

The Effects of Behavioral Modification on Psychological Condition of Elementary School Teachers in Surabaya during Covid-19 Pandemic

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Abstract: The purpose of this study was to measure the effects of behavioral modification on psychological wellbeing of elementary teachers of West Surabaya during Covid 19 pandemic. The psychological condition was measured through Perceived Stress Scale (developed by Cohen et al, 1983). Thirty elementary teachers participated in this study. The design of this study was same subject pretest posttest group design. The psychological condition was measured through Perceived Stress Scale which consisted of 10 question. After that they were treated with knowledge of stress coping, day to day hygienic life, social distancing, better food choice, different types of physical exercise, online teaching and learning. One month later, the teachers took the Perceived Stress Scale once again. Data analysis showed that normality test of pretest $p=.107$ and posttest $p=.179$, so parametric statistics could be applied. Paired sample T test showed $p=.036 < .05$, so there is a significant difference between pretest and posttest of teachers' psychological conditions meaning that their psychological wellbeing is better after treatment.

Key words: elementary school teachers, perceived stress scale, behavior modification.

I. Introduction

It has been almost a year since the outbreak of Covid 19 pandemic. It has given a great burden to the society for having lost of job or income, restricted activity, anxiety, panic and depression. Long time of stress will affect their psychological wellbeing. Prolonged stress can cause structural change in the brain, affect neurological system for quite some time (Reznikov et, 2007). Chronic stress increases plasma cortisol release especially glucocorticoid and causes a lot of neuronal deaths (Seeman et al, 1997). Because lipophilic character of glucocorticoid, it can easily penetrate the blood-brain barrier and influence cognitive processes for a long period of time (Sandi, 2013). Stress is able to cause behavioral as well as personality disorders.

II. Methods

Thirty Elementary teachers of West Surabaya city volunteered to be the subjects of this study and signed informed consent. After given necessary explanation about the study, they filled the questionnaire of Perceived Stress Scale as a pretest, then they were given a knowledge of stress coping, day to day hygienic life, wearing mask, social distancing, washing hands, exercise examples, teaching and learning on line tips. They were also given consultation online whenever they feel necessary. One month later they took the Perceived Stress Scale for the second time.

III. Results

Table 1. Paired sample statistics

	Mean	N	Std Deviation	Std error Mean
Pre	1.3020	10	.81645	.25819
Post	1.0640	10	.69422	.21953

The mean of pretest condition was $1.3020 \pm .25819$, whereas the mean of posttest was $1.0640 \pm .21953$

Tabel 2. Tes of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre	.204	10	.200*	.872	10	.106
Pos	.163	10	.200*	.892	10	.179

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Normality test showed that pretest $p=.105 > .05$ and posttest $p=.179 > .05$ meaning that the distribution are normal and parametric statistics can be applied.

Tabel 3. Paired sample test

Paired Samples Test

	PairedDifferences					t	df	Sig.(2-tailed)			
	Mean	Std.Deviation	Std.ErrorMean	95% Confidence Interval of the Difference							
				Lower	Upper						
Pair1 Pre- Pos	.23800	.30659	.09695	.01868	.45732	2.455	9	.036			

Paired sample test showed that $p=.036 < .05$ meaning that there is a significant difference between pretest and posttest in which posttest is lower than pretest.

IV. Discussion

Cognition is defined as process of obtaining stimulus, perception about the stimulus, interpretation of the stimulus, involving learning, attention and ability to make a logical decision (Sandi, 2013). Generally, light stress is needed to increase cognitive function, especially virtual memory and verbal memory, but if stress exceeds stress threshold, which is not the same in different individuals, stress can cause cognitive disorder (Sandi, 2013). Repeated stress causes reversible impairments of spatial memory performance (Luine et al, 1994). Because chronic stress can decrease cognitive ability, behavioral therapy can decrease stress and therefore increase cognition (Scholey et al, 2014). The increasing plasma norepinephrine during stress is inversely proportional to the immune function of phagocyte and lymphocyte which suppress immunity (Reiche et al, 2004). Stress will disturb or damage brain function, especially memory function, cognitive function and learning. (Yaribeygi et al, 2017).

Memory involves hippocampus and amygdala structures, whereas learning involves hippocampus, amygdala, and temporal lobe. Stress causes diminishing neurogenesis in hippocampus (Gould et al, 1998), decrease in hippocampus volume, and decrease in spatial memory (Luine et al, 1994).

Stress coping consists of learning meditation and maintaining positive attitude during stress caused by Covid 19 pandemic. Meditation, yoga as well as Tai Chi practice diaphragmatic breathing. Psychological studies have revealed that diaphragmatic breathing practice to be an effective non-pharmacological intervention for emotion enhancement (Stromberg et al, 2015), including a reduction in anxiety, depression, and stress (Anju et al., 2015). Currently, breathing practice is widely applied in clinical treatments for mental conditions, such as post-traumatic stress disorder (PTSD) (Goldin and Gross, 2010), motion disorders (Russell et al., 2014), phobias (Friedman and Thayer, 1998), and other stress-related emotional disorders.

Pretest psychological condition of teachers are not so bad, the mean PSS scale is 1.302 out of 0 through 4 scale. Pandemic has almost been a year, and these teachers are apparently well adapted to the situation. Regular salaries add to their psychological condition because not worrying to lose their jobs. Behavioral modification; stress coping, encouragement, hygienic life, mask wearing, social distancing, all of these work as to increase their resiliency. As a result, their perceived stress is decreasing significantly ($p=.036$).

V. Conclusion

Stress is any change in environment that needs physical and psychological adjustment on individuals, and this adjustment is called stress response. A short time stress is beneficial, but prolonged stress is very harmful to physical and psychological condition and a good stress coping is necessary. In this study, the perceived stress of elementary teachers was not so bad, and stress coping as well as a good behavioral modification increases their resilience significantly.

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