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Conquering Stress in Times of Pandemic: An Intervention Study to Manage Stress among College Students

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Abstract

The COVID-19 pandemic has brought many challenges throughout the population spectrum. The sudden shift of classes from face-to-face to that of full online has brought into the spotlight the mental health issue of various groups, including college students. The aim of this study was to determine the effect of a stress management program on perceived stress, knowledge, attitude, and preventive practices among college students in the Adventist University of the Philippines. The study utilized a pre-test/post-test quasi-experimental design among 40 participants through random sampling. The intervention program was conducted from March 6 until April 17, 2021, and consisted of motivational talks, lectures, focused group discussions, testimonials, and support groups. Descriptive (mean and percentage) and inferential (paired t-test) statistics were used to analyze the data. Both groups showed moderate stress, very good knowledge (mean-15.1), poor attitude (mean- 2.4), and good preventive practices pre and post-intervention (mean- 2.8). There was no significant difference in both groups before the program; however, it showed a significant difference in the perceived stress scale, which strongly indicates that the stress level of the participants decreased after the stress management program (mean- 4.3, SD- 5.05, p- .001). Moreover, the participants' attitude and practice gain scores were higher, while the gain score for perceived stress was lower in the experimental group. Further, preventive practices showed significant differences in the gain score (mean- 4.3, p- ≤.05) as compared to knowledge (mean- 2.12) and attitude (mean- 1.9). Results showed that the stress management program was a success and is recommended to be done regularly for college students.

Keywords: academic stress, stress management program, pandemic, perceived stress scale

INTRODUCTION

Stress affects all types of people regardless of age, gender, beliefs, or status in life (Mazo, 2015). Students with high academic stress were reported to experience different mental health problems such as depression, anxiety, irritability, and headaches (Deb, Strodl & Sun, 2015). The number of suicide cases and students with mental disorders has increased significantly, with at least one suicide referral every day (Tomacruz, 2018).

Stress and mental health of college students is a vital public health matter because when a student is healthy, they will also become healthy workers in the future. Going to schools or

universities could be a positive and encouraging experience for the students, but studies have shown that college students nowadays are more stressed than before (Portoghese et al., 2019; Pryor et al., 2010), and stress is being described as the number one interference to academic performance (American College Health Association, 2010).

A recent study from the United States showed that among the 71% surveyed students regarding their mental stress, showed increased stress and anxiety were brought about by the recent COVID pandemic. In a Malaysian study, it was shown that health sciences students, such as medical laboratory science students, are experiencing moderate to high amounts of stress, which was linked to academic requirements as the major source of stress (Othman et al., 2013, p. 255).

In the Philippines, according to the Social Weather Stations (SWS) survey conducted in the fourth quarter of 2019, 27 percent or one of four Filipinos are frequently experiencing stress in their everyday living (Hallare, 2020). Tee et al. (2020) reported that younger people are more prone to experience stress, anxiety, and depression due to the psychological impact of the pandemic; and that students who experience stress in high amounts can lead to reduced school performance with low grades and an increased number of dropouts which results to decreased graduation rates (Byrd & McKinney, 2012; Keyes et al., 2012; Salzer, 2012; Storrie et al., 2010).

Thus, this study aimed to determine the effect of a tailored mental health program for a chosen group of medical and laboratory students who are currently in their clinical division (Junior year) in a chosen university in Luzon, Philippines.

METHODOLOGY

This study utilized a quantitative research design, specifically a pre-test/post-test design. A tailored mental health program was presented to a group of students chosen randomly and who attended a total of eight sessions from a pre-created module. Pre-test and post-test results were measured against a control group to determine its effect.

The 40 participants, 20 experimental and 20 controlled, respectively, were chosen through a random sampling technique. Students from the clinical division of the Medical Laboratory Science (MLS) Department of a chosen university in the Philippines are specifically chosen because it is at this stage that the students face the most challenging period of their four-year academic journey; moreover, the main researcher is a faculty of said department.

A structured and self-administered questionnaire was distributed to the participants before and after the program. The questionnaire is composed of 84 items which mostly are close-ended questions and are divided into six parts: 1) demographic profile questions which describe the participants' age, gender, religion, nationality, family income, and other academic information; 2) general questions; 3) knowledge questions about stress answerable by true or false which measured the participants' knowledge on the myths and facts about stress; 4) perceived academic stress with answers in the form of Likert scale; 5) practices on stress management for the past four weeks with the responses ranging from (1) Always, (2) Often, (3) Rarely, (4) Never; and the 5) perceived stress scale which would measure the intensity of their stress which was adopted from Cohen (1994) and was considered as the most widely used instrument for measuring the level of stress.

For the data gathering, approval from the university's Ethics Review Board (ERB) was obtained; the program protocol was duly presented and was approved. A letter for permission was secured from the MLS Department Head before the data gathering procedure. A list of students in

the clinical division was acquired from the Head of Department and participants and was chosen randomly and allocated to the respective group (experimental and control). Once chosen, the consent to participate was delivered and disseminated to the students, and once the consent was signed, the questionnaire was given via google form, and both groups received a thorough explanation of what was expected from them. The program took place for a period of eight sessions through a virtual platform and was attended by all the participants. A post-test questionnaire was conducted after the program to measure the effect of the program on knowledge, attitude, practice, and perceived stress of the students.

RESULTS AND DISCUSSION

The majority of the participants have ages ranging from 18-21 years old, 85% are female, coming from different religious affiliations of which the Seventh-day Adventist has the highest percentage with 59%, followed by the Roman Catholic with 26%, 10% from Born Again Christian and 2.5% each for Aglipayan Church and Members of Church of God International. For the family income, more participants come from a family with an income of more than 30,000php per month.

Table 1: Demographic information of the participants

		N	%
Age	18-21 yrs old	37	95
	>21 yrs old	2	5
Gender	Male	6	15
	Female	33	85
Religion	Seventh Day Adventist	23	59
	Roman Catholic	10	26
	Aglipayan	1	2.5
	Born again Christian	4	10
	Members of Church of God International	1	2.5
Family Income	10,000-30,000php	13	33
	>30,000	26	67

Paired t-test was conducted for both groups before the program to determine the homogeneity of both experimental and control groups, as shown in Table 2.

Table 2: Paired T-test of the Pre-Program Level of Both Groups

Levene's Test for Equality of Variances	t-test for Equality of Means

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Pre-Knowledge	.081	.778	1.456	37	.154	.67895	.46643	-.26613	1.62402
			1.455	36.845	.154	.67895	.46658	-.26656	1.62446
Pre-Attitude	.001	.970	.861	37	.395	.07544	.08767	-.10219	.25307
			.858	36.094	.396	.07544	.08791	-.10284	.25372
Pre-Practice	1.028	.317	.922	37	.362	.07961	.08634	-.09533	.25454
			.916	33.950	.366	.07961	.08690	-.09701	.25622
Pre PSS	1.246	.271	-.874	37	.388	-1.43421	1.64188	-4.76097	1.89255
			-.875	36.963	.387	-1.43421	1.63825	-4.75373	1.88531

*P<0.05 is significant

It is revealed in the result that both groups were homogenous as the scores in knowledge, attitude, practice, and perceived stress scale were all non-significant. An almost similar result was noted in the post-test between the two groups. However, Table 3 presents the descriptive pre-test and post-test results of the experimental group's knowledge, attitude, and practice. The result showed that the participants had very good knowledge during pre-test and post-test, and for this, the module did not cover much on enhancing their knowledge but rather concentrated on enhancing the participants' attitude and practice.

Table 3: Descriptive comparison of pre-test and post-test on knowledge, attitude, practice, and perceived stress of the participants.

	Pre-test	Verbal Interpretation	Posttest	Verbal Interpretation
Knowledge	15.1	Very Good Knowledge	14.4	Very Good Knowledge
Attitude	2.4	Poor attitude	2.5	Poor attitude
Practice	2.8	Good practice	2.9	Good practice
Perceived Stress	23.3	Moderate Stress	19.0	Moderate Stress

The overall mean for the attitude during pre-test was 2.4 and was increased to 2.5 in post-test, considered as *poor attitude*. The participants believed that they would be successful students (pre-test/post-test mean-3.0 and 3.3) and are positive that they will pass their courses during the semester (pre-test/post-test mean-3.0 and 3.3), despite believing that the examinations are difficult (pre-test/post-test mean-1.5 and 1.3) and not having enough time to relax (pre-test/post-test mean-2.0 and 2.5).

The overall mean for the practice of preventive measures regarding stress during pre-test was 2.8 and was increased to 2.9 during post-test, both considered as *good practice.* The highest preventive practices which the participants do are: to pray (pre-test/post-test mean-3.7 and 3.9), talk to family members and friends when they are stressed (pre-test/post-test mean-3.5 and 3.8),

and do something they enjoy (pre-test/post-test mean-3.4 and 3.8); the lowest mean to cram doing school requirements (pre-test/post-test mean-2.0 and 2.1) not exercising (pre-test/post-test mean-2.2 and 2.5), not getting at least eight hours of sleep at night (pre-test/post-test mean-2.3 and 3.4), and not eating a balanced diet (pre-test/post-test mean-2.6 and 2.9); however, it is noteworthy that these practices improved after the program. For the perceived stress scale, from a mean of 23 during the pre-test, it was reduced to 19 in the post-test. The paired T-test was again conducted to test whether the difference of the mean scores is statistically significant between the two groups, and the result showed that the perceived stress scale of the participants was significant (p-value = 0.001, SD=1.13), which further denotes that the program for the clinical division students in conquering stress was successful in reducing their stress level.

Table 4: Paired T-test of the Difference of the Pre- and Post-Program Levels of the Participants

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-Knowledge - Post Knowledge	.55000	1.76143	.39387	-.27437	1.37437	1.396	19	.179
Pair 2	Pre-Attitude - Post Attitude	-.08333	.22980	.05138	-.19088	.02422	-1.622	19	.121
Pair 3	Pre-Practice - Post Practice	-.08604	.29256	.06542	-.22296	.05088	-1.315	19	.204
Pair 4	Pre PSS - Post PSS	4.30000	5.05860	1.13114	1.93250	6.66750	3.801	19	**.001**

To determine the gain scores of the two groups in terms of knowledge, attitude, and practice, the result showed that it was the practice that showed significant difference among the variables tested (p value=0.045), as presented in Table 5.

*Table 5**:** Paired T-test of the Gain Scores of the Participants and Non-Participants*

	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Gain Score for Knowledge	2.125	.153	-1.050	37	.301	-.55000	.52390	-1.61152	.51152
			-1.054	36.531	.299	-.55000	.52162	-1.60737	.50737
Gain Score for Attitude	1.963	.169	.334	37	.740	.03070	.09189	-.15548	.21689
			.331	31.594	.743	.03070	.09278	-.15837	.21977
Gain Score for Practice	4.317	**.045**	.368	37	.715	.04766	.12954	-.21480	.31013

			.363	28.887	.719	.04766	.13120	-.22071	.31603
Gain PSS	1.365	.250	-1.179	37	.246	-2.03684	1.72752	-5.53712	1.46344
			-1.175	35.899	.248	-2.03684	1.73312	-5.55211	1.47843

The result shows that the participants may have already taken up and applied some skills that they have learned from the program that would help them in managing their stress as a student. It was not surprising that the result of the knowledge is also not significant as it is not addressed in the program.

Due to the alarming cases of increased mental health disorders of the youth during this time of COVID-19 pandemic, studies have recommended the need for interventions to address the growing concern of mental health problems, particularly among college students.

There is now a call to the higher educational institutions (HEIs) leaders to start prioritizing the mental health of the students. This call includes generating preventive methods and including in the health screening the mental health aspect to be able to identify particularly those with psychiatric symptoms and be given proper interventions (Inside Higher Ed. 2020b; Son et al., 2020; Sun et al., 2021). Virtual outreach programs which are done online, such as webinars, psychoeducation, mental health interventions or services, counseling, and the likes are recommended for the schools to be able to effectively reach those in need and to continuously promote mental health and to increase awareness of the connection of mental health to the academic performance (Inside Higher Ed. 2020b; Linardon et al., 2019, Sun et al., 2021).

A stress management program is one of the most common interventions done by any type of institution to care for their subjects. Stress management programs have been proven effective in reducing stress which may also prevent other mental health problems and may therefore be regularly implemented in schools (Amanvermez et al., 2020). It was even suggested by a body of students to incorporate stress management programs in the curriculum (Yasmin et al., 2020). Through stress management programs, students with more serious mental health problems might also be encouraged to seek more treatment, and these programs can also be a means for the development of other mental health interventions (Benjet, 2020).

CONCLUSION

This study determined the effect of a stress management program on the selected college students in a university in Luzon, Philippines, during this time of the pandemic. The results showed that after the eight-session program, the participants had applied some techniques in stress management, which made the gain score of the practice significant, and more importantly, the stress level of the participants was reduced. This study shows that mental health programs are vital to the wellbeing of the students and is therefore recommended to be done regularly by higher educational institutions.

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REFERENCES

Amanvermez, Y., Rahmadiana, M., Karyotaki E., de Wit, L., Ebert, D. D., Kessler, R. C. & Cuijpers, P. (2020). Stress management interventions for college students: A systematic review and meta-analysis. *Clinical Psychology Science and Practice,* e12342. https://doi.org/10.1111/cpsp.12342

American College Health Association. (2010). American College Association – National College Health Assessment 2010 National Data. Hanover, MD.

Benjet C. (2020). Stress management interventions for college students in the context of the COVID-19 pandemic. *Clinical psychology: a publication of the Division of Clinical Psychology of the American Psychological Association*, e12353. Advance online publication. https://doi.org/10.1111/cpsp.12353

Byrd, D. R., McKinney, K. J. (2012). Individual, interpersonal, and institutional level factors associated with the mental health of college students. *J Am Coll Heal*., 60(3):185–93.

Deb, S., Strodl, E., & Sun, J. (2015). Academic stress, parental pressure, anxiety and mental health among Indian high school students. *International Journal of Psychology and Behavioral Sciences*, 5(1), 26–34. https://doi.org/10.5923/j.ijpbs.20150501.04

Hallare, K. (2020, March 31). 27% of Filipinos frequently experience stress – SWS. *Inquirer.Net*. https://newsinfo.inquirer.net/1251893/27-of-filipinos-frequently-experience-stress

Inside Higher Ed. (2020b, August 17). *Suicidal ideation on the rise for college-aged adults due to COVID-19*. https://www.insidehighered.com/news/2020/08/17/suicidal-ideation-rise-college-aged-adults-due-covid-19-pandemic

Keyes, C. L., Eisenberg, D., Perry, G. S., Dube, S. R., Kroenke, K., Dhingra, S. S. (2012). The relationship of level of positive mental health with current mental disorders in predicting suicidal behavior and academic impairment in college students. *J Am Coll Heal*., 60(2):126–33.

Linardon, J., Cuijpers, P., Carlbring, P., Messer, M., Fuller-Tyszkiewicz, M. (2019). The efficacy of app-supported smartphone interventions for mental health problems: a meta-analysis of randomized controlled trials. *World Psychiatry*. 18:325-36. https://doi.org/10.1002/wps.20673.

Mazo, G. N. (2015). Causes, Effects of Stress, and the Coping Mechanism of the Bachelor of Science in Information Technology Students in A Philippine University. *Journal of Education and Learning*, Vol. 9(1) pp. 71-78.

Othman, C. N., Farooqui, M., Yusoff, M. S. B., & Adawiyah, R. (2013). Nature of Stress among Health Science Students in a Malaysian University. *Procedia - Social and Behavioral Sciences*, 105, 249–257. https://doi.org/10.1016/j.sbspro.2013.11.026

Portoghese, I., Galletta, M., Porru, F., Burdorf, A., Sardo, S., D'Aloja, E., Finco, G., & Campagna, M. (2019). Stress among university students: factorial structure and measurement invariance of the Italian version of the Effort-Reward Imbalance student questionnaire. *BMC Psychology*, 7(1), 1–7. https://doi.org/10.1186/s40359-019-0343-7

Pryor, J.H., Hurtado, S., DeAngelo, L., Palucki Blake, L., & Tran, S. (2010). The American freshman: National norms fall 2010. *The Higher Education Research Institute*. Retrieved from http://heri.ucla.edu/pr-display.php?prQry=55

Salzer, M. S. (2012). A comparative study of campus experiences of college students with mental illnesses versus a general college sample. *J Am Coll Heal*., 60(1):1–7

Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020). Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *Journal of Medical Internet Research*, 22(9), e21279. https://doi.org/10.2196/21279

Sun, S., Goldberg, S. B., Lin, D., Qiao, S., & Operario, D. (2021). Psychiatric symptoms, risk, and protective factors among university students in quarantine during the COVID-19 pandemic in China. *Globalization and Health, 17*(1). https://doi.org/10.1186/s12992-021-00663-x

Storrie, K., Ahern, K., Tuckett, A. (2010). A systematic review: students with mental health problems—a growing problem. *Int J Nurs Pract*., 16(1):1–6.

Tee, M. L., Tee, C. A., Anlacan, J. P., Aligam, K. J. G., Reyes, P. W. C., Kuruchittham, V., Ho, R. C. (2020). Psychological impact of COVID-19 pandemic in the Philippines. J Affect Disord. doi: 10.1016/j.jad.2020.08.043.

Tomacruz, S. (2018, September 11). A cry for help: Mental illness, suicide cases rising among youth. Rappler. https://www.rappler.com/newsbreak/in-depth/suicide-cases-mental-health-illness-youth-rising-philippines

Yasmin, H., Khalil, S., & Mazhar, R. (2020). COVID 19: stress management among students and its impact on their effective learning. *International technology and education journal*, 4(2), 65-74.