Estrés percibido debido a la pandemia de COVID-19 entre los profesores profesionales empleados

Perceived Stress due to COVID-19 Pandemic Among Employed Professional Teachers

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RESUMEN.
La aparición inesperada del brote de COVID-19 ha interrumpido sin lugar a dudas la normalidad de la vida. El estrés se ha convertido en una preocupación importante en la educación desde el brote de COVID-19. Esta encuesta en línea descriptiva-correlacional administrada en agosto de 2020 utilizó la Escala de estrés percibido COVID-19 (COVID-19 PSS-10) para evaluar el estrés percibido por COVID-19 entre los profesores filipinos empleados. Whitney U y Kruskal-Wallis probaron las diferencias mientras que la rho de Spearman se utilizó para analizar la correlación entre las variables. Los resultados demostraron que más de la mitad de los maestros experimentaron un estrés moderado por COVID-19. Las mujeres experimentaron un estrés por COVID-19 significativamente mayor en comparación con los hombres. Se observó una correlación negativa entre la salud autoevaluada y el estrés por COVID-19, mientras que se encontró una correlación positiva entre el riesgo percibido de contraer la infección por COVID-19 y el estrés por COVID-19. Este estudio destaca que se deben tomar medidas para ayudar a los maestros a lidiar con el estrés de la crisis de COVID-19, así como se les debe proporcionar o enseñar intervenciones de manejo del estrés durante esta pandemia. Este estudio podría usarse como base para futuras investigaciones para evaluar el impacto del estrés por COVID-19 entre los profesores profesionales.

PALABRAS CLAVES.
COVID-19, salud mental, pandemia, estrés, profesores.
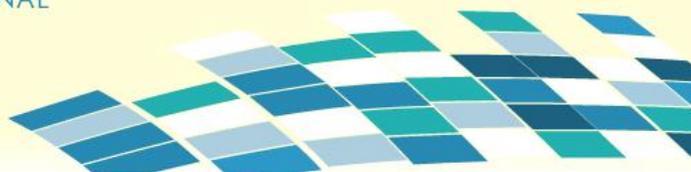
ABSTRACT.

The unexpected occurrence of the COVID-19 outbreak has undeniably disrupted the normalcy of life. Stress has become an important concern in education since the COVID-19 outbreak. This descriptive-correlational online survey administered in August 2020 utilized the COVID-19 Perceived Stress Scale (COVID-19 PSS-10) to assess the COVID-19 perceived stress among employed Filipino teachers. Whitney U and Kruskal–Wallis tested for differences while Spearman's rho was used to analyze the correlation between variables. Results demonstrated that more than half of teachers experienced moderate COVID-19 stress. Females experienced significantly higher COVID-19 stress compared to males. A negative correlation was noted between self-rated health and COVID-19 stress while a positive correlation was found between the perceive risk of getting COVID-19 infection and COVID-19 stress. This study highlights that steps must be undertaken to help teachers deal with the stress of the COVID-19 crisis as well as they must be provided or taught with stress management interventions during this pandemic. This study could be used as a baseline for future research to assess the impact of COVID-19 stress among professional teachers.

KEY WORDS.

1. Introduction.

COVID-19 is a novel viral infection that began in China towards the end of 2019 and was declared as public health emergency of international concern in January 2020 (AlAteeq et al., 2020; World Health Organization, 2020a). The outbreak continues to sweep and spread around the world and became a pandemic (Limcaoco et al., 2020). Despite efforts to contain the virus, the number of cases is still rising. The Philippines is one of the countries in Southeast Asia most affected by the widespread transmission of COVID-19. As of September 12, 2020, there are 28,239,790 confirmed cases of COVID-19 around the world (World Health Organization, 2020b) and 257,863 cumulative cases in the Philippines (Philippine Department of Health, 2020).

The turbulent situation brought by COVID-19 has produced a worldwide crisis with multifaceted dimensions and the rate and pattern of transmission are threatening people's perception of control and is having a profound impact on the people's daily lives (di Fronso et al., 2020; Priya et al., 2020). The crisis is breeding stress throughout the population and the widespread disease outbreak is associated with unfavorable mental health problems and adverse psychological issues (Nanjundaswamy et al., 2020; World Health Organization, 2020a). Indeed, stress has become a major concern since the COVID-19 outbreak. A study reported that the COVID-19 pandemic has affected the well-being of teachers concerning their profession (Alves et al., 2020). Nevertheless, stress is already a concern among teachers even before the pandemic. Despite being known as a noble profession, teaching has a long history of periods of discontent and crises (Alves et al., 2020). Previous studies have shown a moderate to a high proportion of stress among teachers and faculty members in low to middle-income countries like in Ethiopia (Kabito y Wami, 2020), Macedonia (Agai–Demjaha

et al., 2015), and the Philippines (Pagayanan, 2016; Tan, 2017; Alson, 2019). However, more than ever, recent studies reported an increased level of stress compared to levels before the pandemic (di Fronso et al., 2020; Liu et al., 2020). To add to this, the pandemic is also confronting the educational sector worldwide with a paradigm shift in teaching and learning (Guillasper et al., 2020; Mondol y Mohiuddin, 2020; Moralista y Oducado) and teachers are faced with a wide array of extremely challenging conditions in coping with these changes (Reimer y Schleicher, 2020).

Previous studies regarding stress and mental health consequences during epidemics and outbreaks in recent times have also been reported in the literature (Zhang & Ma, 2020; di Fronso et al., 2020). Understanding stress is important because prolonged stress is associated with poor outcomes of mental and physical health (Mariotti, 2015). Since disease outbreaks can have mental health consequences (AlAteeq et al., 2020), this study explored the perceived stress level among licensed professional teachers in the Philippines. To the researchers' knowledge, this study is among the first attempts to assess the stress of pandemic among Filipino professional teachers. The result of this survey could serve as baseline data to investigate if stress level grows over time, in conjunction with the development of the COVID-19 pandemic.

2. Materials and Methods.

2.1. Research design and participants.
A descriptive-correlational research design employing a quantitative approach via an online survey was used in this study. This was deemed appropriate as imposed by the General Community Quarantine restrictions in gathering data. Data were collected among teachers in one State College in the Philippines. Inclusion criteria for this analysis were: 1) a licensed professional teacher in the Philippines, 2) currently employed as a full-time permanent employee by a public or private school, 3) presently enrolled in the Master of Arts in Education program, and 4) willing to participate in the survey. All one hundred thirty (130) licensed professional teachers enrolled in the master's program were invited to participate in the survey. One hundred eleven took part in the survey, however, only the responses of one hundred five (105) selected teachers who met the inclusion criteria for this study were included in this analysis. Some of those who responded were either on part-time status of employment or currently unemployed at the time of the survey. The response rate was 80.77% (105/130). A response rate of 50% was considered an acceptable response rate by some researchers although online surveys are recognized to achieve much lower response rates than paper-based surveys (Nulty, 2008; Moralista y Oducado, 2020).

2.2. Instruments.
The COVID-19 Perceived Stress Scale (COVID-PSS-10) by Pedrozo-Pupo et al. (2020) was adopted and used in this study to specify the stress associated with COVID-19 during the last month. Each item in the scale was answerable with "0-never" to "4-very often". Higher scores indicate greater stress. For this analysis, 0 to 14 = low, 15 to 24 = moderate, and 25 to 40 = high level of COVID-19 perceived stress. Scores equal to or higher than 25 were also

considered as high perceived stress associated with COVID-19 by Pedrozo-Pupo et al. (2020). The COVID-PSS-10 has a reported Cronbach's alpha equal to .86 (Pedrozo-Pupo et al., 2020). In this present study, Cronbach's alpha was .83. Self-rated health was assessed following a single-item question by Haddock et al., (2006). Participants were asked to indicate how they would describe their health with possible responses from "0-poor" to "5-excellent". Prior researchers found that Self-rated health was methodologically and clinically valuable and can serve as a global measure of health status (Wu et al., 2013; Lorem et al., 2020). A single-item scale of perceived risk was used to evaluate participants' perception of their relative risk of getting infected with COVID-19. Participants were asked "How would you describe your risk of getting infected COVID-19?" with responses ranging from "1-low risk" to "5-high risk". It was found that a single question can also accurately capture the concept of risk perception (Ganzach et al., 2008). The demographic variables of the participants were also collected to include their age, sex, marital status, and monthly salary. They were likewise asked of the presence of COVID-19 case near their residence.

2.3. Data collection procedure and ethical considerations.
A web-based survey to determine the perceived stress of teachers due to the COVID-19 pandemic was conducted in the last week of August 2020. The researchers considered the web-designed survey a useful and efficient method to gather data considering the threats of COVID-19 infection. The invitation to participate in the survey was posted and shared by the Dean of the Graduate School through social media groups and messenger where the participants were members. Informed consent was obtained from the participants after the aims of the study were explained. Participants were reminded that proceeding with the survey implies consent to participate in the study. After providing informed consent, participants were allowed to proceed. Data confidentiality and anonymity were maintained throughout the study. Data were reported in aggregate form so that it will not be possible to identify individuals.

2.4. Statistical análisis.
Statistical analysis was performed with the aid of SPSS version 23.0 software. Categorical variables were expressed in frequencies and percentages. Means, standard deviations, and medians, were also computed to describe the data. For this analysis, Mann–Whitney U and Kruskal–Wallis tests were used to determine differences while Spearman's rho was performed to test for correlation. The statistical significance was set at $p < .05$.

3. Results.
Table 1 shows the median age of participants was 33.92 ($SD = 8.81$) years old. The majority of teachers were female (84.8%), married (54.3%), and were receiving a monthly salary of between PHP 20,000 to 29,999 or around 400 USD to less than 600 USD. More than half (59%) reported no presence of COVID-19 positive case near their resident at the time of the survey. The self-report health of teachers had a mean of 4.33 ($SD = .65$) and the perceived risk of getting infected with COVID-19 was 2.33 ($SD = 1.17$).

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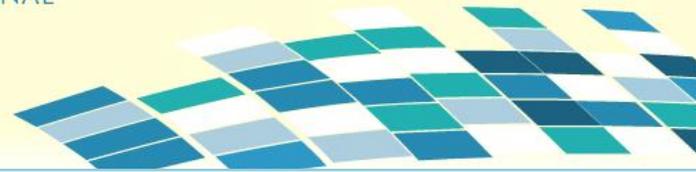
Table 1. Characteristics of participants (independent variables)

Variables	M (SD)	f	%
Sex			
Male		16	15.2
Female		89	84.8
Marital status			
Single		48	45.7
Married		57	54.3
Monthly salary			
PHP Below 19,999		8	7.6
PHP 20,000 to 29,999		93	88.6
PHP 30,000-49,999		4	3.8
Presence of COVID-19 case near their residence			
Yes		22	22.9
No		62	59.0
Unsure		19	18.1
Age (Median = 31)	33.92 (8.81)		
Self-rated health (Median = 4)	4.33 (.65)		
Perceived risk (Median = 2)	2.33 (1.17)		

Display in Table 2 shows that 31.4% experienced low stress, 61% had moderate stress, and 7.6% had high COVID-19 perceived stress. The composite score in COVID-19 PSS-10 was 17.27 (SD = 6.19).

Table 2. COVID-19 perceived stress

Level of perceived stress	f	%
High (25 to 40)	8	7.6
Moderate (15 to 24)	64	61.0
Low (0 to 14)	33	31.4
Mean = 17.27, SD = 6.19; Median = 19		

Table 3 shows that females (Mean Rank = 55.62) experienced a significantly (p = .037) higher COVID-19 stress compared to males (Mean Rank = 38.41). There were no significant differences in the COVID-19 perceived stress based on marital status (p = .424), monthly salary (p = .625), and presence of COVID-19 case near their residence (p = .628).

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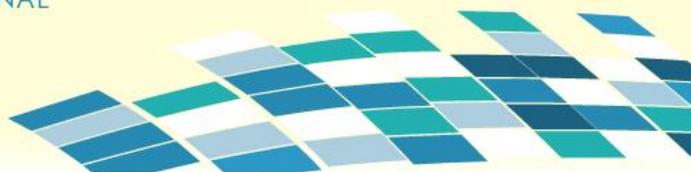
Table 3. Differences in COVID-19 perceived stress

Independent Variables	Mean Rank	Test statistics	p value
Sex		478.500	.037
Male	38.41		
Female	55.62		
Marital status		1244.000	.424
Single	50.42		
Married	55.18		
Monthly salary		.942	.625
PHP Below 19,999	43.81		
PHP 20,000 to 29,999	54.01		
PHP 30,000 to 49,999	48.00		
Presence of COVID-19 case near their residence		.931	.628
Yes	57.40		
No	50.71		
Unsure	54.92		

Table 4 shows that there was a significant negative relationship (rho = -.270; p = .005) between self-rated health and COVID-19 perceived stress and there was a significant positive relationship (rho = .417; p = .000) between the perceived risk of getting infected with COVID-19 and perceived stress associated with COVID-19. However, there was no significant relationship (rho = -.099; p = .313) between age and perceived stress related to COVID-19.

Table 4. Correlates of COVID-19 perceived stress

Independent Variables	rho	p-value
Age	-.099	.313
Self-rated health	-.270	.005
Perceived risk	.417	.000

4. Discussion.

This study looked into the COVID-19 stress among teachers in the Philippines. During crisis times like the current COVID-19 pandemic, adverse stress states are commonly reported (di Fronso et al., 2020). The composite mean (M = 17.27) of the COVID-19 perceived stress scale obtained in this study was somehow comparable and close to the value of the study obtained among Colombian adults (M = 16.5) (Pedrozo-Pupo et al., 2020) and the web-based survey with respondents from 25 countries (M = 17.4) (Limcaoco et al., 2020). Another Colombian study reported a similar proportion (7.6%) of adults in this study disclosing high perceived stress related to COVID-19 (Campo-Arias et al., 2020). On the other hand, 9.6% of Iranian medical doctors (Abdulah y Mohammed, 2020), 15% of Columbian adults (Pedrozo-Pupo et al., 2020), and 30.2% of Saudi Arabian students (AlAteeq et al., 2020) registered high levels
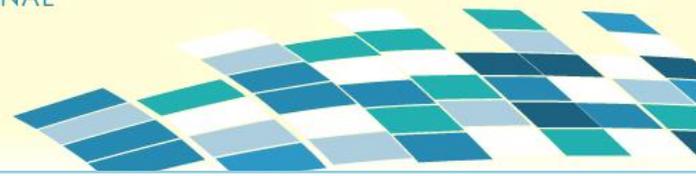
of stress. The proportion of participants scoring high perceived stress related to COVID-19 in this study is relatively lower when compared to other studies (Pedrozo-Pupo et al., 2020; AlAteeq et al., 2020). The unpredictability and uncertainty of the situation and lack of knowledge can foster widespread panic (Zandifar y Badrfam, 2020; Zhang et al., 2020). The relative difference in the findings of the surveys may due to the variation of the time the survey was conducted. It can be assumed that stress related to the pandemic was greater during the times of the height of the crisis and when very little was known about the novel virus that hit the world.

This study also demonstrated that females perceived higher stress associated with COVID-19. This result is in line with those previous studies conducted in China (Qiu et al., 2020), Saudi Arabia (AlAteeq et al., 2020), Italy (di Fronso et al., 2020), and another web-based survey (Limcaoco et al., 2020) wherein females had significantly higher stress level than males. This may be attributed to biological and hormonal changes, sociocultural factors, the expression of emotions and thoughts regarding social situation, and sex differences in coping with stress (AlAteeq et al., 2020; Younas et al., 2020; Limcaoco et al., 2020). On the contrary, perceived stress did not depend on gender in the study of Pedrozo-Pupo et al. (2020).

Researchers in the past have well studied the association between health and stress (Teh et al., 2015), however, self-reported health and stress have not been well-documented in the context of the COVID-19 pandemic. It was demonstrated in this study that self-rated health was negatively correlated with COVID-19 stress. The same result was found among undergraduate students from Singapore (Teh et al. (2015) and elderly sample in Indonesia (Yulitasari et al., 2015). Additionally, COVID-19 is often more severe among those with other health conditions (Centers for Disease Control and Prevention, 2020b). Participants in this study who consider themselves as having poorer health status may experience greater stress brought by the pandemic. The result of this study suggests that future research could pay attention to decreasing stress and improving psychological well-being to lessen the impact of stress on health (Teh et al., 2015).

This study also revealed a significant positive correlation between perceived risk and stress related to COVID-19. This is relatively consistent with other studies that investigated the association between mental health outcomes and perceived risk during the COVID-19 pandemic (Lam et al., 2020; Limcaoco et al., 2020; Yıldırım y Güler, 2021). The higher the risk of getting COVID-19, the greater is the stress experienced by the participants. The extent of feeling susceptible to contracting COVID-19 was associated with depression among healthcare workers in China and Hongkong (Lam et al., 2020). Significantly higher scores of stress were also observed among those who perceived increased susceptibility to the COVID-19 (Limcaoco et al., 2020). Correspondingly, COVID-19 perceived risk was found to have a significant direct effect on death distress among Turkish adults (Yıldırım y Güler, 2021). It is also significant to note that the result of the present study did not identify a significant difference in the stress levels between the presence or absence of COVID-19 case near the participant's residence. In the same way, stress was not significantly correlated with reported cases and deaths of COVID in the country in another study (Limcaoco et al., 2020). Nevertheless, further studies are recommended to explore the possible association.

Lastly, this study found no significant relationship between age and COVID-19 stress in this sample of Filipino teachers. This is similar to the findings of Pedrozo-Pupo et al. (2020). However, our data also suggest that although negligible, there seems to be a negative association between age and COVID-19 stress. The younger the age, the greater is the stress. Significantly higher stress was observed among youth and students in another study (Limcaoco et al., 2020). It was also reported that young adults may be more vulnerable to the perception of stress compared to the general population (Mirón et al., 2019). Even among medical doctors, the mean score of stress decreased with increasing age (Abdulah y Mohammed, 2020). The same observation was noted in China wherein higher scores of psychological distress were noted among the young adult group (Qiu et al., 2020). This finding is somewhat at odds with the idea given that the older age group was reported to be at a higher risk group of developing severe COVID-19 illness and death due to COVID-19 (Centers for Disease Control and Prevention, 2020a). Even among the Filipino sample, older males and those with pre-existing conditions had higher chances of severe COVID-19 risk and fatality (Garcia et al., 2020). The study of Qiu et al. (2020) explained that this may because the younger age groups are likely to obtain a vast amount of information from social media that can possibly trigger stress. Nonetheless, similar to the warning given by Limcaoco et al. (2020), the finding must be interpreted with caution given the very low correlation which was not statistically significant in this study. Since studies are currently under development, it may be necessary for future studies to clarify the role of age in the stress response to the COVID-19 crisis.

The findings of this study should be considered in light of some limitations and potential biases so researchers recommend caution in using and interpreting the findings. There may be other factors that were not included in this study related to stress brought by COVID-19 that should be taken into consideration by other scholars. Another possible limitation is reporting bias, as the study depends on self-reported information collected through an online platform. Moreover, the cross-sectional design of this study prevents causal conclusions. Finally, this study involves a relatively limited sample size thus it is necessary to be cautious when making generalizations to all teachers in the country and internationally. Based on these limitations, the researchers propose a follow up to validate the findings of this study. Future research may reach a larger sample and different groups to eventually know the impact of this pandemic on mental health. Nonetheless, this study adds to the growing body of research on the impact of the COVID-19 pandemic on the psychological aspect and offers new information that can be utilized in tailoring subsequent interventions geared towards promoting mental health in the midst of the pandemic. It is hoped that this study may contribute to a better understanding of the psychological impact of the pandemic among teachers.

5. Conclusion.

This study highlights the need for pandemic-related psychological approaches and mental health interventions and that the psychosocial aspects of outbreaks among teachers must not be neglected. This study found that perceived stress associated with COVID-19 is influenced by sex, self-rated health, and perceived risk of getting COVID-19. The study proposes that female teachers may require additional support to manage stress related to the COVID-19

pandemic. Moreover, the study suggests that the better the teachers' self-reported health and the lower their perception of risk of COVID-19, the lower is their perceived stress related to the pandemic. Teachers may need stress reduction to improve their mental well-being and alleviate the effect of stress on their health. This research provides fresh insights on the psychological response to pandemic among teachers, which must be considered by health and educational authorities together with the epidemiological facets of the pandemic. Stress management programs are recommended to help teachers manage and deal with stress for them to better function in their personal and professional lives, as well as prevent further psychological consequences of the pandemic among this specific cohort.

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