

A Call for a New Stress Index for Malaysian Teachers: A Systematic Review of Studies of Stress among Teachers in Malaysia

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Abstract

Stress is an issue that has been plaguing the teaching profession in Malaysia. Past studies have shown evidence that workplace stress has a detrimental effect in terms of the health of the employee, as well as the productivity and the economic stability of the country. According to the transactional view of stress, stress is manifested through the person's interpretation of a stressor, and coping mechanism is deployed to handle stress. When coping mechanism fails, the symptoms of stress will start to occur on individuals. This study looked into stress from the transactional view and employed a systematic literature review that looks into stressors, coping mechanisms and the effects of stress. The systematic literature found 29 articles and the findings found that teachers stress is a critical issue in this country caused by numerous stressors. It was also found that studies concerning coping mechanism among teachers were scarce, and stress can have a detrimental effect on teachers' physical health, mental health and professional development. The study concluded by suggesting the development of a new stress index among Malaysian teachers, to help future researchers, teachers, school administrators, and other related parties to look at stress from the full perspectives, rather than just focusing on one aspect of stress.

Keywords: stress, teachers stress, stress index, stressors, coping mechanism, effects of stress

1. Introduction

The World Health Organisation (2007) termed workplace stress or work-related stress as the response people may have when presented with work demands and pressures that are not matched to their knowledge and abilities, which challenge their ability to cope (World Health Organization, 2007). In a workplace setting, stress can be manifested from a variety of causes, or commonly known as stressors. Particularly, stress in the workplace can be caused by interactions among workers, or the environment of the workplace (Naghieh A, Montgomery P, Bonell CP, Thompson M, Aber JL., 2015). Stress is normally treated as a common obstacle in a workplace, but if it is not properly managed, it can cause detrimental effects to the society, whether in productivity, financially or in health perspectives (Whitehead, 2001). Besides, workplace stress can influence economic growth. In Malaysia, a report compiled by the AIA Vitality in 2019 has shown that workplace stress has caused employers to lose an average of 73.3 days of work time per employee in a year due to absence and presenteeism, accounted for RM 1.46 million loss on productivity per year on average (AIA Vitality, 2019). Many workers are suffering from workplace stress, and teachers are no exception.

Teachers usually work with people with different personalities, positions, power and skills and they cannot escape the frequent interaction and co-operation (Hassard, J., Teoh, K. R., Visockaite, G., Dewe, P., & Cox, T, 2018). Other than social interaction, the environment of a school is challenging as well, and the constant dealings with students can be mentally and physically demanding (Haggard, C., Slostad, F., & Winterton, S., 2006). In Malaysia, the education system has been through numerous changes over a short time, and these changes have affected the teachers. Teachers are constantly playing catch up to these changes, sometimes before they get used to the previous changes made by the Ministry of Education (Abdul Muin, 2005). Based on the current situation, it is imperative for Malaysia, particularly the Ministry of Education, the Ministry of Health and the school administration to understand the issue of stress among teachers.

This study was conducted based on the notion that teachers in Malaysia are dealing with a high level of stress, and there are still grey areas that have not been revealed regarding this phenomenon. This study postulates that to aid teachers in understanding the dynamic of workplace stress and stress management, a new index that explains stress among teachers is needed. Furthermore, this study was driven to respond to the aspiration to make Malaysia a prosperous nation that can compete on a global scale. This aspiration means that the role of teachers in the education sector cannot be overlooked. As the goal of Education in Malaysia is to lead Malaysians to have a balanced life, teachers are the agents for advocating this aspiration. Therefore, it is imperative that teachers are balanced and stress-free, to help the nation and school and ultimately Malaysia to become a developed nation in the world.

One of the models developed under the field of stress is called the transactional model of stress, that focuses on stressor, coping mechanism and effect of stress. Therefore, by founding this study on the transactional model of stress, the main objective of the study is to review i) past studies regarding stressors in Malaysia, ii) past studies regarding coping mechanism among teachers in Malaysia and iii) past studies regarding the effects of stress among teachers in. This study employed the systematic literature approach to present an overview of stress among teachers in Malaysia and used the finding of the systematic review as the basis of the need of developing a stress index for teachers in Malaysia to help Malaysians to understand this issue further.

2. Literature Review

2.1 Transactional Perspectives of Stress

(Lazarus, 1966) believed that stress is produced from threat and the appraisal of threat. Threats must be first appraised by an individual as a stressor, and once the stressor is established, the body reacts by producing the coping mechanism to deal with the threat. Transactional perspective refuses to see that human will react to stress in the same way, as proposed by the internal and the external views. Instead, this perspective believes that human will respond to stress as an active and sentient agent, capable of making judgement and reacting to his or her surroundings. Stress is a dynamic cognitive stage and an attempt to restore the body to the balanced or homeostasis state (Dewe, P.J., Cox.T., & Ferguson, E., 1993)

The process of stress based on interaction approach is best seen from the model introduced by (Sutherland, 1990), seen in Fig. 1. below. In this model, stress is the outcome of two interacting systems (environment and individual), and stress is produced when an individual can no longer withstand the magnitude of the stress stimuli. As a response to stress, a person will start to deploy coping mechanism, defined as ways used to mediate the reaction and response to stress. When coping mechanism fails, that is when the symptoms of stress will start to occur, seen in psychological, physiological and biological effects, whether in long-term or short-term effects.

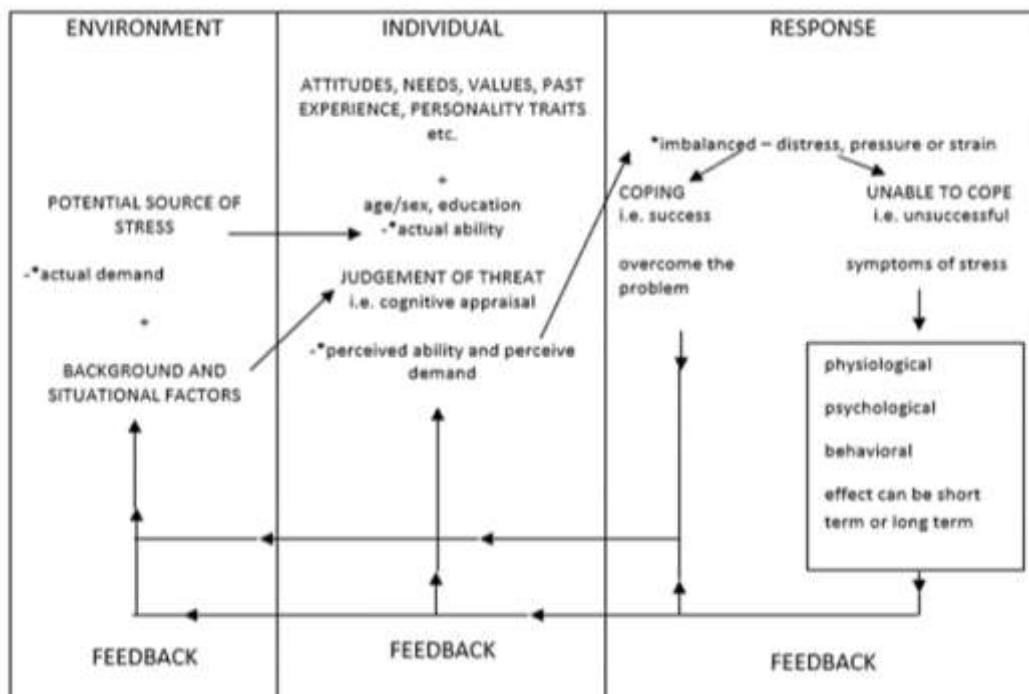


Figure 1. Transactional Model of Stress (Sutherland, 1990)

3. Methodology

3.1 Systematic Review

A systematic review was carried out to identify past studies of teachers stress and teachers stress management in Malaysia that was published between January 2000 to June 2020. This systematic review was conducted using three electronic databases, including Google Scholar, PubMed and Scholar.

3.2 Eligibility Criteria

The eligibility of the articles must meet the following criteria: [1] studies carried out in Malaysia; [2] articles with available full text; [3] articles written in Malay or English language; [4] the subjects of the study are teachers in the Primary and Secondary schools and; [5] articles with the keywords detailed in Table 1.

Table 1. Eligibility Criteria

Subject	Teacher / primary schools / secondary schools/
Stressors	Stressors / causes stress / stress variables
OR	
Coping mechanism	Coping mechanism/ stress management
OR	
Effects of stress	Effect of stress
AND	
Malaysia	

3.3 Selection of Literature (Screening and Eligibility)

Following a comprehensive literature search of three electronic databases, the relevant literature identified using the keywords in Table 1 were recorded. Studies which were conducted outside Malaysia, without available full texts, not written in English or Malay and irrelevant studies were excluded from this review using the filtering tool of the database. From the remaining records, other additional articles were also sourced from the reference lists of each study, based on the title, abstract, keywords, and statement in eligibility criteria. Studies with irrelevant information, duplicated publications, and review articles were removed. The flowchart of the review process is shown in Figure 2.

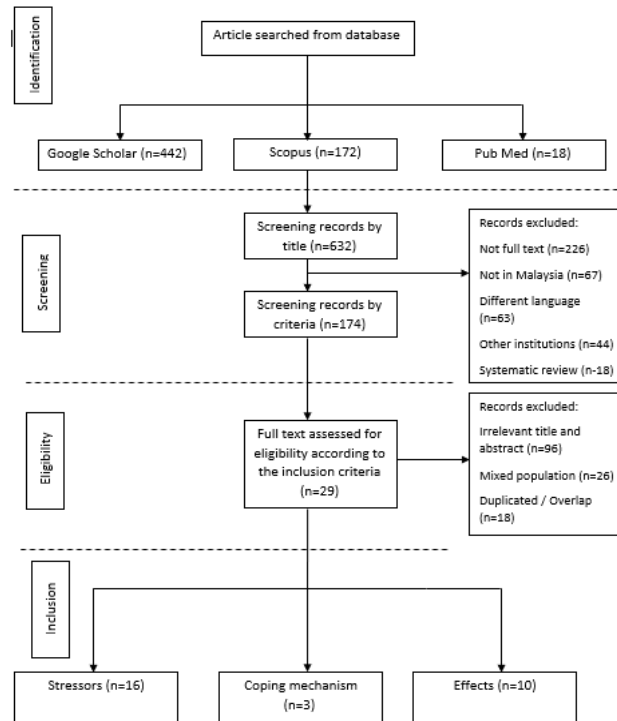


Figure 2. Flowchart of the review process

3.4 Quality Assessment of the Literature

A quality assessment was carried out by the researchers on the selected articles using the modified assessment tools as described by Tai et al. (2019). The quality assessment tool consisted of seven items (quality markers), as shown in Table 2 below. The assessment was adapted from (Tai, K. L., Ng, Y. G., & Lim, P. Y., 2015).

Table 2. Quality markers

Item	Quality markers	Description
1	Sample definition	The target definition was defined clearly
2	Recruitment	Complete, random or consecutive recruitment (sampling)
3	Representative sample	The targeted sample is representative, or the report presents evidence that the results can be generalised to the educators
4	Response rate	The response rate was equal or greater than 70%
5	Scale	The scale used is a validated measure of illness and stress (validated instrument)
6	Sample size	The sample size is adequate with a minimum sample size of 300
7	Confidence intervals (CI) or sample error (SE)	The confidence intervals (CI) and sample error (SE) are reported

4. Results

4.1 Summary of the Reviews

In the 29 articles reviewed, most studies used secondary school teachers as their population. Some study studied specific population among teachers, including 2 studies involving music teachers, and one study involving Private school teachers, Tamil schoolteachers, Science teachers, PT3 teachers and Special Education teachers. Table 3.0 presents a summary of the review of all 29 papers.

Table 3. Summary of the papers

Factors	Author & Year	Study population & sample size	Methodology / instrument	Variables	Findings
Stressor	(Abu, B. & Aziz, M., 2010)	Secondary school teachers (95)	Self-written instrument (survey)	School administration Job demand Students' behaviour	School administration has low influence on stress Students' behaviour has moderate influence on stress Job demand has high influence on stress
	(Ambo tang, A.S., & Bayong, N., 2018)	Primary school teachers (207)	Self-administered instrument (survey)	Responsibilities Work demand Work commitment	Responsibilities highly influenced stress (mean score: 3.31), Work demand highly influenced stress (mean score: 3.70) Work commitment highly influenced stress (mean score: 3.58)
	(Ambo tang, A.S, Pilus, N., Andin, C., 2014)	Secondary school teachers (282)	Self-administered instrument (survey)	Students' behaviour Job demand	No correlation between stress and gender, age, education level, experience Moderate correlation between students' behaviour and teachers stress (r=0.531) High correlation between job demands and teachers stress (r=0.702)
	(Bakar, M.K.B.A., &	School teachers	Multidimensional	School	High correlation was found

	Alias, B.S., 2020)	(132)	leadership: (adapted from Leadership Oriental instrument) Job Satisfaction (adapted from Job Satisfaction ERG Alderfer)	administration	between leadership approach and teachers' satisfaction. Good leadership would reduce teachers stress
	(Hadi, A.A, Naing, N.N., Daud, A., Nordin, R. & Sulong, M.R, 2009)	Secondary school teachers (580)	Job Satisfaction: JSQ (Kerasek) Stress: DASS-21	Age Job demand	Prevalence of stress: Normal: 66%, Mild (17.4%) Moderate (8.1%) Severe (5.1%) Extremely severe (3.4%) Younger teachers are more prone to stress Significant relationship between job demand and stress (p-value: 0.027, at r ² : 0.03)
	(Halim, L. Samsudin, M.A., Maerah, T.S.M., & Osman, K., 2006)	Secondary school science teachers (58)	Occupational stress inventory (Okebukola, 1998) Semi-structured interview	Curriculum Facilities Students' characteristic School administration Professional Growth and self-satisfaction	Highest perceived stressor for curriculum (difficult topics) Highest perceived stressor for facilities (lack of materials in lab) Highest perceived stressor in students' characteristic (students' carelessness in lab) Highest perceived stressor in school administration: Principal reluctance in disciplining students Highest perceived stressor in professional growth and self-satisfaction: delay in promotion Interview findings: overload science syllabus, lack of support for coping strategies
	(Hassan, N., Yaakob, S.A, Halif, M.M., Aziz, R.A., Majid A.A., & Sumardi, N.A., 2019)	School teachers (173)	Survey: /Technostress Creators scale (Tarafdar et.al, 2007)	Techno-overload Techno-invasion Techno-complexity Techno-insecurity Techno-uncertainty	Significant stressors: Techno-uncertainty (B= .356, p<.05) Techno-insecurity (B= .199, p<.05)
	(Jamaludin, J. & Ghazali, G.M. (2012)., 2012)	Music teachers (8)	Qualitative (open-ended response)		Teachers were found to be generally satisfied with their job 7 respondents cited administrative job as a stressor 3 respondents cited students' discipline as a stressor
	(Jan, C.C., & Jamaludin, J., 2010)	Music teachers (326)	Music Teacher Stress Inventory -MTSI)		Highest stressor: TC (overall mean: 2.79, std: .87 Lowest stressor: SyC (overall

					mean: 2.56, std: .81 Stress is not related to gender, teachers' expertise, experience and qualification
	(Karunanithi, G. & Suberamaniam, K., 2015)	Tamil Primary School Teachers (240)	DASS 21	Stress level	Overall stress level among rural teacher: mild (DASS score: 18.28) Overall stress level among urban teacher: moderate (DASS score 20.28)
	(Kavita, K., & Hassan, N.C., 2018)	Primary and secondary school teachers (n=268)	Teachers' Stress Inventory (TSI)	Education level Age	Stress level is rated at intermediate No significant relationship between stress and education level Significance relationship between age and stress (middle-age teacher 31-50 years experienced more stress than younger (20-30 years and (51-60 years)
	(Marmaya, N.H., & Wafa, S.A., 2009)	Teachers (177)	Job Stress Inventory	Role conflict Blocked career Job stress	Low level of stress was found among respondents No significant difference between age, gender and marital status with stress
	(Raman, B. & Othman, N., 2017)	PT3 teachers (n=100)	Self-administered instrument	Workload	Stress level among teachers was rated as moderate Significant influence was found between workload and stress
	(Mohd. Razali & Abang Mat Ali, 2000)	Secondary school teachers (n=380)	School and Staffing Survey (SASS),	Academic burden Non-academic burden	Stressors: Managing lesson plan Managing students' affairs
	(Yaacob, M., & Choi, S.L., 2015)	Teachers (n=386)	Occupational Roles Questionnaires (ORQ) Occupational Stress Indicator (OSI)	Role overload Role ambiguity Work-family conflict	Overall workplace stress was found to be high (mean score 3.80, SD=0.38) Teachers were found to have high level of role ambiguity stressor (mean score 4.00, SD=0.67) and role overload stressor (mean score 3.80, SD=0.38) Teachers were found to have moderate level of work-family conflict stressor (mean score= 3.44, SD=0.49)
	(Yacob, Z.M., & Abdullah, Z., 2015)	Schoolteacher (n=70)	Leader Behaviour Analysis II (LBII) for leadership style Job-Related Stress questionnaire for workplace stress	Female leadership quality Students' discipline Workload Interpersonal relationship Work environment Appreciation	No correlation between female leadership and stress Teachers were found to have moderate level of stress from all variables students' discipline, mean score 3.54 workload, mean score 3.06 interpersonal relationship, mean score 2.86 work environment, mean score

					2.81 appreciation mean score 2.72
	(Yusof, 2011)	Primary school teachers (n=200)	The Leader Behaviour Description Questionnaire (LBDQ) for leadership variable Self-administered survey for stress	Structural dimension leadership style Considerate dimension leadership style	Stress among teachers was found at moderate level (mean score 3.20) Moderate correlation between stress and structural dimension leadership style (r=0.433, p=0.000) Moderate correlation between stress and considerate dimension leadership style (r=0.413, p=0.000)
	(Ghani, M.Z., & Ahmad, A., & Ibrahim, S., 2013)	Special education teachers (n=92)	Teacher Stress Inventory (TSI)	Students misbehaviour Teacher workload Time and resource difficulties Interpersonal relationship Recognition	Moderate relationship was found between all variables and teachers stress Stress was not related to age (t-test 0.43, at p<0.05) Stress was not related to marriage status (t-test 0.83, p<0.05)
Coping mechanism	(Abu, B. & Aziz, M., 2010)	Secondary school teachers (95)	Self-written instrument (survey)	Evaluation based approach Emotional based approach Problem-based approach	High influence coping mechanism: Evaluation based approach Moderate influence coping mechanism: Emotional based approach Moderate influence coping mechanism: Problem based approach
	(Alizadegani, F., Zaini, M.F., & Delavari, G., 2014)	Private school teachers (2)	Qualitative (Semi-structured Interview)		Coping mechanism: Understanding their source of stressors Allowing students' participation Prioritising job demand Pride in work Effective students' management Effective emotion control
	(Al-Naggar, R.A, Jawad, A.A & Bobryshev, Y.V, 2012)	Secondary School teacher (495)	School-based cross-sectional study / self-administered survey	Smoking tendency	Prevalence of smoking: 7.8% Reasons to start smoking: 70.8% coping mechanism, 16.7% job dissatisfaction Married or divorced male teachers are more prone to pick up smoking
	(Jamaludin, J. & Ghazali, G.M. (2012), 2012)	Music teachers (8)	Qualitative (open-ended response)		Coping mechanism strategies: problem sharing with spouse and colleagues establishing rapport and expertise with administration and colleagues
	(Karunanithi, G. & Suberamaniam, K., 2015)	Tamil Primary School Teachers (240)	Ways of Coping (Consulting Psychologists Session	Confrontation Distancing	Highest coping mechanisms used by rural teachers: planful coping mechanism (average: 15%), positive reappraisal (14%),

				Self-controlling Social support Accepting responsibilities Escape-Avoidance Planful Problem Solving Positive Reappraisal	self-controlling (13%) Highest coping mechanisms used by urban teachers: accepting responsibilities (average: 20%), planful problem solving (16%), positive reappraisal (15%)
	(Mohd. Razali & Abang Mat Ali, 2000)	Secondary school teachers (209)	Survey/ Cockburn (1996)	Coping mechanism abilities Coping mechanism awareness Coping mechanism knowledge	Stress prevalence: moderate Top-rated coping mechanism ensuring content delivery in classroom (73.8%), learning to forgive oneself and learning from mistake (64.4%), talking to other teachers (54.6%) Teachers awareness of coping strategy is high
Effect	(Hadi, A.A, Naing, N.N., Daud, A., Nordin, R. & Sulong, M.R, 2009)	Secondary school teachers (580)	Job Satisfaction: (Job Content Questionnaire – JSQ from Kerasek (1997) Depression: DASS-21	Depression	Prevalence of depression: 49.1% Overall level of depression: mild (21%) Job-related factors is not highly correlated with depression prevalence (psychological job demand p-value: 0.015) Depression is highly correlated with working hours (p-value: 0.932)
	(Masilamani, R. Darus, A. Ting A.S., Ali, R., Mahmud, A.B., & David, K., 2012)	Secondary school teacher (n=471)	Job Content Questionnaire (Kerasek,	Salivary biomarkers	Prevalence of stress among teachers = 20.2% Higher prevalence of stress among Malay, teaching experience of 5-10 years and no supervisor support Lower salivary IgA levels were found among highly stressed teacher (lower IgA is associated with lower immune efficiency)
	(Musa, N.A., Moy, F.M., & Wong, L.P, 2018)	Secondary school teacher (n=1871)	Sleep Quality Pittsburgh Sleep Quality Index (M-PSQI) Stress: DASS-21	Sleep quality	Teachers stress are found to be associated with poor sleep quality (OR 1.04; 95% CI 1.02-10.5%) One-third of participants reported mild sleep disturbance and mild day dysfunction due to sleep disturbance
	(Othman, Z. & Sivasubramaniam, V., 2019)	Secondary school teachers (n=356)	DASS 21	Depression Anxiety	Prevalence of stress = 32.3% Prevalence of Depression = 43.0% Prevalence of Anxiety = 68.0% Stress, depression and anxiety were found more common among female, low education status, and have 1-3 children
	(Salahudin, S.N.,	Secondary school	Self-administered	Job turnover	Stress was found to be more

Abdullah M.M., Hitam, S., & Idrus, D., 2007)Salahuddin et.al	teachers (n=150)	questionnaire		significant in female teachers than male teachers Older teachers were found to demonstrate stress than younger teachers There is a positive and significant correlation between occupational stress and job turnover (r-value=0.607, p-value=0.0005)
(Yaacob, M., & Choi, S.L., 2015)	Teachers (n=386)	Occupational Roles Questionnaires (ORQ) from Wu et.al (2010) Occupational Stress Indicator (OSI) from Chang and Lu	Job satisfaction	Teachers who experienced higher workplace stress will experience lower job satisfaction
(Zamri, E.N., Moy, F.M., & Hoe, V.C., 2017)	Secondary school teachers (n=1482)	Nordic Musculoskeletal Questionnaire (MSP) for Musculoskeletal DASS 21 for stress	Low back pain (LBP) Neck/ shoulder pain (NSP)	Prevalence in self-reported LBP in 12 months 48.0% (95% CI: 45.2, 50.9) Prevalence in self-reported NSP in 12 months 60.1% (95% CI: 57.4, 62.9) Pain is more prevalent among teachers with > 15 years' experience, teaching > 4 hours/ day and spent <5 hours/day in administrative work
(Zarisfizadeh, 2012)	English language teachers (n=35)	TEJOSAMOQ (Teachers' Job Satisfaction and Motivation Questionnaire by Ololub 2016)	Job satisfaction	Stress due to high workload leads to low job satisfaction

The quality assessment scores of the 29 articles ranged from 2 to 7, with a mean of 4.50 (SD = 1.22). The overall sample size in this review was 8967 respondents, with a minimum sample of 2 and a maximum of 1871. Not all papers disclosed the sex of the respondents, but most respondents were made up of about 65% of female teachers and male teachers. The papers included teachers from vast experience from 5 years' experience to 15 years' experience. Most papers have a high response rate and used many variables in terms of stressor, coping mechanism and effects of stress.

4.2 Prevalence of Stress among Teachers

Before the review of the factors of stress, it is important that to establish that past studies have found evidence of the prevalence of stress among teachers. The majority of the study have concluded that teachers were suffering from stress, whether low, moderate or high. Even though not all study presented an overall level of stress, in summary, two studies suggested that teachers were suffering from the low level of stress, while other studies suggested a moderate and high level of stress.

Another interesting finding found in the review is numerous study attempted to established biographical variables to stress, and the results were mixed. Some studies found no correlation between gender and stress, but two studies suggested that stress was more likely to occur among female teachers. Some studies suggested that age does not influence stress, except for two studies that found that stress was more likely to occur among middle-aged teachers with 5-10 years' experience. In terms of experience, qualification and marital status, the studies found no correlation between these variables and stress.

4.3 Stressors

In terms of stressors, the most mentioned stressor is job demand as it was found in seven studies, with five studies found high influence between job demand and stress and two studies found a moderate influence of job demand with stress. The second most mentioned stressor was students' behaviour, and all studies mentioned moderate influence of students' behaviour on stress. Another common stressor was school administration, with mixed result. Some study found a low influence of school administration with stress, and others found a moderate and high influence of school administration with stress. One interesting finding was found in a qualitative study was the principle's refusal to interfere with was found to be one of the stressors among teachers. In terms of specific finding, one study focused on technostress and found that teachers who were uncertain and insecure about tech were stressful. In summary, although it was not entirely established, teachers' main stressors were seen mostly in their job responsibilities, suggesting that teachers nowadays that overworked, or was not taught effective work management strategies.

4.4 Coping Mechanism

In terms of coping mechanism, it was found that studies that focus on coping mechanism were scarce. Only three studies put coping mechanism as their main focus of the study, while the rest of the findings on coping mechanism were found from other studies that mentioned coping mechanism as the additional findings. The studies of the coping mechanism showed that teachers employed positive coping mechanism strategies, except one study that showed a negative coping mechanism strategy employed by teachers, smoking habit. Some of the positive coping mechanisms mentioned are evaluating problems and their stressors, and communicating with others, whether their spouse or colleague. For the smoking habit, the prevalence of teachers to start smoking was found to be 7.8 per cent, and it was found to be more influential among married or divorced male teachers. As there was a significantly low study on coping mechanism, it was difficult to assert which coping mechanism was found to be effective to manage teachers stress.

4.5 Effects of Stress

In terms of coping mechanism, three types of stress effects were found, physical effect, mental effect and professional effect. In terms of physical effect, stressful teachers were found to suffer from musculoskeletal pains and sleeping disorder. One study suggested that stress would lower immune efficiency, seen in lower IgA salivary level. For mental effect, teachers who suffered from stress were prone to have depression and anxiety and professional effect, stress was found to affect their job satisfaction and can influence job turnover among teachers. From this study, it can be concluded that quick action must be taken to ensure that teachers stress would not cause more devastating and long-lasting effects on teachers.

5. Discussion and Conclusion

The review process found several gaps in past studies on teachers stress. The first gap found was the use of instruments in the study of teachers stress. The review found several noted instruments such as DASS 21, TSI and Karasek Job Satisfaction, but other studies employed self-administered instruments were not validated for reliability and validity. Therefore, the results of the findings can be questioned. Secondly, these studies have established job demands, students' behaviour and administration as the main sources of stress, but the lack of studies means that there is a possibility of undiscovered stressors among teachers. The third gap found in the review is as mentioned previously, studies about coping mechanism were extremely low, and during the identification process, the search result found more studies of coping mechanism among students and higher education academicians. Another gap found in the study of coping mechanism is while the studies described coping mechanism practised by teachers, none of the studies has extended the study to see the level of success of practising the suggested coping mechanism. Therefore, the effectiveness of these coping mechanisms was not established. The lack of study also showed the possibilities of undiscovered coping mechanism among teachers. In terms of the effect of stress, it was found that the studies found clear evidence of the physical effect of stress, as these studies have established their validity of the result. However, the same cannot be concluded for the most mental effect and professional effect of stress. Another gap was that there were no studies that looked into the effect of stress on teachers' efficiency in delivering their responsibilities. A study that looks into how stress affects job performance of teachers needs to be conducted because the effect of stress needs to be seen not only from the teachers' perspective but also from the students' perspective because there is no escaping students influence in a teacher's job.

The review has provided a strong basis for the development of a new stress index for teachers in Malaysia. The disparity of studies of stress among teachers in terms of stressor, coping mechanism, and effect suggested that there is an absence of instrument that is capable of measuring all three factors at once. Therefore, a new index that

measures teachers stress using the three factors is crucial. Also, in the process of developing the instrument, a study that determines the variables in the instrument will be conducted in an in-depth perspective, gathered from teachers, administrators, healthcare professionals and other relevant parties. That type of study will open a huge door of discovery and can clear any misunderstanding or misconception of stress among teachers.

The suggestion for the development of a new stress index is as below:

1. The stress index is divided into three variables: identifying the stressor, identifying coping mechanism, and identifying the effect of stress. The process of determining the variables could be done by employing studies that aim to find the most influential variables in terms of stressors, coping mechanisms and effects of stress. Input can be gathered from teachers, school administrators, healthcare professionals, and other related parties.
2. The presentation of the result will be seen from triumvirate perspectives, the stressors, the coping mechanism and the effect. By presenting the result from this perspective, one can see the state of stress in teachers in the whole view. Furthermore, supporting measures can be designed based on the result of the index, rather than deploying a one size fits all method in helping teachers to manage their stress.

In conclusion, it was found that the studies of stress among teachers need to be expanded, and there are still more stressors, coping mechanisms and effects of stress that need to be uncovered in future studies. These can be achieved in the course of developing a new stress index, as the development of a new stress index will require a series of studies that will look at stress in a deeper context and open the opportunity for more knowledge and discovery about the issue of stress among teachers.

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References

- Abdul, M. S. (2005, August 18). Stres Guru Membimbangkan - Akibat Banyak Perubahan dan Bebanan Tugas Yang Keterlaluan. *Stres Guru Membimbangkan - Akibat Banyak Perubahan dan Bebanan Tugas Yang Keterlaluan*. NUTP.
- Abu, B., & Aziz, M. (2010). Stress Dalam Kalangan Guru di Dua Buah Sekolah Menengah Kebangsaan di kawasan Skudai. *Fakulti Pendidikan, Universiti Teknologi Malaysia, Skudai*.
- AIA, V. (2019). *Malaysian Workforce: Sleepless and Overworked?* Kuala Lumpur: AIA Group Limited.
- Alizadegani, F., Zaini, M. F., & Delavari, G. (2014). Stress free and self-esteem: approaches of motivation towards teachers and school students. *Procedia-Social and Behavioral Sciences*, 114, 711-714. <https://doi.org/10.1016/j.sbspro.2013.12.772>
- Al-Naggar, R. A., Jawad, A. A., & Bobryshev, Y. V. (2012). Prevalence of cigarette smoking and associated factors among secondary school teachers in Malaysia. *Asian Pacific Journal of Cancer Prevention: APJCP*, 5539-5543. <https://doi.org/10.7314/apjcp.2012.12.11.5539>
- Ambotang, A. S., Pilus, N., & Andin, C. (2014). Hubungan Karenah Pelajar dan Beban Tugas Dengan Tahap Stress Guru di Sekolah Menengah. *Jurnal Kinabalu*.
- Ambotang, A. S., & Bayong, N. (2018). The Relationship between the Burden of Duties and Stress Towards Teacher's Commitment at the Primary School. *Jurnal Bitara UPSI*, 11(1), 11-21.
- Anna, C. P., Douglas, C., Mark, T. D., & Geoff, D. (2015). Salivary Immunoglobulin A Secretion Rate is negatively associated with Cancer Mortality: The West of Scotland Twenty-07 Study. *PLoS One*, 10(12). <https://doi.org/10.1371/journal.pone.0145083>
- Bakar, M. K. B. A., & Alias, B. S. (2020). Hubungan antara Kepimpinan Multidimensi Guru Besar dan Kepuasan Kerja Guru. *Jurnal Pendidikan Malaysia*, 45(1SI), 35-41.
- Cannon, W. (1935). Stresses and Strain of Homeostatis. *American Journal of Science*, 189, 1. <https://doi.org/10.1097/00000441-193501000-00001>
- Cox, T., & Mckay. (1991). Individual Differences, Stress and Coping. In R. P. C.L Cooper, *Personality and Stress: Individual Differences and the Stress Process*. Chichester: Wiley.
- Dewe, P. J., Cox, T., & Ferguson, E. (1993). Individual Strategies for Coping with Stress at Work. *Work & Stress*, 7, Published by Sciedu Press

5-15. <https://doi.org/10.1080/02678379308257046>

- Ghani, M. Z., & Ahmad, A., & Ibrahim, S. (2013). Stress among Special Education Teachers in Malaysia. *4th World Conference on Psychology, Counselling and Guidance WCPCG-2013* (pp. 4-13). Elsevier Ltd. <https://doi.org/10.1016/j.sbspro.2013.12.648>
- Gold, Y., & Roth, R. A. (1993). *Teachers Managing Stress and Preventing Burnout. The Professional Health Solution*. London: Falmer Press.
- Goodell, H., Wolf, S., & Rodgers, F. B. (1986). Historical Perspective. In A. F. S. Wolf, *Occupational Stress. Health and Performance at Work*. Littleton, Massachusetts: PSG Inc.
- Hadi, A. A., Naing, N. N., Daud, A., Nordin, R., & Sulong, M. R. (2009). Prevalance and factors associated with stress among secondary school teachers in Kota Bharu, Kelantan, Malaysia. *The Southeast Asian Journal of Tropical Medicine and Public Health*, 40(6), 1359-1370.
- Hadi, A. A., Naing, N. N., Daud, A., & Nordin, R. (2008). Work related depression among secondary school teachers in Kota Bharu, Kelantan. *International Medical Journal - Tokyo*, 15(2), 145.
- Haggard, C., Slostad, F., & Winterton, S. (2006). Transition to the school as workplace: Challenges of second career teachers. *Teaching Education*, 17(4), 317-327. <https://doi.org/10.1080/10476210601017410>
- Halim, L., Samsudin, M. A., Maerah, T. S. M., & Osman, K. (2006). Measuring science teachers' stress level triggered by multiple stressful conditions. *International Journal of Science and Mathematics education*, 4(4), 727,739. <https://doi.org/10.1007/s10763-005-9020-9>
- Hassan, N., Yaakob, S. A., Halif, M. M., Aziz, R. A., Majid A. A., & Sumardi, N. A. (2019). The effects of technostress creators and organizational commitment among school teachers. *Asian Journal of University Education*, 15(3), 92-102. <https://doi.org/10.24191/ajue.v15i3.7563>
- Hassard, J., Teoh, K. R., Visockaite, G., Dewe, P., & Cox, T. (2018). The cost of work-related stress to society: A systematic review. *Journal of occupational health psychology*, 23(1),1. <https://doi.org/10.1037/ocp0000069>
- Ibrahim, J., & Chua, Y. P. (2017). The influence of principals' leadership behaviours on work stress of secondary school teachers in Melaka. *Educational Leader (Pemimpin Pendidikan)*, 5, 59-74.
- Jamaludin, J., & Ghazali, G. M. (2012). (2012). Job satisfaction and stress among secondary school music teachers in Malaysia. *Malaysian Journal of Music*, 1(2), 72-86.
- Jan, C. C., & Jamaludin, J. (2010). Stress in Music Teaching: Identifying the Level and Sources of Stress in the Context of Malaysian Primary Schools. *Pertanika Journal of Social Sciences & Humanities*, 18(1).
- Karunanithi, G., & Suberamaniam, K. (2015). A Study on Stress Level and Coping Stretegic among Primary Tamil School Teachers. *PEOPLE: International Journal of Social Sciences*, 1, 1206-1220. <https://doi.org/10.20319/pijss.2015.s21.13061320>
- Kavita, K., & Hassan, N. C. (2018). Work Stress among Teachers: A comparison between Primary and Secondary School Teachers. *International Journal of Academic Research in Progressive Education and Development*, 7(4), 60-66. <https://doi.org/10.6007/IJARPED/v7-i4/4802>
- Lazarus, R. S., & Launier, R. (1978). Stress Related Transactions Between Person and Environment. In L. P. (Eds.), *Perspectives in Interactional Psychology*. New York : Plenum. https://doi.org/10.1007/978-1-4613-3997-7_12
- Lazarus. (1966). *Psychological Stress and the Coping Process*. New York: McGraw-Hill.
- Marmaya, N. H., & Wafa, S. A. (2009). The role of demographic variables as the moderator between organizational variables and job stress among teachers in Sabah. *Social and Management Research Journal*, 6(1), 1-13. <https://doi.org/10.24191/smrj.v6i1.5165>
- Masilamani, R. Darus, A., Ting A. S., Ali, R., Mahmud, A. B., & David, K. (2012). Salivary biomarkers of Stress among teachers in an urban setting. *Asia-Pacific Journal of Public Health*, 24(2), 278-287. <https://doi.org/10.1177/1010539510393725>
- Mohd, R., & Abang, M. A. (2000). Strategi Menangani tekanan di kalangan guru-guru sekolah menengah Zon A dibahagian Kuching/Samarahan, Sarawak. Satu Tinjauan. *Projek Sarjana Muda Pendidikan*. Universiti Sarawak Malaysia.
- Moy, F., Hoe, V. C., Hairi, N. N., Chu, A. H., Bulgiba, A., & Koh, D. (2015). Determinants and Effects of Voice

- Disorders among Secondary School Teachers in Peninsular Malaysia Using a Validated Malay Version of VHI-10. *Plos One*, 10(11), e0141963. <https://doi.org/10.1371/journal.pone.0141963>
- Musa, N. A., Moy, F. M., & Wong, L. P. (2018). Prevalence and factors associated with poor sleep quality among secondary school teachers in a developing country. *Industrial health*. <https://doi.org/10.2486/indhealth.2018-0052>
- Mustapha, R. (2009). Job Satisfaction among vocational teachers in Malaysia. *EDUCARE*, 1(2).
- Naghieh, A., Montgomery, P., Bonell, C. P., Thompson, M., & Aber, J. L. (2015). Organisational interventions for improving wellbeing and reducing work-related stress in teachers. *Cochrane Database of Systematic Reviews* 2015, 4. Art. No.: CD010306. <https://doi.org/10.1002/14651858.CD010306.pub2>
- Newton, T., Handy, J., & Fineman, S. (1995). *Managing Stress: Emotions and Power at Work*. London: Sage Publications.
- Othman, Z., & Sivasubramaniam, V. (2019). Depression, anxiety, and stress among secondary school teachers in Klang, Malaysia. *Int Med J*, 26(2), 71-74.
- Raman, B., & Othman, N. (2017). Workload factor encouraging job stress among PT3 teachers in School District Kapit, Sarawak. *Proceedings of 57th IASTEM International Conference*. Kota Kinabalu.
- Razali, A., & Ali, A. (2016). Faktor yang mempengaruhi tahap stres guru pendidikan khas. *Online Journal for TVET Practitioners*.
- Salahudin, S. N., Abdullah, M. M., Hitam, S., & Idrus, D. (2007). Personal characteristics, occupational stress and turnover intentions among school teachers in Negeri Sembilan Malaysia.
- Selye, H. (1956). *The Stress of Life*. New York: McGraw-Hill.
- Selye, H. (1991). *Stress and Coping: An Anthology*. New York: Columbia Press.
- Sutherland, V. (1990). Exercise and Stress Management: Fit Employess, Healthy Organisations. *Interntional Journal of Sport Psychology*, 21, 218-236.
- Tai, K. L., Ng, Y. G., & Lim, P. Y. (2015). Systematic review on the prevalence of illness and stress and their associated risk factors among educators in Malaysia. *PloS one*, 14(5). <https://doi.org/10.1371/journal.pone.0217430>
- Whitehead, A. J. (2001). Teacher burnout: a study of occupational stress and burnout in New Zealand school teachers. *Teacher burnout: a study of occupational stress and burnout in New Zealand school teachers*. Massey University, Albany, New Zealand: a thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Philosophy.
- World Health Organization. (2007, February 14). *Occupational Health*. Retrieved from World Health Organization: https://www.who.int/occupational_health/topics/stressatwp/en/
- Yaacob, M., & Choi, S. L. (2015). Role of Occupational Stress on Job Satisfaction. *Mediterranean Journal of Social Sciences*, 6(2). <https://doi.org/10.5901/mjss.2015.v6n2s1p81>
- Yacob, Z. M., & Abdullah, Z. (2015). Effects of a Female Principal's Leadership Style on Teachers' Work Stress. *Educational Leader (Pemimpin Pendidikan)*, 3, 123-137.
- Yusof, N. (2011). School principals leadership and teachers' stress level in Malaysian Primary Schools. *EDUCARE*, 4(1).
- Zamri, E. N., Moy, F. M., & Hoe, V. C. (2017). Association of psychological distress and work psychological factors with self-reported musculoskeletal pain among secondary school teachers in Malaysia. *Plos one*, 12(2), e0172195. <https://doi.org/10.1371/journal.pone.0172195>
- Zarifzadeh, S. (2012). Job Satisfaction Factors among English Language Teachers in Malaysia. *International Journal of Applied Linguistics & English Literature*, 1(4) 30. <https://doi.org/10.7575/ijalel.v.1n.4p.30>

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