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RESEARCH ARTICLE

# Age, COVID-19, and Mental Health in the Philippines: A Multidimensional Perspective

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**Abstract:** The COVID-19 pandemic has caused many to become isolated, increased feelings of loneliness, and given rise to mental health issues. Using the Transactional Theory of Stress and Coping, this study looked at the predictors of mental health outcomes during the COVID-19 pandemic across age groups. Results showed that COVID-19 stressors, resilience, nonreactivity, and coping behaviors predicted stress, anxiety, depression, and psychological well-being. Cluster analysis revealed two age clusters—those between 16 and 35 years and those 36 years and above. The younger group reported greater depression, anxiety, and stress symptoms and poorer psychological well-being compared to the older group. The younger group also reported less resilience, nonreactivity, and use of spiritual coping compared to the older group. The results suggest that the young are most vulnerable during the pandemic, and findings suggest what might be done to provide them mental health psychosocial support.

**Keywords:** COVID-19, mental health, resilience, nonreactivity, coping behaviors, age

## Introduction

The spread of infection, isolation, and loss of income during the COVID-19 pandemic has increased mental health issues (Banerjee & Rai, 2020; Stanton et al., 2020). Research on mental health during the COVID-19 pandemic has reported an increase in prevalence of insomnia, anxiety, and depression during this pandemic (Pappa et al., 2020; Tee et al., 2020). Stay-at-home orders and lockdowns appear to have increased feelings of loneliness (Agnieszka et al., 2021; Evans et al., 2021).

Given that many of these stressors are beyond the control of individuals, it is important to identify factors that are malleable. Theories such as the transactional theory of stress (Lazarus & Folkman, 1987) suggest that stressors can be buffered by how people perceive and cope with situational stressors. In addition, there is initial evidence that there are age differences in the mental health impact of the pandemic (Mariani et al., 2020; Stanton et al., 2020). However, there is lack of understanding on why this is so. This study seeks to contribute to the literature by examining age differences in the experience and reactions to the

stressors associated with the COVID-19 pandemic using the transactional theory of stress.

### ***Transactional Theory of Stress***

The Transactional Theory of Stress and Coping suggests that the effect of stressors on mental health states is buffered by people's personal characteristics, appraisal of the situation, and how they cope (Lazarus & Folkman, 1987). Although there are a number of personal variables associated with better mental health states, there is robust evidence that those with resilient personalities are more able to effectively adjust to adverse circumstances compared to those with less resilience (Lin et al., 2020). High levels of resilience are inversely related to symptoms of anxiety and depression of medical workers (Foureur et al., 2013).

The transactional theory of stress suggests that individuals' appraisal of a stimulus or event will affect their response (Lazarus & Folkman, 1987). In recent years, a construct related to appraisal that has received much attention is mindfulness. Mindfulness is described as intentionally focusing one's attention on the experience in the present moment with a nonjudgmental and accepting attitude. This disposition makes people more aware of their emotions, less reactive, and more able to let go of disturbing feelings. It has five facets: observation, description, acting with awareness, nonjudgement, and nonreactivity (Baer et al., 2006). Among these, nonreactivity (the ability to be aware of one's thoughts and without getting caught in it or carried away) has the strongest relationship with mental health states (Haenen et al., 2016).

The transactional theory of stress also posits that once individuals perceive a situation as stressful, they will respond to manage or cope with stressful situations (Folkman & Moskowitz, 2004). Studies have suggested that some coping behaviors are more useful than others. For example, Shanahan and colleagues (2020) found that physical activity, positive reappraisal, and keeping a daily routine are associated with reduced emotional distress. On the other hand, having emotion-focused or avoidant coping styles is associated with a higher risk of psychological symptoms (Mariani et al., 2020).

It is also important to note that coping strategies may be different depending on the context in which they occur (Lazarus & Folkman, 1987). For example, a study on coping strategies in the context of the COVID-19 pandemic reports that self-blame,

self-distraction, and behavioral disengagement are associated with higher depression scores. On the other hand, positive reframing, acceptance, and humor to deal with negative emotions are associated with lower depression, anxiety, and stress (Gurvich et al., 2020).

### ***Age and Mental Health***

Beyond understanding the context of stress and coping, this study seeks to examine the impact of COVID-19-related stressors, resilience, nonreactivity, and coping on mental health from the perspective of age. Specifically, we look at the relationship of age and mental health from three lenses—biology, life stage, and generations.

In terms of biology, neurological changes across a person's lifespan may dictate and influence experiences with stress and coping (Greenough et al., 1987). For example, studies on the COVID-19 virus reveal that the elderly are most vulnerable to severe COVID-19-related complications compared to younger adults (Liu et al., 2020) and have greater risk for mortality (Channappanavar & Perlman, 2020). This vulnerability may make them more anxious compared to younger generations. On the other hand, the period of adolescence up to young adulthood is characterized by changes in physical characteristics and hormones. These changes, along with external stressors, make them prone to heightened moods, emotions, and impulses.

Physiological processes may also influence coping behaviors (Aldwin et al., 2010). Longitudinal studies have shown different areas of the brain tend to mature earlier than others. Generally, the prefrontal cortex, which involves finetuning of executive function, category-learning tasks, and overall cognitive development, peaks in middle adulthood (Kaufman, 2001; Lau et al., 2011; Salthouse & Davis, 2006; Schaie, 2000). This maturation of the prefrontal cortex in adulthood enables more mature decisions regarding threats and sources of stress (Lau et al., 2011; Østby et al., 2009; Somerville, 2016; Tamnes et al., 2010). Conversely, the subcortical regions such as the amygdala and hippocampus that regulate short-term memory and emotion mature earlier. Thus, the youth may process information faster than older adults, but because their prefrontal cortex has not fully matured, they may rely on emotion-based coping behaviors, which may make them prone to risky behavior (Lau et al., 2011).

Beyond biology, an important perspective is that of human development. The life stages theory of Erikson (1950) suggests that individuals go through different life stages as they develop and that each life stage poses a conflict or task that needs to be resolved. Completion of this task leads to a sense of competence and a healthy personality, but failure to accomplish this leads to feelings of inadequacy. Erikson (1950) described eight life stages. At infancy (birth to 12 months), the conflict is trust versus mistrust depending on the infant's experience of care. At toddlerhood (1–3 years), the conflict is autonomy versus shame and doubt as the toddler begins to learn how to be independent. Preschoolers (3–6 years) will experience the conflict of initiative versus guilt as they begin to initiate activities and assert control over their world. The elementary school years (6–11) are about industry versus inferiority as children begin to compare themselves and their accomplishments with peers. The adolescent years (12–18) are characterized by identity versus role confusion as teenagers struggle to define who they are and what they want to do with their life. Those in early adulthood (20–40) experience the conflict of intimacy versus isolation as they begin to explore intimate relationships. Mid-adulthood (41–65) is characterized by the conflict of generativity versus stagnation as individuals find their life's work and contribute to developing others through parenting or mentoring others. The late adulthood period (66–80) is characterized by the conflict of integrity versus despair where people can either look back and feel a sense of satisfaction with their life or regret lost opportunities. Recently, based on her husband's work, Joan Erikson described a ninth stage (80 and up). At this stage, the elderly may experience the same conflicts as they cope with the physical and psychosocial changes of growing old. That is, they may experience issues of trust versus mistrust, initiative versus guilt, identity versus role confusion, intimacy versus isolation, etc. (Erikson, 1997).

Beyond biology and life stages, another lens to view differences in age is from an ecological lens. The Generation Cohort Theory suggests that the social, political, and economic events that occur during a cohort's formative years imprint a set of values, attitudes, and behaviors (Parry & Urwin, 2011). Baby Boomers (born between 1946 and 1964) grew up amidst war, civil rights movements, Woodstock, etc. (Tolbize, 2008). Given their lack

of exposure to technology, they use the Internet and social communication technology less than younger generations (Tolbize, 2008). Generation X (born between 1965 and 1980) experienced the AIDS epidemic, the fall of communism, global competition. They are described as achievement oriented and independent (Tolbize, 2008). The introduction of personal computers during this period make them more tech savvy compared to Baby Boomers. However, they are still considered digital immigrants compared to the younger generations who are referred to as digital natives (Ignatius & Hechanova, 2014). Generation Y or the Millennials (born between 1981 and 1996) grew up amidst terrorist attacks, gulf war, economic growth, and digital technology. They are described as techno savvy and put greater value on leisure and work–life balance compared to older workers (Tolbize, 2008). Generation Z (born between 1997 and 2012) are likewise digital natives with unprecedented access to information and influences outside the home (Oerther & Oerther, 2021).

The Generational Cohort Theory suggests that the life experiences of the various generations can shape their attitudes or behaviors. For example, the quarantine policies have increased the dependence on technology to connect people and have isolated those who are not adept in using technology. Bertic and Telebuh (2020) studied the impact of COVID-19 on the elderly and reported that 50% of Baby Boomers reported feeling lonely with elderly who rarely or never communicated with their families using modern technologies reported greater loneliness. On the other hand, there are also studies that have shown that older individuals actually exhibit less emotional distress than younger individuals (Mariani et al., 2020; Stanton et al., 2020). This may be a product of their experiences of adversities that may have built up their resilience.

The issue of job security has also changed across generations. Unlike Baby Boomer and Gen Xers whose experience of work is in terms of full-time and regular employment, the younger generations grew up amidst contractual work, outsourcing, and separation programs. The COVID-19 pandemic has resulted in shift to work-from-home arrangements, a deterioration of economies, and job loss (Sarkodie & Owusu, 2021). A study in the United Kingdom reports that a greater percentage of Millennials and Baby Boomers are more likely to experience furlough, hours or pay loss, or lost jobs compared to other generations. Among the self-employed, Millennials report greater lost hours

and pay. They are also more pessimistic about losing their jobs and are less financially resilient compared to older generations (Belgibayeva et al., 2020).

Although there is increasing literature on the impact of COVID-19, there is a dearth of understanding on the impact of COVID-19 across various age groups. This study seeks to contribute to the knowledge on COVID-19-related stress using Lazarus and Folkman's (1987) Transactional Theory of Stress and Coping. Specifically, we examine differences in the experience of COVID-19-related stressors, individual characteristics (resilience and nonreactivity), coping behaviors, and mental health states and ask

- 1) To what extent do stressors, resilience, nonreactivity, and coping behaviors predict psychological well-being, depression, anxiety, and stress?
- 2) Are there differences in psychological well-being, depression, anxiety, and stress by age?
- 3) Are there differences in exposure to COVID-19 stressors by age?
- 4) Are there differences in resilience, nonreactivity, and coping behaviors by age?

## Methods

### Participants

This study was conducted between May and August 2020 in the Philippines, which has the world's longest and strictest COVID-19-related lockdown (Olanday & Rigby, 2020). A great majority (81%) were female, 18% were male, while 1% identified as LGBTQIA. Participants were 841 Filipinos aged between 15 and 68 ( $M = 31.01$ ,  $SD = 9.99$ ) years old.

### Materials

**Exposure to COVID-19 stressors.** Items from the Coronavirus Stressors Survey (McLean & Cloitre, 2020) were used to measure exposure to COVID-19 stressors. Participants responded to nine items. The first six items (e.g., "Become ill from possible or certain exposure to the coronavirus") used a 4-point Likert scale (ranging from 0 = "It doesn't apply to me" to 3 = "It happened to me personally and to someone close to me"). The seventh item ("Over the past week, how much difficulty have you had getting the social support you need due to the coronavirus pandemic?") used a

5-point Likert scale (ranging from 0 = "No difficulty at all" to 4 = "Extreme difficulty"). The eighth item ("Over the past week, how many hours a day are you exposed to coronavirus information (radio, TV, Twitter, Facebook, Instagram, newspapers)?") used a 5-point Likert scale (ranging from 0 = "None at all" to 4 = "More than two hours"). The ninth item ("Over the past week, how much distress have you experienced related to the coronavirus?") used a 5-point Likert scale (ranging from 0 = "No distress" to 4 = "Extreme distress"). The nine items were treated descriptively, but their sum was used in the regression analysis.

**Nonreactivity.** Items from the nonreactivity subscale of the Five Facet Mindfulness Questionnaire (Baer et al., 2006) were used to measure nonreactivity. Participants responded to seven items (e.g., "I perceive my feelings and emotions without having to react to them") using a 5-point Likert scale (ranging from 1 = "Never or very rarely true" to 5 = "Very often or always true"). The internal consistency reliability or Cronbach alpha was .87.

**Coping Behaviors.** Items from the adaptive coping behaviors of the Brief COPE inventory (Carver, 1997) were used to measure coping behaviors. Participants responded to 18 items (e.g., "I've been concentrating my efforts on doing something about the situation I'm in") using a 4-point Likert scale (ranging from 1 = "I haven't been doing this at all" to 4 = "I've been doing this a lot"). Exploratory factor analysis extracted three subscales (see Table 1), and the internal consistency reliability or Cronbach alpha was .83 (cognitive-behavioral coping), .84 (socioemotional coping), and .83 (spiritual coping).

**Depression.** Items from the Depression Anxiety Stress Scale-21 (DASS-21; Antony et al., 1998) were used to measure depression. The use of DASS-21 in assessing mental health status was validated in Asian, American, and European populations (Wang, Chudzicka-Czupala, et al., 2021; Wang, Tee, et al., 2021). Participants responded to seven items (e.g., "I couldn't seem to experience any positive feeling at all") using a 4-point Likert scale (ranging from 0 = "Did not apply to me at all" to 3 = "Applied to me very much, or most of the time"). Its internal consistency reliability or Cronbach alpha was .92.

**Anxiety.** Items from the DASS-21 (Antony et al., 1998) were used to measure anxiety. Participants responded to seven items (e.g., "I was aware of dryness of my mouth") using a 4-point Likert scale (ranging



**Table 1***Summary of exploratory factor analysis results for coping behaviors*

Item	Cognitive-Behavioral Coping (Factor 1)	Socioemotional Coping (Factor 2)	Spiritual Coping (Factor 3)
Strategizing	.68		
Taking action	.63		
Positive light	.60		
Live with it	.57		
Accept reality	.55		
Problem solving	.54		
Look at good	.52		
Distraction	.48		
Thinking steps to take	.38		
Recreation	.34		
Get advice		.82	
Get help		.77	
Emotional support		.68	
Comfort others		.65	
Express feelings		.54	
Escape		.50	
Praying			.85
Religion			.75
Eigenvalues	5.60	2.17	1.66
% variance	31.08	12.04	9.22
Cronbach's alpha	.83	.84	.83

*Note:* Only significant factor loadings are shown.

from 0 = “Did not apply to me at all” to 3 = “Applied to me very much, or most of the time”). It had an internal consistency reliability (Cronbach alpha) of .87.

**Stress.** Items from the DASS-21 (Antony et al., 1998) were used to measure stress. Participants responded to seven items (e.g., “I found it hard to wind down”) using a 4-point Likert scale (ranging from 0 = “Did not apply to me at all” to 3 = “Applied to me very much, or most of the time”). Its internal consistency reliability or Cronbach alpha was .88.

**Resilience.** Items from the Brief Resilience Scale (Smith et al., 2008) were used to measure resilience. Participants responded to six items (e.g., “I tend to bounce back quickly after hard times”) using a 5-point Likert scale (ranging from 1 = “Strongly disagree” to 5

= “Strongly agree”). Its internal consistency reliability or Cronbach alpha was .78.

**Psychological Well-Being.** Items from the World Health Organization Five Well-Being Index (WHO-5; World Health Organization, 1998) were used to measure psychological well-being. Participants responded to five items (e.g., “I have felt cheerful and in good spirits,”  $\alpha = .94$ ) using a 6-point Likert scale (ranging from 1 = “At no time” to 6 = “All of the time”). It had an internal consistency reliability (Cronbach alpha) of .92.

### **Procedure**

Exploratory factor analysis using SPSS version 23 was used to extract the adaptive coping behavior

subscales from the Brief COPE inventory. The maximum likelihood extraction method was used followed by an orthogonal (varimax) rotation method. The Kaiser–Meyer–Olkin measure indicated sampling adequacy ( $KMO = .86$ ), and the Bartlett’s test of sphericity indicated sufficient correlations,  $\chi^2(153) = 5592.13, p < .001$ . Only items with factor loadings of at least .3 were retained. Three factors had eigenvalues over Kaiser’s criterion of 1 and in combination explained 52.34% of the variance.

Hierarchical multiple regression analysis was used to determine the predictors of mental health states. To assess the regression assumptions, the residual plot, Durbin–Watson measure, normal probability plot, and variance inflation factors (VIF) were checked. Two-step and *K*-means cluster analyses were also conducted to classify the participants into age groups. Finally, independent samples *t*-tests were used to compare the measures between age groups.

## Results

### *Predictors of Mental Health States*

We performed hierarchical regression to examine the extent that stressors, resilience, nonreactivity, and coping behaviors predict mental health states (see Table 2). Based on the transactional theory of stress, the COVID-19 stressors were entered in the first step, followed by resilience, nonreactivity, and coping in each step with each mental health outcome. Results showed that COVID-19 stressors, resilience, and nonreactivity significantly predicted psychological well-being, depression, anxiety, and stress. Stressors accounted for 16% to 21% of the variance in the mental health outcomes with difficulty in obtaining social support and COVID-19 news as significant predictors of the mental health outcomes. In general, the greater the exposure to COVID-19 stressors, the poorer the well-being and the greater the stress, anxiety, and depression symptoms. The only exception was the negative relationship between exposure from work and depression, anxiety, and stress. Those who reported greater exposure to COVID-19 because of work reported less depression, anxiety, and stress symptoms.

Resilience accounted for the largest amount of variance (14% to 23%) in the mental health outcomes. The greater the resilience, the better the well-being

and the less stress, depression, and anxiety symptoms reported.

Nonreactivity explained between 3% to 5% of the variance in mental health outcomes. Individuals with greater nonreactivity reported higher well-being and lower stress, anxiety, and depression.

Over and beyond that which was accounted for by stressors, resilience, and nonreactivity, coping behaviors predicted an additional 2% to 4% of the variance in mental health outcomes. Both cognitive-behavioral and spiritual coping were significant predictors of well-being and depression. Individuals who report using these coping behaviors more reported greater well-being and lower symptoms of depression. Spiritual coping is negatively predictive of stress. Individuals who reported greater use of spiritual coping also reported less stress symptoms. Interestingly, socioemotional coping was positively associated with anxiety and stress. Individuals who reported using socioemotional coping strategies more reported greater anxiety and stress symptoms.

### *Classification by Age*

A two-step cluster analysis with a Euclidean distance measure was performed to identify the number of clusters among the participants. The inputs to the analysis were the participants’ age and scores on exposure to COVID-19 stressors, resilience, nonreactivity, coping behaviors, and mental health states. *K*-means cluster analysis was conducted to classify the participants into their respective clusters. The results of the cluster analyses showed two clusters (see Table 3). The first cluster was composed of participants aged between 16 and 35 years while the second cluster was composed of participants aged 36 years and above.

### *Age Differences in Mental Health States*

Independent samples *t*-tests were conducted to compare the mental health states of the two age groups (see Table 4). The test showed a statistically significant and small difference in the psychological well-being of the two age groups,  $t(797) = -6.27, p < .001, r = .22$ . The older group had greater psychological well-being compared to those 35 years and below.

There was also a moderate difference between the depression scores of the two age groups,  $t(579) = 10.21, p < .001, r = .39$ . The younger group had higher depression scores than the older group.

**Table 2**  
*Predictors of mental health states (N = 820)*

Variable	Standardized Regression Coefficients											
	$\Delta R^2$	F $\Delta$	Psychological well-being	$\Delta R^2$	F $\Delta$	Depression	$\Delta R^2$	F $\Delta$	Anxiety	$\Delta R^2$	F $\Delta$	Stress
Step 1	.18	21.52***		.21	26.79***		.16	19.39***		.18	22.73***	
Illness			−0.06*			.04			0.02			.07*
Hospitalization			.06*			−0.04			−0.00			−.03
Work exposure			.03			−0.07**			−.10**			−.07*
Lost income			.02			−.02			−.04			−.01
Responsibilities			−.03			−.02			−.00			.06*
Basic needs			−.00			.02			.05			.03
Social support			−.19***			.20***			.20***			.18***
COVID news			−.09**			.07**			.07*			.08**
Step 2	.15	175.71***		.23	338.34		.14	167.67***		.20	263.06***	
Resilience			0.23***			−.37***			−0.30***			−0.32***
Step 3	.05	62.16***		.03	47.42***		.03	32.15***		.05	67.01***	
Nonreactivity			0.21***			−0.17***			−0.21***			−0.26***
Step 4	.04	19.46***		.04	19.48***		.02	6.59***		.02	9.76***	
Cognitive-behavioral			0.14***			−0.14***			−0.03			−0.05
Socioemotional			−0.00			0.05			0.13***			0.12***
Spiritual			0.14***			−0.13***			0.03			−0.11***
F			43.63***			64.17***			32.96***			50.84***
R <sup>2</sup>			.41			.51			.35			.45

*Note.* \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .



**Table 3***Cluster centers*

	Cluster	
	16–35 years ( <i>n</i> = 582)	36 years & up ( <i>n</i> = 217)
Age	26	45
Become ill from possible or certain exposure to the coronavirus	1	1
Hospitalized from exposure to the coronavirus	1.1	1.1
Job requires possible exposure to coronavirus	2	2
Lost job or lost income due to the coronavirus pandemic	2	2
Increased responsibilities at home due to the coronavirus pandemic	3	3
Difficulty getting food, medication, important medical procedures, or other necessities due to the coronavirus pandemic	2	2
Over the past week, how much difficulty have you had getting the social support you need due to the coronavirus pandemic?	3	2
Over the past week, how many hours a day are you exposed to coronavirus information (radio, TV, Twitter, Facebook, Instagram, newspapers)?	4	4
Over the past week, how much distress have you experienced related to the coronavirus?	3	3
Resilience	3.16	3.49
Nonreactivity	3.07	3.25
Cognitive-behavioral coping	3.04	3.11
Socioemotional coping	2.62	2.55
Spiritual coping	2.79	3.30
Psychological well-being	3.37	3.93
Depression	2.07	1.56
Anxiety	1.93	1.63
Stress	2.13	1.83

**Table 4***t-Test of mental health states by age group*

Outcome	<i>M (SD)</i>		<i>t</i>
	16–35 years ( <i>n</i> = 582)	36 years & up ( <i>n</i> = 217)	
Psychological well-being	3.37 (1.15)	3.93 (1.06)	–6.27***
Depression	2.07 (0.80)	1.56 (0.54)	10.21***
Anxiety	1.93 (0.72)	1.63 (0.60)	6.05***
Stress	2.13 (0.70)	1.83 (0.57)	6.09***

Note: \**p* < .05, \*\**p* < .01, \*\*\**p* < .001.

Results also showed a small difference between the anxiety scores of the two age groups,  $t(460) = 6.05$ ,  $p < .001$ ,  $r = .27$ . The younger group had higher anxiety scores than the older group.

The findings also showed a small difference between the stress scores of the two age groups,  $t(472) = 6.09$ ,  $p < .001$ ,  $r = .27$ . The younger group had higher stress scores than the older group.

#### ***Age Differences in Exposure to COVID-19 Stressors***

Independent samples  $t$ -tests were conducted to compare the exposure to COVID-19 stressors of the two age groups (see Table 5). The test showed a statistically significant and small difference in difficulties in getting social support,  $t(797) = 3.02$ ,  $p = .003$ ,  $r = .11$ . The younger participants reported greater stress on the lack of social support compared to older participants.

Results also revealed a small difference in exposure to COVID-19 news,  $t(797) = 2.56$ ,  $p = .011$ ,  $r = .09$ . The younger respondents were more likely to report this as a stressor than the older participants.

Findings also showed a small difference in COVID-19-related distress,  $t(797) = 3.17$ ,  $p = .002$ ,  $r = .11$ . The younger respondents were more likely to be distressed than the older participants.

#### ***Age Differences in Resilience, Nonreactivity, and Coping Behaviors***

Independent samples  $t$ -tests were conducted to examine differences in resilience, nonreactivity, and coping behaviors (see Table 6). The test showed a statistically significant and small difference in resilience,  $t(797) = -5.74$ ,  $p < .001$ ,  $r = .20$ . The older respondents reported greater resilience than the younger respondents.

The findings also showed a small difference in nonreactivity,  $t(797) = -3.04$ ,  $p = .002$ ,  $r = .11$ . The older respondents had higher scores on nonreactivity than the younger respondents.

Results also revealed a moderate difference in spiritual coping,  $t(458) = -7.47$ ,  $p < .001$ ,  $r = .33$ . The older respondents had higher scores on this coping behavior than the younger respondents.

**Table 5**

*t-Test of exposure to COVID-19 stressors by age group*

Stressor	<i>M(SD)</i>		<i>t</i>
	16–35 years ( <i>n</i> = 582)	36 years & up ( <i>n</i> = 217)	
Become ill from possible or certain exposure to the coronavirus.	1.30 (0.66)	1.36 (0.67)	−1.27
Hospitalized from exposure to the coronavirus	1.09 (0.30)	1.15 (0.43)	−1.95
Job requires possible exposure to coronavirus	1.84 (1.07)	1.73 (0.98)	1.28
Lost job or lost income due to the coronavirus pandemic	1.90 (1.04)	1.82 (1.04)	0.87
Increased responsibilities at home due to the coronavirus pandemic	2.75 (1.06)	2.80 (1.04)	−0.53
Difficulty getting food, medication, important medical procedures, or other necessities due to the coronavirus pandemic	2.31 (1.19)	2.30 (1.20)	0.10
Over the past week, how much difficulty have you had getting the social support you need due to the coronavirus pandemic?	2.58 (0.99)	2.35 (0.97)	3.02**
Over the past week, how many hours a day are you exposed to coronavirus information (radio, TV, Twitter, Facebook, Instagram, newspapers)?	3.96 (1.14)	3.72 (1.15)	2.56*
Over the past week, how much distress have you experienced related to the coronavirus?	3.11 (0.87)	2.89 (0.87)	3.17**

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

**Table 6***t*-Test of resilience, nonreactivity, and coping behaviors by age group

Variable	<i>M (SD)</i>		<i>t</i>
	16–35 years ( <i>n</i> = 582)	36 years & up ( <i>n</i> = 217)	
Resilience	3.16 (0.74)	3.49 (0.67)	−5.74**
Nonreactivity	3.07 (0.75)	3.25 (0.71)	−3.04**
Coping behavior			
Cognitive-behavioral	3.04 (0.54)	3.11 (0.58)	−1.74
Socioemotional	2.62 (0.74)	2.55 (0.62)	1.19
Spiritual	2.79 (0.97)	3.30 (0.81)	−7.47**

Note: \**p* < .05, \*\**p* < .01.

## Discussion

The results validate the various facets identified by the Transactional Theory of Stress and Coping (Lazarus & Folkman, 1987). COVID-19 stressors significantly predicted psychological well-being, depression, anxiety, and stress. In terms of age differences, cluster analysis identified two groups—those below 35 years and those 36 and above. Interestingly, the groups are similar to a previous study on generations in the Philippines (Salvosa & Hechanova, 2020). Based on the significant markers that differentiated them, the older group (which combined Gen X and Baby Boomers) was labeled the political generation because they grew up amidst political events and transitions. The younger group (which combined Millennials and Gen Z) were labeled the technological generation because they were digital natives who grew up with technology (Salvosa & Hechanova, 2020).

Two COVID-19 stressors stand out as important predictors for mental health—the lack of social support and exposure to COVID-19 news—and the technological generation reported higher levels of these stressors compared to older respondents. The greater distress of the 16–35 years group over the lack of social support can be understood from a life-stage perspective. This group would be in the identity versus confusion and intimacy versus isolation stages (Erikson, 1950). During these stages, teenagers and young adults are forming their identities and their relationships with their peers, and significant others are an important part of this process. Thus, the restrictions

created to prevent the spread of infection as well as the shift to online education and work became barriers to connecting with peers and developing intimate relationships.

The impact of COVID-19 news on mental health is consistent with a meta-analysis that reports that media exposure to disasters is associated with negative psychological outcomes (Hopwood & Schutte, 2016). The younger respondents also reported greater distress because of COVID-19-related news. This may be explained from the lens of generations. Because of their connection to digital platforms, this technological generation has greater exposure to coronavirus information compared to older generations. However, negative and misleading information that was propagated in digital platforms may have also contributed to greater stress. A study by Hall and colleagues (2019) found that the amount of media exposure is positively associated with post-traumatic stress disorder (PTSD), while objective information and images of people being heroic is negatively associated with PTSD. This suggests that the type of news and information on COVID-19 matters.

The counterintuitive findings that those who reported greater exposure to COVID-19 because of work are less depressed, anxious, and stressed is worth noting. A possible explanation for this might be related to social support. That is, even as people who are reporting to work physically face greater exposure to COVID-19, this may be offset by the fact that they experience social support when they are with coworkers.

Beyond stressors, resilience also significantly predicted all mental health states. This supports literature affirming the role of resilience in helping people cope with adverse circumstances, anxiety, and depression (Foureur et al., 2013; Lin et al., 2020). Results revealed age differences with the younger generation reporting less resilience than older generations. This can be explained from a life-stage perspective. Older individuals have had greater experience with adversity and are more likely to appraise challenges as inevitable and transitory, which may explain their greater resilience. In addition, there is robust evidence that resilience is inversely related to anxiety and depression (Foureur et al., 2013; Seiler & Jenewein, 2019), which may explain the poorer mental health of the younger generation.

In terms of appraisal of stressors, nonreactivity predicted all mental health states. This validates the value of being aware of but nonjudgmental of one's inner experiences (Baer et al., 2006). A study on mindfulness for disaster survivors reports that nonreactivity is the facet most associated with decreased PTSD symptoms, specifically hyperarousal and emotional numbing (Stephenson et al., 2017). Older participants reported greater nonreactivity. That is, they had greater ability to be aware of their emotions, accept their emotions without judgment, and not be overwhelmed by them. One possible explanation for this is biology. Maturation differences of the subcortical and prefrontal regions of emerging adult versus middle to late adult brains explain difficulties in emotion regulation. Older adults are able to differentiate more easily threats from safety cues, which allows them to better analyze stressful situations (Lau et al., 2011; Skinner & Zimmer-Gembeck, 2007).

Our factor analysis elicited three categories of coping, and these predicted mental health states in different ways. The finding that cognitive-behavioral coping positively predicts psychological well-being and negatively predicts depression affirms the importance of cognitive-behavioral therapy (CBT) in helping individuals achieve better mental health. In fact, recent studies during the COVID-19 pandemic have affirmed the efficacy of CBT in decreasing depression, anxiety, and stress (Li et al., 2020; Rojas et al., 2021).

Spiritual coping negatively predicted both depression and stress. These results affirm studies

reporting the protective role of religion in enabling mental health in Asian and African (Trovão et al., 2017, Iranian (Aflakseir & Coleman, 2009, and Mexican (Moreno et al., 2017) cultures. Studies suggest that in cultures where religion plays an important role, spiritual coping may improve mental health states and resilience for those who practice it (Lucchetti et al., 2020; Roberto et al., 2020). However, our findings suggest that those 35 years and below appear less likely to use spiritual coping compared to the older generation. This is consistent with other studies that showed that it is individuals above the age of 65 who show greater affiliation with religion (Santero et al., 2019), with an overall increase in religious intensity and strength of beliefs over adult lifespan (Bengtson et al., 2015).

Socioemotional coping positively predicts anxiety and stress. This is seemingly counterintuitive as seeking social and emotional support is normally viewed as an adaptive way of coping. However, the results are consistent with another COVID-19-related study that found emotion-focused coping styles are associated with higher risk of psychological symptoms (Mariani et al., 2020). One explanation for this is that seeking social support from peers who are also stressed may actually exacerbate rather than alleviate depression, anxiety, and stress levels.

Although not statistically significant, the younger group reported less use of cognitive-behavioral strategies and greater use of socioemotional coping compared to older respondents. This is consistent with literature that found older adults to be more effective in employing coping strategies against interpersonal stressors and negative emotional states (Aldwin et al., 2010; Coats & Blanchard-Fields, 2008; Østby et al., 2009; Somerville, 2016; Tamnes et al., 2010). This, together with their greater life experience, lends to better mastery of self in response to stress (Aldwin et al., 2010; Carstensen et al., 2006; Coats & Blanchard-Fields, 2008).

### ***Limitations of Research and Implications for Future Research***

A limitation to the generalizability of the results is that the study was conducted in the Philippines, where quarantine and age restrictions were particularly stringent. In addition, in the Philippines, most of the elderly live with their families. This protective factor may not be present in other cultures, and the results

may not be generalizable in cultures where the elderly live alone.

Another limitation of the study is the unequal sample of respondents across age groups. Due to restrictions imposed by community quarantine rules, the researchers were restricted to online surveys to avoid face-to-face contact. As such, reaching elderly individuals who were not using online platforms was difficult. The results may need to be validated once restrictions allow greater access to participants.

In terms of the measures, the study did not include physical symptoms as COVID-19 stressors, which was found to be associated with adverse mental health outcomes (Wang, Chudzicka-Czupala et al., 2021). Also, the study used self-reports to assess mental health instead of using other objective measures such as brain imaging.

### ***Implications***

Early in the pandemic, there was a strong focus on geriatric health due to the established risk of morbidity and mortality from COVID-19 among the elderly (Channappanavar & Perlman, 2020; Liu et al., 2020). However, the data suggest that the need for mental health and psychosocial support may be just as important for younger generations who are particularly at risk for mental health issues. Specifically, there may be a need to strengthen their resilience, nonreactivity, and coping strategies. Fortunately, there is growing evidence that these factors are malleable and can be honed using interventions such as cognitive behavioral therapy, resilience interventions, mindfulness, and stress management training (Foureur et al., 2013; Labrague & de los Santos, 2020; Soklaridis et al., 2020).

The results suggest the absence of social support and COVID-19-related news are significant predictors of mental health. This has implications on the nature of mental health interventions that may be useful. The pandemic has seen a rise in the use of digital mental health interventions including self-help applications, online counseling, or mobile phone consultations (Soklaridis et al., 2020). In addition, online peer support programs have emerged for healthcare workers (Cheng et al., 2020) as well as survivors of COVID-19 (Hope et al., 2021). Peer support groups are mechanisms to give and receive help from others who share similar experiences (Hope et al., 2021) and provide instrumental or emotional support (Fisher et al., 2020).

They can be delivered by nonspecialists or trained nonprofessionals as ancillary assistance to reduce the need for clinical services (Fisher et al., 2020). As such, they may be viable sources of social support especially in low- and medium-income countries with a dearth of mental health professionals.

The finding that COVID-19 news may influence mental health highlights the importance of public health communication. In addition, that the young are particularly distressed by COVID-19-related news suggests the need to understand the messaging, communicators, and media that would be most effective for this age group.

Both resilience and nonreactivity are significant predictors of all mental health states. Moreover, cognitive-behavioral and spiritual coping are associated with greater well-being and less depression. Thus, interventions that improve resilience, nonreactivity, and adaptive coping may be important ways to prevent escalation of mental health problems especially among the young.

Especially in developing economies such as the Philippines with scarce resources for health, the issue of social justice and how to equitably distribute scarce resources is critical. To this end, a number of ethical principles have been suggested in guiding decisions on how to allocate resources. These include saving the most lives, saving those with most life years, prioritizing those who have made or are more likely to make relevant contributions, attending to the sickest first, or helping the youngest first (Mabaquiao, 2021). These principles can also be used in terms of the issue of mental health as well. Our results suggest that the youth are most vulnerable and why this is so. More importantly, the findings reveal the importance of honing resilience, nonreactivity, and coping behaviors to address mental health issues and achieve greater well-being.

### **Declaration of Ownership**

This report is our original work.

### **Conflict of Interest**

None.



## Ethical Clearance

This study was approved by our institution.

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