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Joe Pong

Chi Hung Leung

Ching-Leung Lung

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Validating the Chinese-translated version of the Spiritual Health and Life-orientation Measure (SHALOM) amongst the Chinese youth populations in 2010 and 2018

Hok-Ko Pong[b], Chi Hung Leung[a] and Ching-Leung Lung[a]

[a]Department of Special Education and Counselling, The Education University of Hong Kong, Hong Kong, China; [b]Faculty of Management and Hospitality, Technological and Higher Education Institute of Hong Kong, Hong Kong, China

ABSTRACT

This cross-sectional study validated the Chinese-translated version of the Spiritual Health and Life-orientation Measure (SHALOM) in two samples of university students in Hong Kong. The first sample comprised 546 Chinese university students who were educated under the old educational system (i.e. 3 + 2 + 2 + 3 scheme) and are known as 'Generation Y'. Data for this sample were collected in 2010 for Fisher and Wong. The second sample involved 474 Chinese university students educated after educational reform in 2009 (i.e. 3 + 3 + 4 scheme) collected in 2018. Results in both years revealed high internal consistency. Whereas the SHALOM model proposes four domains of spirituality (personal, communal, environmental and transcendental), exploratory and confirmatory factor analyses indicated that a three-factor model provided the best fit to the data, with the personal and communal domains combined as one domain. This three-factor model was identified in both the 2010 and 2018 samples, and in both males and females. Findings indicated that compared to non-religious participants, religious participants had significantly higher scores in the transcendental domain of spiritual health on both the ideal values and lived experience subscales. The results are discussed in relation to Confucian philosophy. Future research on the spiritual health of youth in Hong Kong is suggested.

KEYWORDS

Spirituality; spiritual well-being; Chinese youth

Introduction

In the past decades, spirituality has become an increasingly prominent focus in various fields, including anthropology, psychology, neuroscience, medicine and sociology. Emmons (1999) remarked that 'spirituality is on the rise, both culturally and scientifically' (60), and Carrette and King (2004) observed that the concept of spirituality 'has become pervasive in contemporary society in the consciousness of its advocates and detractors' (5). The medical field provides one example. Katz (2008) tracked the use of the terms 'spiritual' and 'spirituality' in the medical literature from 1976 to 2002 and identified an exponential increase in the use of

CONTACT Chi Hung Leung chhleung@eduhk.hk Department of Special Education and Counselling, The Education University of Hong Kong, Hong Kong, China

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these terms beginning in the mid-1980s, particularly after the mid-1990s. Katz (2008) noted, 'This demonstrated an important trend that continues today . . . which is an increasingly wide recognition that spirituality is considered an important dimension for understanding health concerns' (17).

Along with this rise in interest in spirituality has been the development of several scales in Western countries to assess spiritual well-being (Emmons and Paloutzian 2003; Linton, Dieppe, and Medina-Lara 2016). However, only a few measures have been developed for use in China. The seven-item spiritual subscale of the Chinese Positive Youth Development Scale (Shek, Siu, and Lee 2007) was modelled after Shek's Own Purpose in Life Questionnaire, the 15-item Chinese Spiritual Transcendence Scale (Lau et al. 2016) and the 16-item Chinese Daily Spiritual Experience Scale (Ng et al. 2009). Relative to these other measures developed in China, the 20-item Chinese translation of the Spiritual Health and Life-orientation Measure (SHALOM; Fisher and Wong 2013) is sufficiently comprehensive to encompass multiple aspects of spirituality, including the individual's sense of connectedness to oneself, others, the natural world and the basis of existence (Fisher 2011; Hay and Nye 2006). The current research evaluates the psychometric properties of the Chinese-translated version of the Spiritual Health and Life-orientation Measure (SHALOM) amongst Hong Kong university students.

Background

Since the turn of the century, the educational system of Hong Kong has undergone substantial changes. The old system (i.e. 3 + 2 + 2 + 3 system) has been changed to a new scheme (i.e. 3 + 3 + 4 Scheme) in order to respond to the global movement for economic and educational reforms and Hong Kong's return to China in 1997 (Education Commission 2000; Curriculum Development Council 2001). This new scheme focuses on the academic structure of Hong Kong's senior secondary and higher education, with three years of junior secondary school, three years of senior secondary school, and four years of university education. This scheme was launched in academic year 2009. The education reform moves away from the previously narrow-focused curriculum to provide a broad, balanced and diversified curriculum that will promote students' holistic development (Lai and Cheung 2013). One outcome of this holistic focus may be enhanced spiritual wellbeing of students.

Students educated prior to the implementation of education reform in Hong Kong belong to 'Generation Y', the world's first technology and global generation (Berkup 2014). Members of this generation have been characterized as adaptable to change, keen on studying, expecting that knowledge will make them powerful, enjoying competition and having the intention to work in a competitive environment (Berkup 2014). Meanwhile, students educated after education reform was implemented in Hong Kong belong to 'Generation Z'. Members of this generation are also called children of the Internet, the digital generation, digital natives, the media generation and instant online (Levickaite 2010). Berkup (2014) proposed that freedom, individualism and addiction to technology and speed are the most distinctive traits of Generation Z members. They are educated at an early age and obtain a developed and planned education. They are known for multitasking, efficient technology utilisation, individualism (as opposed to having a focus on teamwork), creativity, a global point of view and preference for non-standard and personalised work.

The SHALOM model of spirituality

Spirituality refers to the personal search for a goal, sense or point of life. Tanyi (2002) argued that spirituality does not have to be related to any religious belief. Accordingly, spirituality connects principles, philosophies and values that provide significance to everyday life and reflect individuals' ideal well-being. Fisher's (1998) original SHALOM model of spiritual wellbeing referred to the harmonious environments in which a person lives and the person's good relationships with oneself (personal), others (communal), nature (environment) and God (transcendent). Fisher and Coskun's (2013) conceptual model expanded the transcendent domain to refer not only to God, but also to any divine entity or deceased person with great power. The extensive coverage enables the acceptance of worldviews that range from belief in God to a lack of belief in God.

Fisher (2006) developed SHALOM, an English-language questionnaire to assess spiritual wellbeing. In particular, the SHALOM questionnaire measures individuals' sense of connectedness in four domains, namely personal, communal, environmental and transcendental (Gomez and Fisher 2003, 1977). The questionnaire comprises 20 items, with 5 items related to each domain. Research participants are asked to provide two responses for each item on the basis of their lived experiences and ideal values. For the ideal value subscale, the participants rate how important each item is for ideal spiritual health. For the lived experience subscale, they indicate the extent to which each item reflects their previous personal experiences.

The lived experience questions were previously labelled the Spiritual Well-being Questionnaire (SWBQ). The SWBQ has been extensively used to evaluate the spiritual health of teachers and students in Australia and the UK (Fisher 1999; Fisher, Francis, and Johnson 2002). It has also been translated into 29 languages and used in many studies globally with consistently high reliability (Fisher 2004, 2010, 2016; Fisher and Brumley 2008; Gomez and Fisher 2003, 2005a, 2005b). The SWBQ has been validated in reference to several well-established measures of personality and psychological health (e.g. Gomez and Fisher 2003, 2005a). In 2010 Fisher added the ideal values subscale and renamed the questionnaire SHALOM (Fisher 2010). The Chinese-translated SHALOM has been used in several studies (e.g. Jones 2019; etc.) but its reliability and validity still need to be thoroughly analysed.

SHALOM and traditional Chinese culture

Given its focus on the individual's sense of connectedness in the personal, communal, environmental and transcendental domains, SHALOM's underlying model of spiritual well-being provides a good prima facie rationale for its applicability to the Chinese population. Traditional Chinese culture considers individuals' connectedness from the perspectives of Confucianism, Taoism and Buddhism.

For the personal domain, traditional Chinese culture focuses on personal cultivation. The Confucian classic titled *The Great Learning* indicated that individuals who desired 'to cultivate their persons … first rectified their hearts. Wishing to rectify their hearts, they first sought to be sincere in their thoughts' (Legge 1971, 357–358). Additionally, traditional Chinese culture emphasises the humanistic spirit and people's values (Jin 1979), like self-acceptance and striving for excellence. Family values and harmonious

relationships with other people are also included in such traditions. Moreover, the Chinese society is substantially concerned with the concept of 'putting the interest of the whole above everything else'.

For the communal domain, recent studies on cross-cultural psychology have recommended that individuals from the Confucian tradition 'endorse interdependent self-construal which is characterised by the belief that the self cannot be separated from the social context' (Yik 2010, 210). Collectivistic orientations refer to the majority of values and thoughts in the traditional Chinese culture. Individualistic orientations are also increasingly considered (Lu 1998) in the personal domain. Individuals likewise closely connect with communities (Hofstede 1980).

Spirituality with regard to the environment is seen in the Confucian ideas that belief in 'a unity … also embraces Earth' and that there is a 'unity of heaven and humanity' (*tianrenheyi*), and these concepts are amongst the most important contributions of Chinese traditions to the global community (Tu 2001, 243). These traditions have likewise been highlighted by Taoism and Buddhism. The human–environment connection in the traditional Chinese culture focuses on the harmony of humans and nature. Meanwhile, the practice of spirituality in the environmental domain ensures that residential locations are conducive to the well-being of their inhabitants. This idea is different from the Western civilisation's idea of conquering nature. The concept of 'harmony of man and nature' suggests that the traditional Chinese culture already includes the concept of environmental conservation.

The traditional Chinese notion of transcendental spirituality holds that the key to achieving transcendence is the cultivation of the concept of 'heaven' that involves a personalised emperor. Christianity has also taken a foothold in China, and its idea of 'oneness with God' (i.e. transcendence) has certain similarities with China's traditional concept of 'unity of heaven and humanity' (*tianrenheyi*) (i.e. transcendence), However, the two concepts are also different. The Christian view of heaven is that it is the source of all moral codes and laws.

Studies on SHALOM in Hong Kong

Fisher and Wong (2013) first translated SHALOM into the Chinese language. Thereafter, the Chinese-translated SHALOM was used in several studies, using only the lived experience subscale. For example, SHALOM was used to analyse gender differences in life satisfaction and spiritual health amongst junior immigrants and local secondary students in Hong Kong (Yuen 2015) and to show the higher spiritual well-being with higher academic performance amongst university students (Pong 2017). Fisher and Wong (2013) also compared the spiritual well-being amongst pre-service teachers in Hong Kong and Australia. On the lived experience scale, scores on the transcendental and environmental domains were higher in the Chinese cohort than in their Western counterparts. Fisher and Wong (2013) concluded that variation in spirituality in part reflects cultural variation, although they also suggested that other reasons for this cross-cultural difference should be further investigated.

There are two gaps in this literature that are addressed in the current study. First, consistent with Fisher's (2006) conceptual model, translated versions of the lived experience subscale of the SHALOM questionnaire have been shown to have a reliable four-factor

structure (i.e. personal, communal, environmental and transcendental domains) in Hebrew (Elhai et al. 2018), Persian (Abhari et al. 2018) and Brazilian–Portuguese (Nunes et al. 2018; Valdivia, Alves, and Rocha 2018) populations. However, in samples of Hong Kong Chinese undergraduate students (Fisher and Wong 2013; Pong 2017) and Hong Kong Chinese adolescents (Yuen 2015), the lived experience subscale showed a three-factor structure (i.e. personal–communal, environmental and transcendental domains). None of these previous studies analysed SHALOM's ideal value subscale. Therefore, our first goal was to test whether a three-factor structure would be identified in SHALOM's lived experience subscale as well as ideal value subscale in a sample of Hong Kong university students.

The second gap to be addressed in the current study concerned the question of whether the SHALOM questionnaire can identify differences in the spiritual well-being of religious and non-religious respondants. Previous research reported differences amongst Brazilian atheist and religious youth in their domain scores on the lived experience and ideal value subscales (Valdivia, Alves, and Rocha 2018). However, such differences have not been investigated in the Chinese population. Therefore, our second goal was to assess whether there are differences between the religious and non-religious university students in Hong Kong.

Research questions

The current research addressed the following questions.

Question 1:

What is the factor structure of the lived experience and ideal value subscales of the Chinese translated SHALOM questionnaire in this sample of Hong Kong university students ?

Question 2:

Are there significant differences in SHALOM's Chinese version scores between the 2010 and 2018 samples of Hong Kong university students who were educated under the old vs. new educational systems, respectively?

Question 3:

Are there significant differences in the spiritual health of Hong Kong university students with and without religious beliefs?

Method

Participants

Participants in this study constituted two samples. The first sample was made up of the 546 Chinese university students (25% males, 75% females, aged 18–29) who participated in 2010 as part of Fisher and Wong's (2013) study. Students in the 2010 sample were enrolled in university before Hong Kong's education reform. The second sample was made up of 474 Chinese university students (43% males, 57% females, aged 17–25) who participated in 2018. Students in the 2018 sample were enrolled in university after

Hong Kong's education reform. The participants from the 2010 and 2018 samples were members of Generations Y and Z, respectively. Generation Y refers to young adults born between 1980 and 1994, whereas Generation Z refers to those born after 1994 (Berkup 2014; William Schroer 2008).

In 2010, most participants (64%) reported no religious beliefs, with the rest being Protestant Christians (32%), Catholics (3%) and Buddhists and others (2%). These values were similar in 2018, with most (59%) reporting no religious beliefs, and the rest being Protestant Christians (34%), Catholics (4%) and Buddhists and others (3%).

Measure

SHALOM is a 20-item questionnaire that analyses spiritual well-being in the personal, communal, environmental and transcendental domains (Fisher 2011). Participants rate each item twice, example 'once in relation to its presence in their daily life (lived experience)' and example 'once in relation to its importance in their view of spirituality (ideal values)'. The two types of ratings constitute the measure's two subscales (20 items each). Items are rated using a five-point Likert scale, ranging from 1 (very low) to 5 (very high). Domain scores are calculated as the mean of items on that domain. The subscales showed high internal consistency. Cronbach's alphas for the ideal values subscale were 0.91 and 0.90 in 2010 and 2018, respectively. Cronbach's alphas for the lived experience subscale were 0.90 and 0.90 in 2010 and 2018, respectively.

Procedures

Approval was obtained from the Research Ethics Committee before the current study was conducted. The SHALOM questionnaire was initially translated into the Chinese language by other researchers, using the back-translation method with two translators (Cheng and Hamid 1995; Mason 2005). The first translator was responsible for the forward (i.e. English–Chinese) translation, whereas the second translator conducted the back translation (Chinese-English). The second translator had no access to the original measure before the time of translation. Thereafter, the two translators collaborated to compare the back translation with the original items. The comparison allowed identification of discrepancies so that modifications could be made to the translated version. The translated measure was sent to two bilingual investigators (fluent in English and Chinese) for term checking and approval. Meanwhile, a group of 4 Chinese-speaking psychology and education professionals compared the back-translated version with the original version by item. They likewise reviewed the Chinese translation in detail. Lastly, the back-translated version was further studied and approved by the questionnaire's original developer.

Several university students participated in a pilot trial of the first draft of the Chinese questionnaire (Cheng and Hamid 1995; Mason 2005). These students shared their feedback on the sentence structure through focus group discussions. Thereafter, the questionnaire was further refined.

The Chinese-language SHALOM (Cheng and Hamid 1995; Mason 2005) was eventually administered to 546 and 474 university students in 2010 and 2018, respectively. The purpose of the study was explained to all the potential participants. Participation was voluntary and no compensation was offered. The participants could withdraw at any time without penalty or

prejudice. All information and data obtained were kept confidential. The participants were provided with a consent form to sign and the bilingual Chinese-English language SHALOM to complete. Lastly, the participants provided a range of demographic information, including gender, age, religious affiliation and educational background.

Results

Principal component analysis (PCA)

Principal component analysis (PCA) was used as a further test of reliability (in addition to the Cronbach alpha values reported earlier) and as a test of validity. SPSS Version 22 was adopted for data analysis.

The Kaiser–Meyer–Okin (KMO) values for the lived experience subscale were .908 and .913 in 2010 and 2018, respectively, and the values for the ideal value subscale were .915 and .907 in 2010 and 2018, respectively. All values exceeded the recommended minimum value of .600 (Kaiser 1974), indicating that the data were appropriate for further examination to identify the factor structure.

Bartlett's test of sphericity (Bartlett 1954) for the lived experience subscale reached statistical significance at (χ^2 (190, N = 546) = 6719.757, p < .001) and (χ^2 (190, N = 474) = 5405.816, p < .001) in 2010 and 2018, respectively. Bartlett's test of sphericity also reached statistical significance for the ideal value subscale at (χ^2 (190, N = 546) = 7054.525, p < .001) and (χ^2 (190, N = 474) = 4922.031, p < .001) in 2010 and 2018, respectively. The results for both subscales supported the factorability of the correlation matrix in both 2010 and 2018. Like the KMO values, the Bartlett's test of sphericity indicated that the data were appropriate for further examination to identify the factor structure.

As expected based on the SHALOM model, PCA of the ideal values subscale found four components with eigenvalues that exceeded 1.0, thereby explaining 67.5% and 63.4% of the variance in 2010 and 2018, respectively. The four components were (1) personal domain, (2) communal domain, (3) environmental domain, and (4) transcendental domain. However, the lived experience subscale had three (instead of four) components with eigenvalues that exceeded 1.0, and these components explained 61.3% and 60.8% of the variance in 2010 and 2018, respectively (see Table 1). The three components for the lived experience subscale were: (1) combined personal and communal domains, (2) environmental domain and (3) transcendental domain.

Statistical plan for factor analyses

All factor analyses were performed using *R* (Ihaka and Gentleman 1996) with the lavaan package (Rosseel 2012). The current study used the maximum likelihood estimation method to handle missing data. Identifying the underlying factor structure involved four steps. First, exploratory factor analysis (EFA) was performed using the oblimin rotation on approximately half of the sample from 2010 (n = 257). Second, a parallel analysis was conducted on the same subsample to provide further evidence of the number of factors that might be present. Third, the results of the EFA analyses were further tested using confirmatory factor analysis (CFA) in the remaining subsample from 2010 (n = 289) and

Table 1. Summary statistics for each item and reliability coefficients (Cronbach's alpha) for each domain of the lived experience subscale of the SHALOM scale, from two samples (2010 and 2018).

Item: Spiritual Well-Being(How You Feel)	Factor Loading		Value	*M*	*(SD)*	Variance (%)	Factor Loading		Value	*M*	*(SD)*	Variance(%)
Factor 1:	Q 1	.64	6.93	3.98	(.68)	34.659	Q 1	.62	7.00	3.99	(.65)	34.98
Personal andCommunal	Q 3	.65		3.94	(.76)		Q 3	.64		3.97	(.74)	
	Q 5	.54		3.90	(.74)		Q 5	.58		3.92	(.72)	
	Q 8	.74		4.15	(.77)		Q 8	.70		4.16	(.76)	
	Q 9	.62		3.92	(.76)		Q 9	.62		3.95	(.75)	
	Q 14	.66		4.04	(.80)		Q 14	.64		4.05	(.78)	
	Q 16	.72		3.95	(.83)		Q 16	.73		3.94	(.83)	
	Q 17	.77		4.25	(.68)		Q 17	.77		4.25	(.67)	
	Q 18	.73		4.19	(.77)		Q 18	.75		4.22	(.76)	
	Q 19	.75		4.22	(.69)		Q 19	.74		4.25	(.68)	
Factor 2:	Q 2	.89	3.44	2.95	(1.17)	17.20	Q 2	.87	3.35	3.05	(1.13)	16.72
Environmental	Q 6	.87		3.16	(1.18)		Q 6	.86		3.25	(1.16)	
	Q 11	.90		2.83	(1.15)		Q 11	.90		2.90	(1.12)	
	Q 13	.92		2.96	(1.20)		Q 13	.92		3.05	(1.18)	
	Q 15	.89		2.94	(1.25)		Q 15	.90		3.01	(1.22)	
Factor 3:	Q 4	.79	1.88	3.52	(.89)	9.413	Q 4	.77	1.83	3.53	(.88)	9.15
Transcendental	Q 7	.58		3.35	(.94)		Q 7	.61		3.37	(.94)	
	Q 10	.85		3.50	(.91)		Q 10	.84		3.52	(.89)	
	Q 12	.65		3.59	(.83)		Q 12	.65		3.62	(.82)	
	Q 20	.70		3.53	(.88)		Q 20	.71		3.56	(.87)	

In 2010, the Personal and Communal, Environmental, and Transcendental factors had Cronbach alpha values of .89, .81, and .95, respectively. In 2018 the corresponding values were .89, .82, and .95.

in the sample from 2018 (n = 474). Fourth, tests of factorial invariance in the complete set of data (N = 1074) were used to determine if the same factor structure was apparent in 2010 and 2018, in males and females, and in religious and non-religious students.

The use of cut-off values is a common practice in assessing a model's goodness-of-fit in factor analysis based on structural equation modelling. A model provides an acceptable fit to the data if the comparative fit index (CFI) and Tucker–Lewis index (TLI) are both above 0.9 (Kline 2011). Nevertheless, we treated the goodness-of-fit model as a matter of degree. Brown and Cudeck (1993) argued that a root mean square error of approximation (RMSEA) below or equal to 0.05 suggests that a model fits the data well, and an RMSEA between 0.05 and 0.08 can reasonably approximate the data. A standardised root mean square residual (SRMR) below 0.08 indicates a reasonable fit (Bentler 1995).

Exploratory factor analysis (EFA)

EFA and parallel analysis were performed for the ideal values and lived experience scales in approximately one half of the 2010 sample (n = 257). Four- and three-factor EFAs with oblimin rotation were used to explore the underlying factors. Table 2 display the fit indices of the four- and three-factor models for the ideal values and lived experience subscales, respectively. For both subscales, the four- and three-factor models had acceptable fit indices and explained a similar amount of variance. In the four-factor model, the ideal value subscale accounted for 52.7% of the variance and the lived experience subscale accounted for 52.4%. In the three-factor model, the ideal value subscale accounted for 54.4% of the variance and the lived experience subscale accounted for 55.2% (see Tables 3 and 4).

Tables 3 and 4 also show the factor loadings for the four-factor and three-factor models, respectively. Although the four-factor and three-factor models had shown acceptable fit indices for both SHALOM subscales, certain items in the personal domain and communal domain lacked strong loadings on their designated factors. In the ideal value subscale, item 14 (joy in life) had a similar loading on the communal domain and personal domains. Items 16 (inner peace) and 18 (meaning in life) had high factor loadings in the communal domain rather than the personal domain, whereas items 1 (love for other people), 3 (forgiveness towards others) and 8 (trust amongst individuals) had higher factor loadings on the communal domain than the personal domain. In the lived experience subscale, item 18 (meaning in life) had a high factor loading in the communal domain, whereas items 1 (love for other people) and 8 (trust amongst individuals) had high factor loadings in the personal domain. Therefore, because the

Table 2. Fit indices based on Exploratory Factor Analysis (EFA) of the SHALOM scale.

Model	χ^2	*df*	RMSEA	90% CI	BIC	TLI	SRMR
Four-factor EFA of 20 items							
Ideal value	214.36***	116	.06	.05, .07	−429.33	.95	.04
Lived experience	256.73***	116	.07	.06, .08	−386.97	.93	.04
Three-factor EFA of 20 items							
Ideal value	291.28***	133	.07	.06, .08	−446.74	.93	.04
Lived experience	346.03***	133	.08	.07, .09	−391.99	.90	.05

N = 257. *** $p < .001$

Table 3. Four-Factor Exploratory Factor Analysis (EFA) of two subscales of the SHALOM scale.

	Values				Experience			
Item	T	E	C	P	T	E	C	P
Q5: Sense of identity		.25		**.41**		.24		**.49**
Q9: Self-awareness		.27	.21	**.33**		.23	.27	**.37**
Q14: Joy in life	.36		.30	**.31**	.29	.16	.22	**.39**
Q16: Inner peace	.17	.15	.39	**.24**	.13		.30	**.46**
Q18: Meaning in life	.11		.69	**.18**		.14	.42	**.30**
Q1: Love for other people		.15	**.12**	.48			**.25**	.48
Q3: Forgiveness towards others			**.25**	.54	.13		**.37**	.29
Q8: Trust amongst individuals			**.31**	.45		.11	**.23**	.54
Q17: Respect for others			**.88**				**.81**	
Q19: Kindness towards other people			**.86**				**.88**	
Q4: Connection with nature		**.76**		.19		**.73**		
Q7: Appreciation of the breath-taking view	.33	**.47**			.30	**.51**		−.20
Q10: Oneness with nature		**.86**				**.92**		
Q12: Harmony with the environment		**.64**				**.61**	.16	
Q20: Sense of 'magic' in the environment		**.64**	.24	−.10		**.60**	.26	−.10
Q2: Personal relationship with the Divine/Transcendent	**.84**			.20	**.90**		−.10	.14
Q6: Worship of the Creator/Transcendent	**.79**				**.82**			−.10
Q11: Oneness with God/Transcendent	**.90**				**.91**			
Q13: Peace with God/Transcendent	**.97**				**.94**			
Q15: Prayer in life	**.92**				**.87**			
Explanation of variance for each factor (%)	21.0	12.8	12.6	6.3	20.8	12.8	11.0	7.8
Cumulative variance (%)	21.0	33.8	46.4	52.7	20.8	33.6	44.6	52.4

N = 257. Factor names are abbreviated as T = Transcendental, E = Environmental, C = Communal, P = Personal. Items that loaded on each factor are in boldface.

Table 4. Three-Factor Exploratory Factor Analysis (EFA) of two subscales of the SHALOM scale.

	Values			Experience		
Item	T	PC	E	T	PC	E
Q5: Sense of identity		**.35**	.28		**.43**	.21
Q9: Self-awareness		**.45**	.28		**.58**	.19
Q14: Joy in life	.33	**.53**		.26	**.55**	.12
Q16: Inner peace	.14	**.57**			**.68**	
Q18: Meaning in life		**.84**			**.67**	
Q1: Love for other people		**.46**			**.64**	
Q3: Forgiveness towards others		**.63**		.10	**.62**	
Q8: Trust amongst individuals		**.63**			**.68**	
Q17: Respect for others		**.85**			**.84**	
Q19: Kindness towards other people		**.85**			**.85**	
Q4: Connection with nature			**.78**			**.73**
Q7: Appreciation of the breath-taking view	.34		**.46**	.29		**.50**
Q10: Oneness with nature			**.86**			**.93**
Q12: Harmony with the environment		.11	**.63**		.20	**.59**
Q20: Sense of 'magic' in the environment		.15	**.60**		.15	**.57**
Q2: Personal relationship with the Divine	**.82**			**.90**		
Q6: Worship of the Creator	**.79**			**.82**		
Q11: Oneness with God	**.90**			**.91**		
Q13: Peace with God	**.97**			**.94**		
Q15: Prayer in life	**.92**			**.87**		
Explanation of variance for each factor (%)	20.8	20.7	12.9	20.6	22.4	12.2
Cumulative variance (%)	20.8	41.5	54.4	20.6	42.9	55.2

N = 257. Factor names are abbreviated as T = Transcendental, E = Environmental, C = Communal, P = Personal. Items that loaded on each factor are in boldface.

three-factor model, with the personal and communal factors combined into a single factor, also had an acceptable fit to the data, it was chosen as a more parsimonious and more meaningful model than the four-factor model for both SHALOM subscales.

Confirmatory factor analysis (CFA)

To verify the three-factor model identified using EFA, a CFA with full information maximum likelihood estimation was conducted in the remaining 289 participants from 2010. Note that the fit indices using the full sample of 546 participants were acceptable for the ideal value scale [$\chi^2(167) = 501.304$, $p < .001$; 90% CI (0.074, 0.090), CFI = 0.916, TLI = 0.904, RMSEA = 0.082, SRMR = 0.072] and for the lived experience scale [$\chi^2(167) = 491.317$, $p < .001$; 90% CI (0.073, 0.089), CFI = 0.912, TLI = 0.900, RMSEA = 0.081, SRMR = 0.070].

CFA of the three-factor model with the 474 participants from 2018 were also statistically fitted. The model indexes were acceptable, with CFI = 0.927, TLI = 0.912, RMR < 0.05 and RMSEA < 0.08.

Table 5 presents the summary statistics for each item, including the internal consistency for each SHALOM domain in the ideal values and lived experience subscales. The Cronbach's alpha of the three domains ranged from 0.62 to 0.73 and from 0.65 to 0.76 for the ideal value and lived experience subscales, respectively. Across domains, Cronbach's alphas were 0.62 and 0.76 for the ideal value and lived experience subscales, respectively.

Factorial invariance tests: year and gender

The CFI results were compared across year (2010, 2018) and then across gender (males, females) to test the invariance of the factor structure, see Table 6. In each case, a baseline model was compared with a constrained model with all factor loadings constrained to be equal across the two groups. The CFI value for the difference between the male group and female group was 0.92 − 0.93 = 0.01, thereby indicating multigroup invariance. The goodness-of-fit index (χ^2) did not increase significantly ($\Delta\chi^2 = 17.27$, $\Delta df = 6$, $p > .05$), thereby suggesting that the items used to measure the SHALOM domains (personal–communal, environmental and transcendental) were statistically equivalent for the males and females in the Hong Kong sample.

Comparison of religious and non-religious students

Table 7 shows the means and standard deviations (SD) of the two SHALOM subscales amongst the religious and non-religious participants. These data were provided by one subset of the 2010 sample. The ANOVA tests indicated that in the personal–communal domain, the two groups of participants did not differ on the ideal value [$F(1,289) = 1.84$, $p = .18$] or lived experience [$F(1,289) = 0.81$, $p = .37$] subscales. In the environmental domain, the two groups did not differ on the ideal value subscale [$F(1,289) = 1.91$, $p = .17$], whereas the religious group had a marginally higher score than the non-religious group on the lived experience subscale [$F(1,289) = 3.15$, $p = .08$]. In the transcendental domain, the religious group scored higher than the non-religious group on both the ideal value [$F(1,289) = 134.00$, $p < .001$] and lived experience [$F(1,289) = 213.0$, $p < .001$] subscales.

Table 5. Summary statistics for each item and reliability coefficients (Cronbach's alpha) for each domain of the two subscales of the SHALOM scale.

	Ideal Value	Lived Experience
Domain Item	Mean ± SD	Mean ± SD
Personal-communal	4.35 ± 4.69	4.04 ± 5.43
Q5: Sense of identity	4.15 ± 0.70	3.91 ± 0.74
Q9: Self-awareness	4.20 ± 0.67	3.87 ± 0.77
Q14: Joy in life	4.39 ± 0.66	4.06 ± 0.79
Q16: Inner peace	4.40 ± 0.67	3.88 ± 0.87
Q18: Meaning in life	4.49 ± 0.63	4.19 ± 0.78
Q1: Love for other people	4.23 ± 0.64	3.95 ± 0.69
Q3: Forgiveness towards others	4.33 ± 0.66	3.92 ± 0.72
Q8: Trust amongst individuals	4.43 ± 0.67	4.13 ± 0.78
Q17: Respect for others	4.46 ± 0.63	4.25 ± 0.68
Q19: Kindness towards other people	4.45 ± 0.62	4.20 ± 0.70
Transcendental	17.00 ± 5.28	14.70 ± 5.35
Q2: Personal relationship with the Divine	3.42 ± 1.14	2.92 ± 1.17
Q6: Worship of the Creator	3.54 ± 1.13	3.13 ± 1.15
Q11: Oneness with God	3.28 ± 1.12	2.81 ± 1.11
Q13: Peace with God	3.37 ± 1.14	2.94 ± 1.19
Q15: Prayer in life	3.38 ± 1.20	2.92 ± 1.22
Environmental	18.90 ± 3.33	17.30 ± 3.45
Q4: Connection with nature	3.85 ± 0.87	3.49 ± 0.89
Q7: Appreciation of the breath-taking view	3.51 ± 0.92	3.28 ± 0.94
Q10: Oneness with nature	3.81 ± 0.86	3.51 ± 0.90
Q12: Harmony with the environment	3.93 ± 0.75	3.56 ± 0.82
Q20: Sense of 'magic' in the environment	3.80 ± 0.82	3.49 ± 0.90
Total	79.40 ± 10.30	72.40 ± 10.70
Cronbach's alpha	0.62	0.76

$N = 289$.

Table 6. Summary of significant differences among students' health (SHALOM Lived Experience Subscale) in all specific domains in 2010 and 2018.

Domain	Year	*N*	*M*	(*SD*)	*SE*	*F*	*p*	*t*	*df*	*p* (2-tailed)
Personal & Communal	2010	568	4.05	(0.53)	.022	.119	.730	−.513	1040	.608
	2018	474	4.07	(0.52)	.024			−.514	1014	.607
Environmental	2010	568	3.50	(0.67)	.028	.003	.953	−.524	1040	.601
	2018	474	3.52	(0.67)	.031			−.524	1008	.601
Transcendental	2010	568	2.97	(1.09)	.046	.577	.448	−.269	1040	.205
	2018	474	3.05	(1.06)	.049			−.272	1016	.204
Overall	2010	568	3.64	(0.53)	.022	.107	.744	−.069	1040	.285
	2018	474	3.68	(0.52)	.024			−.070	1011	.285

Table 7. Comparisons of the SHALOM domain mean values across religious and non-religious groups.

	Religious	Non-Religious		
SHALOM Scale	*M* ± *SD*	*M* ± *SD*	*F* (1, 289)	*p*
Personal-communal				
Ideal value	44.1 ± 4.2	43.3 ± 4.9	1.840	.180
Lived experience	40.7 ± 5.5	40.1 ± 5.4	0.810	.370
Environmental				
Ideal value	19.3 ± 3.3	18.7 ± 3.4	1.910	.170
Lived experience	17.8 ± 3.6	17.1 ± 3.4	3.150	.077
Transcendental				
Ideal value	21.2 ± 3.3	14.9 ± 4.8	134.00	< .001
Lived experience	19.7 ± 3.4	12.3 ± 4.4	213.00	< .001

Discussion

Researchers in China have made use of several measures of spirituality, but the psychometric properties of these measures have not been reported. Therefore, the current study developed and validated a previously developed Chinese-language version of the multidimensional SHALOM questionnaire (Fisher 2010). This measure was designed to assess the participant's ideal spirituality and lived experience of spirituality in four domains: personal, communal, environmental and transcendental. However, in this sample of university students in Hong Kong, a three-factor structure appeared to better reflect spirituality. These factors corresponded to the three domains of (1) personal-communal (combined), (2) environmental and (3) transcendent spirituality. The factor scores also indicated good internal consistency. The results provide evidence that the SHALOM questionnaire is suitable for Chinese samples. They also provide important descriptive information on university students' spiritual well-being in the context of traditional Chinese culture. The results of this study can be used as a reference point in future research on spirituality.

High-order common domains

A high correlation was observed between the lived experience scores on the SHALOM personal and communal domains. These scores could be subsumed under a high-order common domain, and indeed the two domains were combined as one domain in our sample of Hong Kong university students. This result is consistent with the interdependent self-construal of East Asians (Nisbett 2003). The relationship between the personal and communal domains is similar to the strong relation between '我 Wo' (I) and '人 Ren' (humanity) in Chinese culture. The Confucian tradition focuses on personal cultivation to achieve social harmony (see *The Great Learning*; Legge 1971, 357–358). These concepts were reflected in such personal domain items as B5 'consciousness of self-identity', B9 'self-awareness' and B16 'inner peace'; and in such communal domain items as B1 'love for others', B17 'respect for others' and B19 'kindness to others'. The high correlation between the personal and communal domains was consistent with the Chinese perspective on the inter-relatedness of personal cultivation and social harmony.

The environmental and transcendental domains in our study could be subsumed under another high-order common domain, hereafter labelled as the connection between heaven '天 Tien' and humanity '人 Ren'. These domains could be mapped onto the traditional Chinese emphases on heaven and humanity, as alluded to by the quotation from Tu (2001) 'unity of heaven and humanity'. The traditional Chinese principles of harmony and unity require residential locations that are conducive to their inhabitants' well-being. The Chinese also believe that focusing on the human–environment connection could increase people's longevity (Ma 1992). This connection can also be reflected in items B10 'communion with nature', B12 'in harmony with the environment' and B20 'sense of wonder towards the environment' in the environmental domain. In the Chinese perspective, such terms as 'holiness', 'Creator' and 'God' are regarded as examples of supernatural powers. Therefore, items B2 'personal link to holiness', B6 'adoration of the creator' and B13 'peace with God' were considered examples of the connection between heaven '天 Tien' and humanity '人 Ren'.

Dissonances between the SHALOM ideal value and lived experience subscales

SHALOM is effective as a measure of spiritual well-being because it allows a comparison of respondents' views of the ideal state of being and their daily reports of experiencing various aspects of the ideal state. Given the possible domain scores that range from *1* to *5*, the average difference between the ideal and actual SHALOM scores ranged from 0.24 to 0.40 across the four domains (with ideal scores typically being higher than the actual scores). This degree of discrepancy is below the range of 0.6 to 0.8 reported by Fisher (2006). A difference above 1.0 is considered a critical value that would suggest further investigation of dissonance between ideal and lived spirituality (Fisher, 2006). The lack of difference in our sample may indicate that the Chinese participants are satisfied with their life orientation and spiritual health because they have reasonable expectations. Although the differences among average domain scores do not appear to approach this critical value, individual respondents may show high dissonance that can warrant attention. Accordingly, further investigation is necessary to determine whether the dissonance across various domains of spiritual health is associated with psychological distress and stress-related diseases.

Escaping the self and responsibility

Items A9 'self-awareness' and A19 'kindness to others' were excluded from the SHALOM ideal scale on the basis of the criterion modification index being above 4.0. These index scores suggest that the respondents did not view 'self-awareness' and 'kindness to others' as integral components of spiritual health. We assumed that the respondents perceived self-awareness as negative . Self-awareness theory (Carver 2003; Duval and Silvia 2002; Duval and Wicklund 1972) indicates that when we focus on ourselves, we evaluate and compare our current behaviour to our internal standards and values. Thus, we become self-conscious and judgmental observers of ourselves. We also posit that our participants did not want to set a high internal standard, which can make them feel psychologically uncomfortable when the standard is unmet. The idea that 'kindness to others' can be an essential component of spiritual health may also be a troublesome belief. The Confucius hold that people should have 'self-cultivation' first before 'kindness to others' to practice noble behaviour.

Differences in SHALOM between religious and non-religious groups

For the ideal value and lived experience sections, no significant difference was determined in the SHALOM personal and communal domains between the religious and non-religious groups. This finding is consistent with Fu's (2011) results. The current study showed no statistically significant difference between spirituality in the personal domain and religious beliefs of university students. However, Astin, Astin, and Lindholm (2010) and Cavendish et al. (2004) found that youth with religious beliefs had a higher level of spirituality in the personal domain than those without such beliefs.

Our findings for the communal domain were consistent with those of Roof (1993). Additionally, there was no statistically significant difference between religious and non-religious students on the communal domain of spirituality.

There were inconsistent findings with regard to whether the religious and non-religious students differed in the environmental domain of spirituality. The two groups

were similar in terms of ideal values. However, the religious group had a marginally higher score than the non-religious group in terms of their lived experience. Inconsistencies are also seen in the literature. Several empirical studies have determined a positive correlation between religion and harmony with the natural environment (Hagevi 2014; Ontakharai, Koul, and Neanchaleay 2008). However, another study found a negative relationship between religious association and environmental awareness (Guth et al. 1993; White 1967). Other studies have asserted a lack of relationship between religious association and environmental protection and care (Hayes and Marangudakis 2000; Greeley 1993; Boyd 1999).

In contrast to the other domains of spirituality, there was a clear difference between the religious and non-religious students in the transcendental domain. Scores on transcendental spirituality were significantly higher in the religious group than in the non-religious group in both ideal value and lived experience. This finding is consistent with the results of other studies (Anye et al. 2013; Bryant and Astin 2008; Pong 2018), which showed that people with religious beliefs have stronger spirituality than those who lack such beliefs. Nevertheless, a positive and statistically significant relationship between students' high level of spirituality with religious beliefs was determined by Astin, Astin, and Lindholm (2010).

Future directions for consideration

Sample size

One goal of this study was to examine differences between the religious and non-religious participants in terms of spiritual health. Our results indicated a substantial difference only in the transcendental domain, and not in the personal-communal and environmental domains. However, these analyses were based on a relatively small subset of data available from the 2010 sample, and the results may therefore not be reliable. A larger sample would allow multi-level modelling to investigate differences on the basis of religion in the same analysis.

Generalisation of findings

Members of the education sector, such as principals, high school and university students, teachers, nurses and school administrators participated in earlier studies using the SHALOM questionnaire (Fisher 2006). The participants in our study were Chinese university students who were educated pre and post education reform in Hong Kong, with the names Generation Y and Generation Z. This diversity in samples across studies lends validity to the measure. At the same time, the SHALOM should also be validated in samples from a range of socio-economic backgrounds in Hong Kong and in other cultural contexts.

Design

The current results were based on two sets of cross-sectional data collected from different samples of university students in different years. Longitudinal research on changes in spiritual health over time can serve as a reference for reflection, especially in relation to changes in lived experiences in the young adult years. Other self-report measures, such as an assessment of social desirability (e.g. the Marlowe-Crowne Social Desirability Scale), could be used to test concurrent validity, providing new avenues of research on spiritual health.

Conclusion

Western studies have been using questionnaires to measure people's spirituality for many years. However, only a few multidimensional instruments of religiousness and spirituality (R/S), such as SHALOM (Fisher, 2006) have been employed to study the Chinese population. The current study employed SHALOM to assess the spiritual well-being of the Chinese population in different cohorts in 2010 and 2018. Our results showed that the original measure is applicable to the population of Hong Kong university students, with one important modification. Specifically, the personal and communal domains from the original model created one factor in the Chinese version (with the environmental and transcendental domains remaining the same)These results may reflect the cultural context in which the Chinese version of this measure was developed. In sum, in this study the Chinese version of the SHALOM questionnaire was validated as a measure of spiritual health amongst Hong Kong university students aged 17–30, even for students born a generation apart. This measure thus lays the foundation for further investigation of Chinese perspectives on spiritual health.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Chi Hung Leung is Associate Professor in the Department of Special Education & Counselling at the Education University of Hong Kong. He has taught various psychology subjects for nearly 14 years. His research focuses are (a) Play and social competence, (b) Chinese parenting practices, (c) Learning effectiveness among University students, and (d) Assessing moral development of preschool children.

Email: chhleung@eduhk.hk

Hok-Ko Pong is a teaching fellow at Faculty of Management and Hospitality, Technological and Higher Education Institute of Hong Kong, Hong Kong, China. He has taught various subjects in higher education for nearly 14 years. His research interests include life and value education, business education, spirituality and holistic education.

Email: hkpong@vtc.edu.hk

Ching-Leung Lung is Adjunct Assistant Professor in the Department of Special Education & Counselling at the Education University of Hong Kong. He has taught various School Guidance and counselling subjects. His research focuses are (a) Guidance and Counselling, (b) Teaching and learning, (c) Social and Personal Education, and (d) Teacher Education.

Email: cllung@eduhk.hk

ORCID

Chi Hung Leung http://orcid.org/0000-0002-7469-5672

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