urban areas whereas most of the higher institutions are located in urban areas.

Beside teachers and educators, other occupations such as police officers, doctors, and nurses are among the stressful jobs in Malaysia. The prevalence of psychological stress among 932 nurses in a teaching hospital was 14.4% (Ghawadra et al. 2019) and among medical officers in public hospitals was 7.9% based on DASS-21 (Yahaya et al. 2015), slightly lower than the prevalence in this study. In a different study, the prevalence of high emotional exhaustion among doctors was high (25.4%) based on the score from the Perceived Stress

Scale (Khoo et al. 2017). Meanwhile, the prevalence among police officers doubled the prevalence in this study, where 38.8% of them reported having psychological stress (Masilamani et al. 2013). This comparison suggests that different types of occupation and respondents' background can give a different outcome of psychological stress.

In the current study, the youngest age group, 20-29 years old, had the highest prevalence of stress (42.1%) compared to older age groups. A slightly different pattern seen in a study among school teachers in Klang, where those in age group 30-49 years were more stressed than those in 20-29 years group (Othman & Sivasubramaniam 2019). The younger group are usually associated with lack of experience, poorer adjustment and adaptation skills, financial issues, an early stage of marriage, and exposure to the new environment. On the other hand, a study conducted by Hadi et al. (2009) showed that the stress scores were higher among the older group. In a different study, a middle-age group teacher experienced more stress than the younger age group and older age group (Kavita & Hassan 2018). Moreover, this present study showed that teachers who were single, divorced, or widowed (34.1%) were more stressed compared to those who were married (16.2%). A similar finding was found in a study among university staff, where the prevalence was highest among the single staff (24.3%), followed by 22.2% of the widowed and 21.3% of the married staff (Mukosolu et al. 2015).

In addition, socioeconomic status is known to be related to the mental health status among the population particularly in term of educational status and household income (Meyer et al. 2014). Those with higher education and higher income group usually less likely presented with mental health issues (Meyer et al. 2014). In this study, teachers with a Bachelor degree (21.0%) were more stressed than Master or PhD degree holders (13.8%). Similar finding was found in a previous study where the stress (46.1%) was more common among secondary school teachers with the lowest educational status (Othman & Sivasubramaniam 2019).

In terms of household income, teachers with a lesser monthly income had a higher prevalence of psychological stress. This finding was in line with a previous study where the prevalence of stress was significantly higher among teachers who perceived that they received inadequate salaries (Desouky & Allam 2017). Different ranges of income are usually associated with varying degrees of commitment. Therefore, it could affect other groups in different ways depending on their lifestyle, living condition, and number of households. In general, the income inequality can negatively affects mental health as it is also associated with other social issues such as work-family balance, marital stability, and living condition (Atkinson 2015).

There was a significant association between psychological stress and anxiety and depression status. Although this may be true, these three negative emotional states could be

present concurrently, which explained the strong relationship between them ( $p$ -value $<0.001$ ). This study reported, 42.9% of teachers with anxiety and 68.9% of teachers with depression presented with psychological stress. This finding supported the results of another study done among university staff at a local university (Mukosolu et al. 2015). Depression and anxiety were commonly reported among teachers in different studies (Desouky & Allam 2017; Othman & Sivasubramaniam 2019). Since they can be present simultaneously, more specialized measurement tools can be used to determine an individual's actual mental health status. In a different study, they showed that work stress could predict the first onset of depression and anxiety (Rusli et al. 2006). In addition, a study in Pakistan among 131 teachers found that depression, anxiety and stress had a significant positive mediating effect between job strain and turnover intention (Husain et al. 2016).

Also, the current study found that teachers with high time management stressor was four times more likely to be stressed compared to those with low stressor. This finding supported a previous study where they found the time management was associated with the feeling of control over time and job strain (Jex & Elacqua 1999). A more recent study by Grissom et al. (2015) also reported that school principals with strong time management skill presented with lower psychological stress. Additionally, there was an association between time management skills and the teacher's performance at school. A previous study showed

a significant positive correlation between teacher's performance and time management techniques, namely engaging time, perceived control over time, lesson planning techniques, and pacing of instruction (Khan et al. 2016).

At the same time, the impact of teachers' time management was found to be proportionate with the students' performance (Sahito et al. 2016). Improvement in time management could improve the students' performance. Moreover, in a different study, teachers' stress had been found to affect student's performance at school and student's satisfaction (Manabete et al. 2016). Given this point, psychological stress could be a mediating factor between time management and student's performance.

In this study, there was also an association between psychological stress and work-related stressors. Teachers with the high stressor in work-related factors (23.9%) presented more frequently with psychological stress than those with the low stressor. Work-related stressors focused on workload, time constraints, personal role and additional role include administrative work. A similar finding was found in a study among university staff done by Alboliteeh (2019). In a study using the Job Content Questionnaire by Hadi et al. (2009), a similar finding was shown where there was an association between psychological stress and job demand. Increase in workload and time constraint led to chronic pressure in achieving job demand (Samad et al. 2011). In the long run, heavy workload increases the risk of burnout among

teachers (Mukundan & Ahour 2011; Mukundan & Khandehroo 2010). The workload was also a predictor for depression and anxiety among school teachers in Egypt (Desouky & Allam, 2017). Furthermore, psychological stress related to workload and working environment had a negative relationship with job satisfaction (Mwakasangula & Mwita 2020).

Overall, there are rapid changes and reformations in the education system from time to time. Therefore, every teacher must be prepared with excellent coping skills and ability to adapt to the new policy. Surveillance systems for early detection of psychological stress can be implemented at the school level. Moreover, teachers need to be more capable of managing stress to provide excellent services and outstanding performance. In addition, the multisectoral collaboration is important in managing the mental health problems among teachers. The Mental Health System must be integrated with health care services to ensure proper management and intervention can be delivered to the teachers with high risk of psychological stress or mental illness. A proper referral system from the school counsellors or health teachers to the primary care staff must be included in the program together with the follow up and continuous monitoring from both sides.

Finally, this study intended to be presented as baseline data for the local research in East Malaysia as there were limited studies with the same topic conducted in this region. Not to mention, it could be used as a

comparison study between West and East Malaysia. Besides, this study was envisioned to be used as evidence to help in intervention development. This study design lies in its repeatability in other regions, covering all factors within the workplace, and enabling comparisons to be made. The final analysis identified four positive predictors, namely household income, anxiety, depression and time management. Selection of the intervention must be based on the risk factors and severity of the psychological stress.

However, being a cross-sectional study where the causation association cannot be proven, the result may not be conclusive for certain risk factors. This limitation can be improved by conducting a cohort study for selected elements in the future. Apart from that, there were small numbers of variables for occupational characteristics, which led to the partial understanding of occupational factors and its association with psychological stress. The use of more specific instruments could improve the outcome of the study.

In addition, more factors should be included in future studies mainly on the organisational factors, work-related factors, social interaction, and coping skills. Other methods of measuring the level of stress, such as heart rate, blood pressure and salivary cortisol level, can be included to give more supporting evidence of psychological stress. Besides, the related factors such as job satisfaction, burnout, turnover intention, absenteeism and presenteeism can be explored further in understanding the effects

of psychological stress. These factors could help the authorities to understand more about the possible risk factors and impacts of psychological stress and subsequently assist them in the planning and development of the mental health program.

## CONCLUSION

In conclusion, the burden of psychological stress among school teachers can be associated with either individual factors or work-related factors. Given this, the responsibility in managing psychological stress among teachers does not lie with the individual but at every level in the organization: namely school administration, the District Education Office and the Ministry of Education. Surveillance systems for early detection of psychological stress can be implemented at the school level. In addition, multisectoral collaboration is important in managing the mental health problems among teachers.

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