

## Virtues, Resilience, and Well-Being of Indigenous Youth in Peru

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### Abstract

**Objectives:** The objective of this study was to observe the relation of Values In Action (VIA) virtues, well-being, and resilience within a unique, non-Western population of Indigenous youth in the Peruvian Amazon.

**Methods:** Data were collected from students ( $n = 172$ , age range: 11-16 years) attending a rural village school via self-report surveys to assess relationships using the VIA Youth-96 (VIA-Y-96) Assessment, Personal Wellbeing Index (PWI-A), and the Child and Youth Resilience Measure (CYRM-28).

**Results:** The factor analysis of the CYRM-28 yielded a 3-factor breakdown (Social Engagement, Cultural Citizenship, and Guidance) instead of eight. Different VIA virtues predicted each of the three factors of the revised 3-factor CYRM-21-Peru model (CYRM-21-P); Transcendence, Humanity, and Wisdom were predictors of well-being; and higher reported resilience leads to higher well-being. Most participants scored very high on the PWI-A.

**Implications:** Research presented in this paper involved a unique population of Indigenous youth residing in the Peruvian Amazon, and found that (a) VIA virtues were differentially associated with well-being, (b) Humanity was a significant predictor across Cultural Citizenship and Social Engagement in the revised CYRM-21-P, and (c) higher resilience was correlated with higher well-being. Implications of this research can be used to inspire future research of Indigenous populations in a Latin American context to develop youth development programs that teach students from a strength-based perspective to improve vocational, academic, psychological, and social well-being.

**Keywords:** Peru; Indigenous; Youth; Values In Action virtues; Child and Youth Resilience Measure.

## Introduction

Positive psychology, pioneered by Martin Seligman (2002), has been a growing field for research and literature that encourages areas which contribute to living the “good life,” such as well-being, happiness, life satisfaction, and virtues (McGrath, 2015a; Proctor et al., 2011; Seligman & Csikszentmihalyi, 2000). The field of positive psychology has seen a surge of research around its central areas of focus, including strengths of character and well-being (Park et al., 2004; Seligman, 2002; Seligman & Csikszentmihalyi, 2000). However, much of this research is understood from a Western perspective, and there is a need for cross-cultural research and validated psychological tools for use in non-Western countries, like Peru (McGrath, 2015a; Park & Peterson, 2006; Perera et al., 2016; Proctor et al., 2011; Webb, 2014).

Peru is a South American country best known for its tourism. However, it is also rich in culture and traditions, with several Indigenous tribes scattered throughout the Amazon and surrounding regions. Although there is a growing interest in cross-cultural research of Indigenous populations in Australia and Canada, there remains a lack of research regarding Indigenous youth in Latin America. Our study examined Values In Action (VIA) virtues, resilience, and well-being in a Latin American population, specifically incorporating data from Indigenous populations in the Peruvian Amazon. We investigated the relationships between these constructs and examined the factor structure of the Child and Youth Resilience Measure (CYRM-28; Ungar & Liebenberg, 2011).

For any research on this population, it is important to consider the dominant value system in Latino culture. Perera and colleagues (2016) outlined some of the values paramount to Latin American culture to be: *familismo* – focusing on a cohesive family concerned with “values of family loyalty, collectivism, and cooperation with others over competition” (p. 242); *respeto* – fulfilling the role within the community; *personalismo* – the importance of relationships with others; *fatalismo* or *destino* – the belief that problems cannot be changed and are destined through the will of God; and lastly, *poner de su parte* (do their part) – signifying acts of service. The Latin American values of *familismo* and *respeto* align with traditional gender roles in a culture based on *machismo* (male dominance) predominant in traditional Latino families (Heaton & Forste, 2008). Another common traditional gender role is *marianismo*, which is the expectation that females will endure suffering through self-sacrifice for their family (Stevens, 1973). This negatively impacts women’s health and children’s overall well-being (Heaton & Forste, 2008).

## Indigenous Peoples in Peru

As of 2015, there were about 42 million Indigenous people in Latin America, making up 8% of the world’s population (World Bank, 2015). Along with Mexico, Bolivia, Guatemala, and Ecuador, Peru has the highest proportion (27%) of Indigenous people in Latin America (Organisation for Economic Cooperation and Development [OECD], 2019; Pasquier-Doumer & Brandon, 2015). Additionally, Peru has one of the highest discrepancies between urban and rural populations for life evaluation and positive affect, with rural populations reporting lower levels (Helliwell et al., 2020). These conditions contribute to an economic phenomenon known as the *poverty trap*, which is characterized by the cyclical conditions of poverty, hindering the full development and well-being of Indigenous children and communities as a whole (Johnston, 2006; OECD, 2019). To work towards the empowerment of Indigenous youth and their surrounding communities, OECD (2019) states that positive development work must be prioritized to improve the well-being of rural Indigenous youth in Peru.

## Challenges to Development

Indigenous youth populations face many challenges that negatively impact their optimal development and well-being (Jaffee et al., 2007; Perera et al., 2016; Steele, 2018; Suarez, 2013). To address the gap of research between Western and Indigenous populations, Perera et al. (2016) suggested that research must begin by understanding the challenges that Latin Americans face in their psychological development. Approximately 40% of Peru’s youth population is considered highly vulnerable and faces challenges including social exclusion, low socioeconomic status, traditional gender roles, and higher rates of leaving the education system (OECD, 2019; Perera et al., 2016). For example, only 10% of Indigenous youth pursue academia beyond secondary education (OECD, 2019; Pasquier-Doumer & Brandon, 2015). Latino youth exhibit emotional resilience despite considerable adversity but still engage in risky behaviors that delay positive development and well-being (Perera et al., 2016). To combat many of the challenges towards attaining their full development, OECD (2019) advised for development programs to create more inclusive environments and improve the education of Indigenous Peruvian youth.

### VIA Virtues

In positive psychology, there are three elements of positive functioning: positive character, positive experiences, and positive communities and institutions (Seligman & Csikszentmihalyi, 2000). Positive character ultimately is influenced by the development of virtues and character strengths, which is the foundation for the VIA Classification of Strengths Assessment (Seligman & Csikszentmihalyi, 2000). The VIA Assessment was developed to identify important positive traits of an individual and has been used in a wide variety of research, primarily as a predictor of well-being and life satisfaction, and has a growing number of translations for use in cross-cultural research (McGrath, 2015a, 2015b; Park & Peterson, 2006; Park et al., 2004). *Character* refers to the set of positive traits that are crucial for the “good life,” *virtues* are defined as core characteristics established by moral philosophers and *character strengths* are the psychological processes or mechanisms that define those virtues (Park & Peterson, 2006; Seligman et al., 2004).

The six key virtues were chosen from ancient Asian, Greek, Christian, and Muslim philosophical and theological texts on the nature of virtue (McGrath, 2015a; Park et al., 2004). The designation of a “master” virtue has historically been debated, however, there is no consensus concerning which virtue is the most important in a fulfilling life (Park et al., 2004). The VIA Assessment is organized into six broad virtues – Wisdom, Courage, Humanity, Justice, Temperance, and Transcendence – each comprised of three to five individual character strengths (see Table 1; McGrath, 2015b; Park & Peterson, 2006; Seligman & Csikszentmihalyi, 2000; Seligman et al., 2004).

Park et al. (2004) believed the VIA classification system was a universal construct and confirmed it across 50 cultures with similar structures. A decade later, McGrath (2015a) extended and updated the original research and found convergence across all 50 states in the United States, in addition to 54 other nations, for a total of 75 nations finding substantial similarity. In their multinational study, Peru ( $n = 171$ ) reported participant’s top strengths under the virtues of Wisdom (which were curiosity, judgment, and creativity), Justice (fairness), and Humanity (love).

**Table 1.** Six VIA Virtues and Their Related Character Strengths

Humanity	Wisdom	Courage	Justice	Temperance	Transcendence
Love	Creativity	Bravery	Fairness	Forgiveness	Gratitude
Kindness	Curiosity	Honesty	Leadership	Humility	Hope
Social Intelligence	Love of Learning	Perseverance	Teamwork	Prudence	Appreciation of Beauty and Excellence
	Judgment	Zest		Self-Regulation	Humor
	Perspective				Spirituality

*Note.* This table is adapted from Park and Peterson (2006).

### Resilience

The concept of resilience has yet to be standardized by any one definition. Most commonly, the term *resilience* refers to an individual's ability to overcome adversity and continue their normal development (Ungar, 2008). Resilience is a bidirectional and multidimensional construct where individuals competently engage with issues, which are composed of complex sociocultural factors and threaten their well-being. Positive functioning in posttraumatic growth signifies resilience and almost always exists in the presence of adversity, though existing research on resilience remains limited in non-Western cultures (Ungar, 2008).

Previous research attributes the need for resilience in Indigenous populations to their colonial history (Steele, 2018), maltreatment within the family or community (Jaffee et al., 2007), land-based traumas (Drawson et al., 2016), or war trauma (Suarez, 2013). Perera et al. (2016) found that having a strong sense of ethnic identity contributes to individual resilience among Latin Americans, which is crucial for Indigenous populations because it functions as a protective factor against discrimination, oppression, and marginalization. Additionally, place-based identities are central to identity development, living the “good life”, and are critical to the survival and well-being of Indigenous peoples in Peru (Steele, 2018). Other research shows that *familismo* functions as one of the top contributors to resilience amongst Latin Americans (Perera et al., 2016). It is crucial to evaluate the relationship between ethnic identity factors and the well-being of Indigenous youth.

### Well-Being

Character strengths are an essential component and unique predictor of subjective well-being (SWB; Azañedo et al., 2014; Castro Solano & Cosentino, 2016; Proctor et al., 2011). SWB encompasses happiness, emphasizing higher

positive emotions, lower negative emotions, and life satisfaction (Proctor et al., 2011). Seligman expanded this concept with his theory of well-being known as PERMA, stating that human strengths help establish Positive Emotions, Engagement, Relationships, Meaning, and Achievement (Seligman, 2011). In fact, being aware of your top strengths can increase life satisfaction and well-being (Castro Solano & Cosentino, 2016). Knowing and using strengths has also been found to increase SWB, and increased SWB improves mental and physical health (Proctor et al., 2011). For unique populations such as Indigenous youth in Peru, it may be helpful to consider SWB in a quality of life framework that considers satisfaction with important well-being factors such as health and security, not just general satisfaction (International Wellbeing Group, 2013).

Well-being is impacted by significant events (Proctor et al., 2011), which may include trauma, illness, or psychological disorders. People who experience traumatic events report higher scores on their character strengths (Peterson et al., 2008). This is a crucial consideration in this body of work due to the significant challenges that Indigenous youth face. There is a need to include under-studied populations like Indigenous youth, while focusing on their values, strengths, and resilience, to inform successful youth development interventions.

### How Virtues Contribute to Resilience and Well-Being

In their assessment of resilience and virtues, Seligman et al. (2004) stated that “strengths and virtues determine how an individual copes with adversity” (p. 65). Personality strengths and virtues are buffers against life stressors and challenges and may create resilient outcomes (Proctor et al., 2011). Resilience is also related to positive well-being indicators (Sanders et al., 2015; Steele, 2018). Peterson et al. (2008) reported an association between the development of character strengths and growth after traumatic events. All virtues were positively correlated with post-traumatic growth, especially the virtue of Transcendence. In European university students, research found that the character strengths of hope, zest, and bravery were the most significant predictors of resilience (Martínez-Martí & Ruch, 2017). Not only are these results consistent across research on virtues and resilience, but they are also consistent across research in well-being, noting that emotional strengths are the most significant predictors of both resilience and well-being.

Previous studies found that individual character strengths correlate with indices of well-being, but due to a wide variety of operationalizations, it is challenging to make comparisons across strengths (Park et al., 2004). Significant research has explored the relationship between character strengths and the cognitive component of SWB: life satisfaction (Azañedo et al., 2014; Castro Solano & Cosentino, 2016; Park et al., 2004; Peterson et al., 2008; Proctor et al., 2011). Life satisfaction is defined as one’s feelings and attitudes about his or her life, which can be positive or negative at any given point (Proctor et al., 2011). It is generally associated with character strengths and thought to be psychologically fulfilling (Park et al., 2004). Much of the existing research consistently concludes that hope, zest, gratitude, love, and curiosity are significantly related to life satisfaction, with hope and zest as the most significant positive predictors of higher levels of life satisfaction (Azañedo et al., 2014; Park et al., 2004; Proctor et al., 2011). These five character strengths are commonly referred to as the “strengths of the heart” in correspondence to their influence across cultures and their significant relationship with life satisfaction (Park et al., 2004). Hope, zest, and curiosity refer to a life of engagement, whereas love and gratitude signify a life of meaning (eudaimonia; Castro Solano, 2014; Proctor et al., 2011).

### Current Study

With a growing body of research focusing on the examination of character strengths and interrelationships with various facets of life (personal, environmental, and situational), including an examination of the CYRM-28 will further explore these interrelationships with resilience (Proctor et al., 2011). The current study investigates the relationship between virtues, resilience, and well-being for a sample of Indigenous youth in the Peruvian Amazon. Based on the research reviewed, socioeconomic status, cultural values, and Indigenous challenges could contribute to unique patterns in the relationships among these variables. Based on the literature about general Latin American values and the resilience needs of Indigenous people, we expected that cultural and community contexts would be essential aspects of resilience. Additionally, the virtues of Justice, Humanity, and Temperance would especially contribute to these aspects of resilience as they overlap with the value of community, *personalismo*, or *poner de su parte* (Perera et al., 2016).

## Method

### Participants

Participants were students attending a rural village high school, reached by boat in the Amazon forest, in the Loreto region of Peru. The questionnaire items were reviewed and approved by the principal and a teacher. Participants completed self-report paper surveys in their classrooms. The sample included 172 primary and secondary students (83 boys, 86 girls, and 3 undisclosed). Participants ranged in age from 11 to 16 years ( $M = 14.06$ ,  $SD = 1.51$ ). They described themselves as part of an Indigenous ethnic group (66%), not part of an Indigenous ethnic group (6.5%), or unsure whether they were a part of an Indigenous ethnic group (22.5%). Most participants reported that they practice a religion (80%).

Originally, this research had George Fox University IRB approval to be conducted in Nicaragua, but due to unforeseen events research was abruptly adapted to populations in Peru. The methods and measures prepared for Nicaragua remained the same for this research and changes to the population studied were reported to the IRB. Additional consent was also obtained from the school principal, each teacher, as well as each student.

### Materials

**Virtues.** The 96-question *VIA Inventory of Strengths for Youth* (VIA-Y-96; Park & Peterson, 2006) organizes 24 character strengths under six virtue categories (see Table 1). This assessment has been validated in Spanish populations to identify an individual's top character strengths and virtues (Azañedo et al., 2014). Participants respond to items on a rating scale from 1 (*not like me at all*) to 5 (*very much like me*). An example item is, "I find the world a very interesting place." Reliability for the six virtues was adequate in this sample ( $\alpha = .66-.87$ ,  $\omega = .68-.87$ ).

**Resilience.** The 28-item *Child and Youth Resilience Measure* (CYRM-28; Ungar & Liebenberg, 2011) is a self-report measure of resilience. Items assess how much the respondent feels certain important factors (individual, relational, and contextual) are present in their life. Participants responded to items on a rating scale ranging from 1 (*not at all*) to 5 (*a lot*). The CYRM-28 was validated using a sample of Canadian youth who were identified as using concurrent social services (Liebenberg et al., 2012). The CYRM-28 originally consisted of eight factors, but we identified an alternate factor structure in the current study (discussed in the Results section). Reliability in this sample was adequate, ( $\alpha = .59-.83$ ,  $\omega = .62-.84$ ).

**Well-Being.** The *Personal Wellbeing Index*, adult version (PWI-A; International Wellbeing Group, 2013; Lau et al., 2005) assesses seven domains of life deemed important for well-being: health, living standard, achievements, safety, group membership, future security, and relationships. The PWI-A version in Spanish is suggested for use with ages 12+ (F. Casas, personal communication, October 5, 2014), and has been validated in Chile with adolescents 14 to 16 years old (Alfaro, et al., 2014). Sarriera and colleagues (2014) recommended that satisfaction with spirituality be added to the original seven items for this study since it is considered an important factor for neighboring South American populations. Participants responded to items on a rating scale from 0 (*completely dissatisfied*) to 10 (*completely satisfied*). Reliability in this sample was adequate ( $\alpha = .75$ ,  $\omega = .75$ ).

## Results

Analyses were completed in Jeffrey's Amazing Statistics Program (JASP; JASP Team, 2020). Descriptive statistics were run on all variables and scale reliability coefficients were estimated (see Table 2). Rates of missing data and distributional information for all variables are available in the online supplemental materials (<https://osf.io/psrfk/>). Appropriateness of factor analysis was indicated by the Kaiser-Meyer-Olkin (KMO) measure,  $KMO = .77$ , and Bartlett's Test of Sphericity,  $\chi^2(378) = 1,064$ ,  $p < .001$ . No gender differences were observed in the variables except for Guidance,  $t(167) = 2.14$ ,  $p = .034$ ,  $d = 0.33$ , 95% CI = [0.03, 0.63]. Females had higher scores ( $M = 3.83$ ,  $SD = 0.62$ ) than males ( $M = 3.62$ ,  $SD = 0.66$ ).

**Table 2.** Descriptive Statistics for PWI-A, VIA-Y-96, and CYRM-21-P Scores

Scale	M	SD	Range	Reliability ( $\alpha/\omega$ )
<b>PWI-A</b>	7.77	1.70	0.38–10.00	.75/.75
<b>VIA-Y-96</b>				
Wisdom	3.43	0.60	1.95–4.90	.87/.87
Courage	3.46	0.54	2.19–4.69	.81/.82
Humanity	3.54	0.63	1.92–4.75	.77/.78
Transcendence	3.59	0.52	2.40–4.75	.81/.82
Justice	3.37	0.63	1.92–4.92	.79/.80
Temperance	3.35	0.47	2.06–4.44	.70/.68
<b>CYRM-21-P</b>	3.53	0.45	2.30–4.49	.83/.84
Cultural Citizenship	3.81	0.54	2.11–5.00	.71/.72
Social Engagement	3.29	0.62	1.60–4.86	.64/.66
Guidance	3.72	0.64	1.60–5.00	.59/.62

Note. CYRM factors shown are from the 21-Item-Peru scale shown in Table 4.

### Virtues and Well-Being

A stepwise linear regression was conducted predicting PWI-A mean scores from the six VIA-Y-96 virtues (see Table 3). The final model was significant,  $R^2 = .19$ ,  $F(3, 167) = 12.89$ ,  $p < .001$ . Transcendence was the strongest predictor of PWI-A mean scores ( $\beta = .35$ ,  $p = .002$ ), followed by Humanity ( $\beta = .32$ ,  $p = .003$ ), and Wisdom ( $\beta = -.24$ ,  $p = .044$ ). Courage, Justice, and Temperance were not included in the regression.

**Table 3.** Stepwise Regression Predicting Well-Being from VIA Virtues

Variables	B	95% CI for B		SE B	$\beta$	$R^2$	$\Delta R^2$
		LL	UL				
<b>Step 1</b>						.00	.00
Constant	7.77**	7.51	8.02	0.13			
<b>Step 2</b>						.14**	.14**
Constant	3.36**	1.69	5.03	0.85	.38***		
Transcendence	1.23**	0.77	1.69	0.23			
<b>Step 3</b>						.17***	.03*
Constant	2.95**	1.27	4.64	0.85			
Transcendence	0.75*	0.14	1.36	0.31	.23*		
Humanity	0.60*	0.09	1.11	0.26	.21*		
<b>Step 4</b>						.19***	.02*
Constant	2.98**	1.31	4.65	0.85			
Transcendence	1.15**	0.43	1.87	0.36	.35**		
Humanity	0.86**	0.30	1.42	0.28	.32**		
Wisdom	-0.69*	-1.37	-0.02	0.34	-.24*		

Note. CI = confidence interval; LL = lower limit; UL = upper limit. The following covariates were considered but not included: Courage, Justice, and Temperance. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

### Factor Analyses for the CYRM-28

The factor structure of the CYRM-28 was examined using structural equation modeling (see Table 4). Model loadings, covariance/residual matrices, and modification indices are available in the online supplemental materials. Fit for each model was tested on the same data set due to sample size limitations. The confirmatory factor analysis (CFA) did not confirm the 8-factor (Model A) or 4-factor (Models B and C) models. Items 7, 13, 14, 15, 16, 19, and 22 were removed and the structure was reduced to three factors. CFA confirmed the adequacy of this final model (Model D). After an examination of the items loading onto each factor, the factors were named *Cultural Citizenship*, *Social Engagement*, and *Guidance* (see Table 5). This revised factor model was named CYRM-21-Peru (CYRM-21-P).

**Table 4.** Results of the CFA of the Child and Youth Resilience Measure

Model <sup>a</sup>	$\chi^2$	df	CFI	TLI	BIC	ECVI	RMSEA	95% CI	
								LL	UL
A: 8-Factor <sup>b</sup>	501.17***	322	0.76	0.72	13629.79	3.89	0.057	0.047	0.066
B: 4-Factor <sup>b</sup>	484.59***	344	0.82	0.80	13499.97	3.54	0.049	0.038	0.059
C: 4-Factor <sup>c</sup>	290.12**	224	0.89	0.87	11138.63	2.29	0.041	0.026	0.054
D: 3-Factor <sup>d</sup>	225.53*	186	0.93	0.92	9992.80	1.83	0.035	0.013	0.050

Note. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ . CFI = comparative fit index; TLI = Tucker-Lewis Index; BIC = Bayesian information criterion; ECVI = expected cross-validation index; RMSEA = root mean square error of approximation.

<sup>a</sup>See online supplemental materials for model specification details.

<sup>b</sup>These models used the 28-item pool.

<sup>c</sup>This model used the 23-item pool.

<sup>d</sup>This model used the 21-item pool.

**Table 5.** Factor Loadings for the Child and Youth Resilience Measure, 21-Item-Peru (CYRM-21-P)

CYRM Factors/Items	Factor Loading		
	1	2	3
<b>Cultural Citizenship</b>			
4. I know how to behave in different social situations.	.46		
10. I am proud of my ethnic background.	.42		
17. My family stands by me during difficult times.	.37		
20. I have opportunities to show others that I am becoming an adult and can act responsibly.	.50		
21. I am aware of my own strengths.	.53		
24. I feel safe when I am with my family/caregiver(s).	.59		
25. I have opportunities to develop skills that will be useful later in life (like job skills and skills to care for others).	.38		
27. I enjoy my community's traditions.	.43		
28. I am proud to be a citizen of Peru.	.37		
<b>Social Engagement</b>			
1. I have people I look up to.		.39	
2. I cooperate with people around me.		.60	
11. People think that I am fun to be with.		.54	
12. I talk to my family/caregiver(s) about how I feel.		.65	
18. My friends stand by me during difficult times.		.34	
23. I think it is important to serve my community.		.32	
26. I enjoy my family's/caregiver's cultural and family traditions.		.61	
<b>Guidance</b>			
3. Getting an education is important to me.			.42
5. My parent(s)/caregiver(s) watch me closely.			.62
6. My parent(s)/caregivers(s) know a lot about me.			.65
8. I try to finish what I start.			.39
9. Spiritual beliefs are a source of strength for me.			.41

Notes.  $n = 172$ . Loadings correspond to those from Model D (see Table 4).

### Resilience and Well-Being

Pearson correlation coefficients were estimated between PWI-A mean scores and the three CYRM-21-P factors. PWI-A mean scores correlated most strongly with Social Engagement,  $r(170) = .40, p < .001, 95\% \text{ CI} = [.27, .52]$ , followed by Cultural Citizenship,  $r(170) = .37, p < .001, 95\% \text{ CI} = [.24, .50]$ , and Guidance,  $r(170) = .36, p < .001, 95\% \text{ CI} = [.23, .49]$ . These results suggest that individuals with higher resilience, across all three revised factors, tend to have higher well-being. Though only correlational, this supports the validity of the revised CYRM-21-P factor structure for use in Peru.

## Resilience and Virtues

Three stepwise regressions were conducted, each predicting one of the CYRM-21-P factors using the VIA-Y-96 virtues. Residuals were homoscedastic and normally distributed. The final model of the regression predicting the Cultural Citizenship factor was significant,  $R^2 = .17$ ,  $F(1, 169) = 35.23$ ,  $p < .001$ . The only significant predictor was Humanity ( $\beta = .42$ ,  $p < .001$ ). The final model of the regression predicting the Social Engagement factor was significant,  $R^2 = .31$ ,  $F(2, 168) = 37.05$ ,  $p < .001$ . Humanity ( $\beta = .35$ ,  $p < .001$ ) and Justice ( $\beta = .26$ ,  $p = .002$ ) were significant predictors. The final model of the regression predicting the Guidance factor was significant,  $R^2 = .24$ ,  $F(2, 168) = 25.83$ ,  $p < .001$ . Transcendence ( $\beta = .30$ ,  $p < .001$ ) and Temperance ( $\beta = .24$ ,  $p = .007$ ) were significant predictors.

## Discussion

The present study reports on the interrelationships between VIA-Y-96 virtues, the CYRM-21-P, and the PWI-A within a unique population of Indigenous youth in the Peruvian Amazon. Results suggest that Transcendence, Humanity, and Wisdom were associated with well-being and that resilience is positively related to well-being. The new CYRM-21-P factors predict well-being, which supports the construct validity of the new factor structure found. Different VIA virtues predicted each of the three factors of the revised 3-factor CYRM-21-P model. PWI-A scores were heavily negatively skewed, and the Humanity, Cultural Citizenship, and Guidance scores displayed moderate negative skew. This shows that our participants tended to score higher on these measures and that these variables violated some statistical assumptions. It also suggests that additional research regarding the PWI-A and its relevance in Peru may be necessary.

When testing for gender, baseline results showed non-significant differences amongst virtues, resilience, or well-being, except for the CFA factor of Guidance. This is inconsistent with previous research on Latin American women showing lower well-being related to challenges they face living in areas where traditional gender roles are heavily enforced (Heaton & Forste, 2008; Stevens, 1973). This suggests that there may be differences in the value systems between Latin American traditional gender norms (i.e., *machismo* and *marianismo*) and the value systems of the Indigenous youth in this study.

Seven items were removed from the CYRM-28 to derive an appropriate factor structure from the data. The final model included three factors instead of the 6- or 8-factor models of resilience supported by existing research in other cultures (Liebenberg et al., 2012; Martínez-Martí, & Ruch, 2017; McGrath, 2014). The CYRM-28 factor structure in the original research broke down into three subscales: individual factors, caregiving, and contextual components (Liebenberg et al., 2012). Research on Indigenous peoples in the Latin American region found that ethnic membership and ethnic identity contributed to their citizenship and sense of belonging (Webb, 2014). This interplay between ethnic and civil constructs of belonging suggests that Indigenous youth in Latin American contexts may place a stronger emphasis on values that foster community. This may explain why the factors of Social Engagement, Cultural Citizenship, and Guidance emerged, rather than a factor of individual traits.

Within these three factors, the remaining 21 items of the CYRM-28 were unusually dispersed. For example, the item *"I feel safe when I am with my family/caregiver(s)"* was loaded into Cultural Citizenship, but *"My parent(s)/caregiver(s) watch me closely"* was allocated to Guidance. The importance of *familismo* within the Latin American context (Perera et al., 2016), along with the strong community-based lifestyle of these tribes, may help explain why family items are relevant to all three factors. Linguistic equivalence may point towards another explanation. Participants may have a different conception of resilience compared to other cultures, or linguistic differences had the potential to be misinterpreted (e.g. "caregiver" could have expanded questions about parents beyond the nuclear family, or "personal relationships" could mean romantic relationships; Liebenberg et al., 2012). Other explanations include the cultural understanding of what is an individual role compared to a communal role (e.g. guardianship/caregiving/parental roles). The tribes included in this sample may see caregiving as a fluid responsibility, spread among community members, rather than within each set of parents. Research on collectivism also indicates that the sense of identity in these cultures may focus more on social and collective attributes than in individualistic cultures (Kanagawa et al., 2001). This may help to explain the lack of a clear distinct factor for individual characteristics.

The VIA virtues are associated differently across the new factor model. Humanity was the most significant virtue that predicted Cultural Citizenship; Humanity and Justice were significant predictors of Social Engagement, and Transcendence, and Temperance were significant predictors of Guidance. Park et al. (2004) suggested that intellectual strengths like love of learning and judgment have weak associations with life satisfaction. Consistent with Park et al.'s



findings (2004), this study found Wisdom negatively correlated with well-being. Wisdom may be negatively associated with well-being in this sample due to a lack of emphasis on intellectual strengths, or perhaps a lack of opportunity to exercise them.

The PWI-A mean scores correlated with all three factors, but was strongest with Social Engagement, consistent with existing research about the social structures and value of community in Latin American youth (Heaton & Forste, 2008; Pasquier-Doumer, & Brandon, 2015; Perera et al., 2016). According to Perera et al. (2016), the values of people in Latin American contexts tend to place their role within the community and family as the priority. The values of *familismo*, *respeto*, *personalismo*, and *poner de su parte* may be heightened in the Indigenous community and their duty to the communal job role. Indigenous people in the Loreto region of Peru utilize their traditional songs and dances to generate an income (\$4.78 billion; Ministry of Foreign Trade and Tourism of Peru, 2019) within the tourist industry. The role of heritage tourism (Herrera, 2013) as the source of income for the Indigenous community may inhibit the educational goals of youth while also contributing to their sense of cultural citizenship. Discrimination and social inequality experienced by the Indigenous community in Peru is detrimental to their sense of belonging and identity outside of their community (Pasquier-Doumer, & Brandon, 2015).

### Limitations

Several limitations to this study are consistent with limitations across pre-existing research and literature reviews. Historically, the most prominent limitation when gathering data from Indigenous populations in Latin America, specifically within Peru, has been small sample sizes (Castro Solano, 2014; Drawson et al., 2016; McGrath, 2015a; Park & Peterson, 2006; Park et al., 2004; Perera et al., 2016; Proctor et al., 2011; Seligman et al., 2004; Webb, 2014). Small sample sizes limit the generalizability of research findings beyond the group studied (McGrath, 2015a). Further, our use of the same data set for multiple CFA models increases the risk of overfitting.

Although the measures used in this study have impressive international roots, they have been primarily validated in Western populations (Liebenberg et al., 2012; McGrath, 2015a; Proctor et al., 2011), creating an additional limitation for studies that focus on unique Indigenous populations. There is a need for cross-ethnic research to adapt Western-validated tools to different cultures and ethnicities. A primary example of this is the linguistic equivalence of Spanish measures for Indigenous youth in Peru which may point to a lack of clarity in cultural differences in linguistics. More research will be needed to determine the factors contributing to the central differences in factor structure between the CYRM-28 in Canada (Liebenberg et al., 2012) and the CYRM-21-P used with these youth.

McGrath (2015a) notes that most existing cross-cultural exploration of the VIA-Y-96 included individuals who are relatively well-educated, interested in the research presented, and from economically stable households. Previous studies required internet access, attracted individuals who had an interest in their strengths, as well as those who had a college education. Access to college education is lacking in the majority of the population, and likely does not include rural areas (McGrath, 2015a). Extreme resource deficiencies represent a significant limitation and explanation for the lack of research on Indigenous populations. Another limitation to understanding the cultural implications of this research is that we do not identify as being part of the Indigenous community. Subsequently, our results have been interpreted through a non-Indigenous lens which may limit our understanding of deeper implications for Indigenous youth in Peru.

### Implications

Further study into the interrelationships between VIA virtues, resilience, and well-being has a multitude of possibilities, as existing research is lacking within Latin American Indigenous populations. This study can be used as supplementary material in conjunction with other research to help work towards improving the overall well-being and resilience of Indigenous youth by supporting their strengths and virtues. Future directions need to consider the unique value system that has been examined in existing literature (Perera et al., 2016) as well as variations in general Latin American values and those of Indigenous tribes.

The VIA character strengths system has been used to create youth development programs to help optimize their development (Park & Peterson, 2006; Seligman, 2011). These programs have been implemented in school-based systems to foster well-being with specific goals that target the development of certain strengths (Park et al., 2004). These types of programs would be beneficial to Indigenous Peruvian youth, providing them with the materials and skills to foster positive well-being, while combatting discrimination and racial inequalities. Sanders et al. (2015) expresses the need for positive youth development practices to increase resilience and well-being outcomes of all

youth. Other strengths-based interventions include strengths-focused exercises such as counting blessings, gratitude activities, or acts of kindness. These positive psychology interventions work towards improving positive affect and increasing well-being and life satisfaction (Peterson & Seligman, 2004; Seligman & Csikszentmihalyi, 2000). Such strengths interventions have been shown to increase happiness and decrease depressive symptoms for up to six months (Seligman et al., 2005, as cited by Proctor et al., 2011). The Happy Classrooms Program [*Aulas Felices*] is an example of an intervention developed in Spain for implementation in schools focusing on character strengths and mindfulness (Alzina & Peniello, 2017). Similar programs could be adapted for use with Indigenous youth in Peru, with careful consideration of the values and goals of the community. Based on findings from this study, these types of efforts should carefully consider the role of Humanity in this population.

Further research should also explore the qualitative meaning of the resilience factors that emerged from this study. Interviewing members of the tribal communities could highlight cultural differences between tribes and their greater cultural context. Such insights could further inform efforts to improve youth outcomes with this population. Not only will further exploration into character strengths and virtues, resilience, and well-being yield positive outcomes to help populations reach their optimal development in a Latin American context, but it will also provide future research with baseline data on unique cultures and communities.

## Funding

Special appreciation to George Fox University Richter Scholarship Funding, the George Fox University Psychology Department, and to Claire Retter for their support in this research.

## Conflict of interest

The authors have no conflict of interest to disclose.

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