Research Article

Teachers' Subjective Wellbeing During the Covid-19 Pandemic: Its Relation to Religiosity and Trust in Science

Sherwin E. Balbuena*, Princess Z. Balbuena

Dr. Emilio B. Espinosa Sr. Memorial State College of Agriculture and Technology, Mandaon, Masbate, Philippines

ABSTRACT

This study investigated the association between religiosity and teachers' subjective wellbeing and between their trust in science and subjective wellbeing during the COVID-19 pandemic. Using a correlational research design, a survey was conducted involving 170 schoolteachers in Southern Bicol, Philippines. The multivariate survey data were analyzed using correlation and multiple regression. Results of the study showed that religiosity and wellbeing had no monotonic relationship (ρ = 0.092, p = 0.234); however, they had a significant positive linear correlation (r = 0.165, p = 0.032). Religiosity was found to be a significant predictor of wellbeing (B = 0.521, p = 0.040). Furthermore, distrust in science and wellbeing had a significant monotonic relationship (ρ = -0.194, p = 0.011). Distrust in science was also found to be a significant predictor of the subjective wellbeing (B = -0.174, p = 0.016). This study concludes that when teachers have higher levels of distrust in science, their level of subjective wellbeing deteriorates. On the other hand, when teachers' level of religiosity becomes high, their subjective wellbeing also improves. These two traits of trust may have helped the teachers cope with the emotional stress experienced during the pandemic, which may have something to do with the traditional Filipino character of resilience.

Keywords: *COVID-19, PANAS, spirituality, teachers, trust in science*

Introduction

COVID-19, also known as the coronavirus disease of 2019, which is caused by the novel coronavirus SARS-CoV-2, has been declared as a global pandemic in the early 2020, which started in Wuhan, China. To curb the spread of the disease, various countries and territories imposed lockdowns, community quarantine,

social distancing, and other precautionary measures. While the people were staying at home as mandated by their respective governments, many individuals monitored the ongoing crisis by getting updates through the news about the number of confirmed cases, death and recovery rates, etc., whether in social media or televisions. While staying at home reduces the risk of contracting the disease, pandemic anxiety triggered by disturbing news articles or fake news may be a hidden problem that may cause psychological and behavioral disorders.

Several researchers showed that the global pandemic has resulted to an increase in the cases of mental health problems [1] [2] [3] [4]. The results of these studies suggest a high prevalence of generalized anxiety symptoms, depression symptoms, psychological distress, and COVID-19-related fear during the ongoing pandemic in various parts of the world.

Teachers are among the populations affected by the pandemic. The study of Talidong and Toquero [5] was among the first few studies describing the experiences of Filipino teachers during the health crisis. They found that the coping mechanisms of teachers include practicing virtual learning, communicating with the professional community, adhering to quarantine requirements, and finding purposeful activities to deal with anxiety due to the suspension of national school-related activities in the country brought by the pandemic. Baloran and Hernan [6] noted that it is necessary to address stress-related problems of teachers during the pandemic and help them strengthen their coping practices and motivation at work. Furthermore, communication among school leaders and teachers were challenged, and certain types of communication flow were found to mitigate or worsen stress during the rapid change in school context [7].

Considering that the education sector was among the greatly affected, particularly the teachers, their psychological wellbeing should be a top priority in this crisis. Few studies have already been done to explore the coping mechanisms of teachers. However, there is a distinct lack of information about what psychological factors are contributory to improved wellbeing.

Certain interventions based on information about associated factors could be done to address these conditions. For example, religiosity and trust in science are two psychological factors that are hypothesized to positively affect mental health among teachers. Previous studies showed that religiosity contributed to wellbeing of people from diverse cultures during the pandemic [8] [9] [10] [11] [12]. People use their faith in God as coping strategy to lessen the anxiety and to deal with stress during these difficult times. On the other hand, trust in science was found to improve compliant behaviors during quarantines and lockdowns [13] [14]. A highly subjective level of scientific information regarding COVID-19 are among the factors associated with low mental health burden [4]. Hence, this study explored the contributions of these two affective factors on teachers' positive outlook during the COVID-19 health crisis.

At the time of writing of this paper, no studies have been conducted to investigate the potential of religiosity and trust in science as coping resources during the COVID-19 pandemic. Hence, this study aimed to correlate the teachers' subjective wellbeing during the pandemic to their religiosity and trust in science to determine if there are significant relationships.

Methods
Research Design
This study used a correlational research design. The variables under investigation were tested for significant correlations, and tests of hypothesis on the significant contributions of the independent variables to the dependent variable were conducted. The dependent variable used was teachers' subjective wellbeing, while the independent variables were the teachers' socio-demographic characteristics, (dis)trust in science, and religiosity.

Respondents
We conducted a survey involving 170 elementary and secondary schoolteachers in the second Congressional district of Masbate Province, Philippines, 53 (31%) of whom were teaching in Mandaon, 35 (21%) in Balud, 33 (19%) in Aroroy, 20 (12%) in Baleno, 18 (10%) in Milagros, 8 (5%) in Masbate City, and 3 (2%)

in Mobo. About three quarters of the respondents were female teachers (n = 128) and 25% (n = 42) were male teachers. In terms of marital status, 82 (48%) were married while 88 (52%) were unmarried. About half of the teachers were living with their parents. The respondents' ages ranged from 22 to 58 (mean = 31.7, SD = 8.21). Sixty-five percent had no graduate degrees, 33% had master's degrees, and 2% were PhDs. Majority (89%) had a monthly net income of at most PhP 25,000. About a quarter were math and science majors, and the rest were non-science/non-math majors. Most of them (83%) were Catholics. During the pandemic, 48% regularly received news from social media, 41% from TV, and 11% from other sources. About half (56%) rated their overall health status as excellent, 38% rated very good, and 6.5% rated good.

Instrumentation

The study used a set of questionnaires to gather data from the respondents. The questionnaire was composed of two parts: socio-demographics and psychological scales. The socio-demographic part included items that collect personal and family information like gender, age, educational attainment, monthly income, civil status, household type, field of study, religious affiliation, source of news, and overall health status (in a 5-point Likert scale, 1 = "Poor", 5 = "Very well").

The psychological scales part contained three adapted scales: Centrality of Religiosity Scale, Credibility of Science Scale, and Positive Affect-Negative Affect Schedule. The instruction for each scale's questionnaire was rephrased to suit the context during the pandemic, and the reliability was assessed using Cronbach's alpha.

Centrality of Religiosity Scale. This five-item scale (CRS-5) [15] was used to measure the teacher's religiosity during the COVID-19 pandemic. The instrument used a 5-point Likert rating scale (5 = "Very often", 4 = "Often", 3 = "Occasionally", 2 = "Rarely", 1 = "Never"). The CRS-5 has a valuable credibility for the assessment of the personal trait of religiosity. The reliability coefficient of the CRS-5 for this study was found to be at 0.708.

Credibility of Science Scale [16]. This scale was used to measure the teacher's trust in science during the COVID-19 pandemic. The CoSS is an efficient 6-item scale with high reliability and validity. CoSS scores show criterion validity when it comes to predicting views about a variety of current science topics. The items are all reverse-coded, hence higher scores would mean that the teachers have lower levels of trust in science (i.e., distrust in science). The instrument used a 7-point Likert rating scale (1 = "Disagree very strongly", 2 = "Disagree strongly", 3 = "Disagree somewhat", 4 = "Neither agree nor disagree", 5 = "Agree somewhat", 6 = "Agree strongly", 7 = "Agree very strongly"). The internal consistency of the CoSS was very high (alpha = 0.949).

Positive and Negative Affect Schedule [17]. This scale was used to measure the teacher's subjective wellbeing during the COVID-19 pandemic. The PANAS scale is the most regularly used scale for evaluating positive and negative affect. The PANAS has been validated in a number of languages and has demonstrated good psychometric properties in both the general population and clinical groups. In this study, the Negative Affect (NA) items had been reverse-coded to have the same directionality as the items for the Positive Affect (PA), after which the scores for all the NA and PA items were summated to obtain the wellbeing score. The instrument used a 5-point Likert rating scale (1 = "very slightly or not at all", 2 = "a little", 3 = "moderately", 4 = "quite a bit", 5 = "extremely"). The Cronbach's alpha of the PANAS in this study was found to be at 0.681, which is interpreted as marginal.

Data Analysis

The following statistical tools were used to analyze the data gathered from the online survey. The tools were categorized into three groups, namely: tests of normality (Kolmogorov-Smirnov and Shapiro-Wilk), test of correlation (Spearman and Pearson correlations), and regression. All tests were set at a significance level of 0.05 and implemented in SPSS version 28.

Results and Discussion

Teacher's Perceived Wellbeing and Religiosity

Result of the correlation analysis in Table 1 showed a non-significant coefficient between the teachers' wellbeing and religiosity during the pandemic ($\rho = 0.092$, p > 0.05). The p-value of the statistic is 0.234, which exceeded the set alpha at 0.05; hence, the null hypothesis that there was no relationship between wellbeing and religiosity was retained. In other words,

CRS-5 scores and PANAS scores have no monotonic relationships that may be observed based on the sample data. However, using a parametric test the correlation was found to be significant (r = 0.165, p = 0.032). This implies a marginal relationship between the two measures and that the teacher's extent of religious coping during the pandemic may have slight association with her state of wellbeing during the health crisis. The positive coefficient obtained implies that as the teacher's religiosity increases, his or her wellbeing improves.

Table 1. Spearman's rank correlation coefficients among CoSS scores, CRS-5 scores, and PANAS scores

	CoSS	**CRS-5**	**PANAS**
CoSS	$\rho = 1.00$	$\rho = -0.005$ p = 0.944 n = 170	$\rho = -0.194*$ p = 0.011 n = 170
CRS-5		$\rho = 1.00$	$\rho = 0.092$ p = 0.234 n = 170
PANAS			$\rho = 1.00$

* Significant at 0.05 alpha level

The effect of religiosity as a coping strategy to promote mental wellbeing has been well-investigated by several researchers. Faith maturity and a favorable God image both provided considerable independent variance in predicting enhanced positive affect and cognitive wellness [18]. Negative God-image, on the other hand, was associated with lower positive affect and cognitive wellness, as well as higher negative affect. Roman et al. [9] discovered that a person's relationship with the transcendent or sacred has a significant impact on their beliefs, attitudes, emotions, and behavior, indicating the need of spiritual care as a way of coping and wellness during the COVID-19 pandemic. Ribeiro et al. [10] emphasized the relevance of religious/spiritual treatments in providing integrated and comprehensive care to individuals who are most susceptible during the pandemic. The significance of religious faith and practice in helping people preserve spiritual, mental, and physical resilience during a crisis was discussed by Koenig [11]. Finally, religious beliefs, as a moral motivator, were proven to have a favorable impact on people's health habits and spiritual wellbeing throughout the COVID-19

pandemic's biological crisis [19]. The current study corroborates these claims and findings since a marginal association was observed in the data collected. This also confirms Pargament's theory of religious coping [20]. Hence, the positive correlation between the teachers' religiosity and wellbeing scores may be interpreted as significant and not due to chance alone. Religiosity, therefore, can be used as a potential predictor of the teachers' wellbeing.

Teachers' Perceived Wellbeing and Trust in Science

Result of the correlation analysis in Table 1 showed a significant relationship between trust and science and wellbeing during the pandemic ($\rho = -0.194$, p < 0.05). Since the trust in science (i.e., CoSS) scores were reverse-coded, the negative coefficient would imply a positive correlation between the two variables. In other words, the trust score is actually a distrust score, which means that if a teacher's distrust in science increases, his/her wellbeing during the pandemic decreases, or vice versa. This implies that as the teachers' belief in the hopelessness that science has no power to solve the

prevailing problems during the health crisis gets stronger, they feel more negative emotions than positive ones. So, a monotonic relationship exists because as the level of distrust increases, the frequency of feeling positive emotions decreases.

Extant literature revealed that a person's trust in science, healthcare system, and governments affects his or her compliance behaviors and mental wellbeing. Dohle et al. [13] discovered that faith in science was one of the most important indicators of protective measures acceptance and implementation. According to Chen et al. [21], skepticism in science might arise as a result of unjustified erroneous information regarding coronavirus, which can heighten anxiety and panic about the pandemic. Furthermore, avoiding ill individuals and keeping physical fitness were favorably connected with faith in health authorities and medical experts. To encourage compliance with health recommendations, effective scientific information sharing from reliable sources is [14]. COVID-19 risk perception and scientific trust both predict compliance with COVID-19 preventative guidelines [22]. Additionally, higher degrees of positive reciprocity and trust were linked to more health-protective behavioral responses [23]. Finally, mental wellness is influenced by a lack of faith in the healthcare system and preventative actions [24]. The current findings corroborate the above previous findings, which imply that the teachers' trust in science could be used as a potential predictor of wellbeing during a health crisis.

Teachers' trust in science may have helped reduce the feelings of uncertainty and anxiety during the COVID-19 health crisis. The understanding that science has all the tools it needs to cure the coronavirus's problems can help people establish trust in science and find peace of mind. According to Stenmark [25], the notion that science can solve every problem is a complete kind of scientism. Such an attitude represents people's perceptions of science's superiority; a sort of faith that might complement or substitute other forms of consoling beliefs, such as religious ones [26]. Considering the existential concerns and uncertainties resulting from the many changes to daily life as a result of the COVID-19 crisis, and the potential of a scientific solution to this pandemic (e.g., treatments, vaccines), it is perhaps unsurprising that teachers' faith in science is correlated with wellbeing.

Our findings are consistent with controlled experiments, which demonstrate that people can turn to science for relief when confronted with life-threatening situations [26] or when faced with rising degrees of ambiguity [27]. Similarly, another study has found that in times of public crisis, individuals, regardless of their secular affiliations, lean more to religious views [28]. In fact, our data are perhaps the first to show that faith in science and religious beliefs, both are psychological constructs, ameliorate the teachers' pandemic-related negative affect. This confirms the BPS-Pathways model [29] on the psychological aspects of wellbeing and the Lazarus and Folkman's coping theory [30], which suggests that the teachers used their psychological resources to cope with the stress and anxiety during the pandemic.

Table 2. Summary of multiple linear regression using PANAS score as dependent variable and CoSS and CRS-5 scores as independent variables

Model	Unstandardized Coefficients		Standar-dized Coeffi-cients	t	Sig.
	B	Std. Error	Beta		
Intercept	58.894	5.908		9.968	0.000
CoSS	-0.174	0.071	-0.183	-2.430	0.016
CRS-5	0.521	0.252	0.156	2.071	0.040

R-square = 0.06

A multiple linear regression was performed to determine the contribution of trust in science and religiosity on wellbeing. The analysis was considered valid since the residuals were found to be normally distributed, and the CRS-5 scores and CoSS scores were independent or

non-collinear. Result of the regression in Table 2 showed that CRS-5 and CoSS scores were significant predictors of PANAS scores. The beta coefficients for both independent variables were found to be significant, that is CoSS (B = -0.174, SE = 0.071, p = 0.016) and CRS-5 (B = 0.521, SE = 0.252, p = 0.040), with an intercept of 58.894. The R-square was 0.06, which means that 6% of the variations in the PANAS scores are explained by the CoSS and CRS-5 and the 94% of the variations are explained by other factors not included in the model. Hence, for one unit increase in the CoSS (distrust in science) score, there is a 0.174 decrease in PANAS score; while, for one unit increase in CRS-5, there is a 0.521 increase in PANAS score.

Conclusion

This significant correlation between teachers' trust and science score and subjective wellbeing score indicates a possibility that the teacher's background in science due to his/her many years of schooling and exposure to science concepts may have improved her understanding of the biology of COVID-19 virus and that the pandemic can be solved by scientific approaches. This belief may have an effect on their way of handling their emotions during the pandemic, which contributed to less anxiety or stress and developed a more positive outlook towards the situation. It is also probable that this relationship is mediated by the teachers' compliance to precautionary measures imposed by authorities ("trust in politics and trust in science") [13] [22], which reduces their chances of contracting the virus and thus promotes a sense of safety and wellbeing.

Religiosity, on the other hand, did not show monotonic relationship with wellbeing in the correlation analysis but did show a contribution to wellbeing in the regression analysis. This inconsistent result may be attributed to the properties of the data at hand, since using a parametric test actually resulted to a significant correlation. This result is corroborated by previous studies investigating the effects of religiosity on wellbeing. Religious salience had a strong independent influence on a person's meaning and purpose, and church attendance had a large independent effect on anxiety [31]. Dilmaghani [32] also found that having a higher level of religious participation (importance of religion, private religious activities, and religious attendance) was linked to having a higher level of happiness, which was true for both Catholics and Protestants.

The significant effects of teachers' trust in science and religiosity (or trust in God) on their subjective wellbeing may be related to Filipino culture. These two traits of trust may have been used as an adaptive attitudinal coping with anxiety and decision-making in life-defining situations (like the pandemic), and an automatic response to environmental stress [33] [34], which may also suggest the strength of the "bahala na" value system whose positive side is equivalent to optimism, hope, self-efficacy, resilience, and courage [35] [36]. To cope with the difficulties and fears brought about by changes in the ways of life during the COVID-19 pandemic, teachers involved in this study possibly put their trust both in science and in God, hoping that the situation would get better. This implies that increasing trust in science and spiritual guidance can help in teachers' coping with and improving their mental wellbeing during a health crisis, although traits of emotional resilience are already embedded in the traditional Filipino value system.

Acknowledgement

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