

Article

# Presenting a 4-Item Spiritual Well-Being Index (4-ISWBI)

John Fisher <sup>1,\*</sup> and David Ng <sup>2</sup>

<sup>1</sup> Faculty of Education and Arts, Federation University Australia, Ballarat, VIC 3350, Australia

<sup>2</sup> Department of International Education & Lifelong learning, Education University of Hong Kong, Tai Po 4600-652, Hong Kong, China; s0948943@s.eduhk.hk

\* Correspondence: j.fisher@federation.edu.au

Received: 11 July 2017; Accepted: 29 August 2017; Published: 4 September 2017

**Abstract:** Spiritual well-being is perceived to be reflected in the quality of relationships that people have in four areas, namely with God, others, nature, and self. Many spiritual well-being questionnaires exist, but not many provide an adequate assessment of these four relationships. As part of a survey of parental perceptions of holistic early childhood education in kindergartens in Hong Kong, 1383 parents and 165 teachers, from 22 kindergartens, completed a written survey questionnaire which helped to investigate the potential for a single question with four parts to provide a valid and reliable measure for spiritual well-being. Face, content, and construct validity were confirmed, together with Cronbach's alpha providing a test for reliability. Similarity of findings from regression analysis of items in the 4-ISWBI with domains of spiritual well-being in the 20-item SHALOM, as well as partial discrimination by gender, reinforce the validity of the 4-ISWBI as a sound indicator of spiritual well-being and its four domains. In brief, the 4-Item Spiritual Well-Being Index (4-ISWBI) promises to be a handy instrument to aid researchers looking for a convenient, concise, coherent indicator, but not an exhaustive measure, of spiritual well-being.

**Keywords:** assess; spiritual well-being; SHALOM

---

## 1. Introduction

### 1.1. Holistic/Spiritual Well-Being and Education

Most papers addressing spirituality mention the difficulty that people have in trying to find an agreed definition of the concept. A diversity of views is expressed, based on each author's worldview (Moberg 2002). Descriptions of spirituality range from an absolutist position, that only a relationship with God indicates spirituality, through one in which religion is considered the overarching concept that embraces spirituality as a subset, to religion and spirituality being considered as synonymous, then to similarities and differences being delineated between spirituality and religion, through to spirituality without religion (so-called secular spirituality), to another absolutist position, called Nihilism, that denies existence of spirituality and certainly does not accept the notion of God (Fisher 1998; Streib and Hood 2016; Zinnbauer et al. 1999). Moberg (2011) lists eighteen different types of spirituality, and Koenig et al. (2001, 2012) add even more. On top of this uncertainty, controversy also surrounds the relationship between spirituality and well-being, with some authors claiming that spirituality is usurping or duplicating areas more appropriately related to psychology or sociology (Garssen et al. 2016; Koenig 2008; MacDonald et al. 2015). The influence of spirit on health has been a point of discussion from around 400BC, in Hippocrates' time (Adams 1939), as well as in Chinese medicine. In a similar manner, psychology, as a study of mind and behavior, also dates back to Ancient Greece, but psychology, as a scientific discipline, only came to the fore in the 1870s. It seems, therefore, that close relationships between spiritual and mental aspects of health have been discussed for some

time and are likely to be so for more time to come. In order to circumvent these uncertainties and the current controversy, this study focused on the holistic entity known as spiritual well-being.

Arising from contemporary work on positive psychology, it appears that the term ‘spiritual well-being’ (SWB) was first mentioned at the 1971 White House Conference on Aging in the USA (Moberg 2010). Following on from this conference, the National Interfaith Coalition on Aging released a “working definition”, which claims, ‘spiritual well-being is the affirmation of life in relationship with God, self, community and environment that nurtures and celebrates wholeness’ (National Interfaith Coalition on Aging NICA). From an empirical investigation with 98 teachers in 22 schools in Victoria, Australia, it was concluded that spiritual health is ‘a, if not the, fundamental dimension of people’s overall health and well-being, permeating and integrating all the other dimensions of health (i.e., physical, mental, emotional, social and vocational). Spiritual health is a dynamic state of being, shown by the extent to which people live in harmony within relationships in up to four domains of spiritual well-being’ (Fisher 1998), namely, with themselves, in the Personal domain, with other people, in the Communal domain, with nature, in the Environmental domain, and/or with something or some-One beyond the human and natural world, in the Transcendental domain. Even though the term ‘spiritual well-being’ only arose as a concept just over forty years ago, many later descriptions of spiritual health and well-being have contained references to spiritual-psycho-social-biophysical aspects of health, thus reflecting the four areas of the relationship of holistic well-being (i.e., health) mentioned above. For example, Waaijman attests, ‘Spirituality unfolds itself as the unity of the divine-human, interhuman, human-cosmic, and intrahuman relationships’ (Waaijman 2007). These four sets of relationships have also been posited as key elements in holistic education, by Lin (1998), who categorized holistic education into four main sets of relationships, namely, relations with Heaven (天), with others—the Humanity (人), with environment—the entire creation (物), and with the individual self (我). This description added Heaven to the God-factor for consideration by the Chinese people involved in this study.

### 1.2. Assessing Spiritual Well-Being

There is no universally-accepted “gold standard” for assessing spiritual health or well-being. Relevant literature contains reports of many attempts that have been made at assessing spirituality and spiritual health/well-being (e.g., Egbert et al. 2004; Hill and Pargament 2003; King and Crowther 2004; Koening et al. 2001, 2012; MacDonald and Friedman 2002; Moberg 2002). However, there is a clear lack of a theoretical perspective upon which many of these studies have been based (Berry 2005). A number of the studies also confuse spirituality and religion, which, although related, are not synonymous (Zinnbauer et al. 1999). Moberg (2002) added a concern about what should be considered as the normative base when assessing spiritual well-being among diverse populations. At best, the ‘scores’ obtained on spiritual well-being measures are arbitrary indicators of spiritual health or well-being (Boero et al. 2005), that should be used as a basis for further study with the population investigated and not compared across groups unless they have clearly evident similar world-views and beliefs (Hill et al. 2000).

A concerted literature search of documents, using the key words ‘spiritual\*’ with ‘health’ OR ‘well-being’, together WITH ‘assess’ OR ‘instrument’ OR ‘measure’ OR ‘questionnaire’ OR ‘scale’ OR ‘survey’ yielded nearly 300 quantitative measures of spirituality and/or spiritual health or well-being published between 1967 and 2014 (Fisher 2015). These instruments range in complexity from single-items to measures containing up to 156 items. Use of single-item measures attempts to be justified by researchers who claim, ‘simply cueing the respondent into this area of their life and the aspect that is most salient to them within this area will form the basis of their response’ (Wills 2009). This argument has some merit, because all surveys rely on respondents making sense of concepts being investigated via a questionnaire. However, validity is questionable and reliability cannot be assessed on a single item.

Existing measures with two to four items would be hard-pressed to provide a comprehensive cover of multidimensional spiritual well-being. None of the seven 2–4 item measures of SWB, collated by Fisher (2015), consider more than two of the four domains of spiritual health and well-being. From that report, a summary of the construct of 39 multi-dimensional spiritual health & well-being measures (SH/WB) and 137 spirituality (Sp) measures follows. The percentage of measures in each category which contains more than three items in each of the four factors is: relating with self (SH/WB 97%, Sp 80%); relating with others (SH/WB 64%, Sp 55%); relating with nature (SH/WB 28%, Sp 18%); and, relating with God (SH/WB 64%, Sp 56%). Only five measures contain an equal number of items in each of the four domains, so as not to favour any one domain over others (Fisher 1999, 2001, 2004, 2013a; Gomez and Fisher 2003). The most prolific of these is the Spiritual Health and Life-Orientation Measure (SHALOM) which has been sought for use in over 700 studies in 30 languages (Fisher 2010, 2016).

Despite the warning by Sloan et al. (2002) that multidimensional, multi-item measures would be best to assess complex constructs such as SWB, and the proviso mentioned above that measures with two to four items would be hard-pressed to provide a comprehensive cover of multidimensional spiritual well-being, a four-item instrument was planned for use in this study.

### 1.3. Research Questions/Focus of This Paper

This report is located within the context of a larger study that investigated ‘parental perceptions of holistic early childhood education in kindergartens in Hong Kong’. As spiritual well-being is holistic in nature, it was considered a likely factor to predict holistic early childhood education, in line with the reference to C.P. Lin’s work mentioned above. Initial plans were to use the 20-item SHALOM for this purpose. However, this would have occupied nearly a full page in the survey questionnaire. A dilemma arose because this amount of space was not available in the four-page questionnaire.

Over time, several requests have been made to the first author of this paper for a short SWB measure to use in complex research projects that simply employ SWB as one, often minor, predictor variable. To this end, some researchers recently attempted to truncate the 20-item SHALOM to form an 8-item measure, by selecting two of the five items from each of the four domains. This approach was criticized because selecting two items does not provide as holistic a measure of a construct as five items do. These pairs of items did not cohere statistically into coherent factors in the way done by the original five item sets (Fisher 2016), besides which, selecting different items produces different factor ‘scores’ (Fisher 2013a).

There was a need, therefore, to find, or construct, a suitable measure that addressed each of the four specified domains of SWB in a concise and coherent way. Most measures use predictor items to address the entity under investigation, e.g., ‘frequency of prayer’ to predict ‘quality of relationship with God’. A potential solution came to the mind of the first author in the form of a common lead statement, with four followers that enquired directly about the four major components of spiritual well-being, as defined above. This instrument is detailed in the next section.

The research questions that thus arose for this study were,

- RQ1 How well do the four items cohere into a valid and reliable measure of spiritual well-being?
- RQ2 How much influence do contributing variables have on this four-item SWB measure?

Development of a discriminating, valid, and reliable four-item measure, that reflected the major theoretical components of spiritual well-being, would provide a very valuable and convenient tool for researchers in this field.

## 2. Materials and Methods

Ethics approval was obtained for this project from the Human Research Ethics Committee of The Education University of Hong Kong on 8 September 2016 (Ref. No. 2015-2016-0377).

### 2.1. Survey Instrument Development

Relevant literature and input from discussions with parents and principals were used to compose two survey questionnaires, which differed to a minor extent, e.g., on the introductory wording to each question, in order to make each relevant, for parents and teachers. Three additional demographic questions were completed for each kindergarten by the principal. These draft questionnaires were initially reviewed by pertinent university staff, then by six kindergarten principals, eight teachers and ten parents associated with early childhood education. The structure and content of the questionnaires were scrutinised to ensure their appropriateness, comprehensiveness, readability, and accuracy. The questions were written in Chinese, as was appropriate for this sample. Two focus group interviews were held separately with parents and teachers, including principals, to refine the contents of the questionnaires. The structure and content was considered appropriate by both groups.

The part of the survey questionnaire relevant to this report, Section A, had seven main questions asking for demographic information of the parents and teachers involved, including their spiritual well-being:

- A1a listed the District the kindergarten was in, from Hong Kong Island, Kowloon Peninsula or New Territories. (This question was completed by the principal).

Each principal also provided more information about their kindergarten, relating to:

- A1b Sponsoring body, which had alternative selections of Christian, Asian, Muslim/other, or non-religious. (This question was also completed by the principal).
- A1c sought average parent monthly Income, with ranges >HK\$50,000, \$20,000–\$50,000 or <\$20,000 per month. (This question was also completed by the principal).
- A2 was different for parents and teachers: parents indicated Relationship with the child, as in father or mother; teachers indicated how long they have worked in early childhood education.
- A3 sought the Age of the person completing the survey, as 25–30, 31–35, 36–40, 41–45, 46–50 years, and others.
- A4 asked about the highest Education level of the respondent, from Primary school, High school F1–F3, High school F4–F7, college graduate, university graduate, or Master or above.
- A5 queried the Nationality, from Mainland China or Hong Kong.
- A6 asked parents what Class their child was in, from K1 to K3, whereas teachers indicated their Role as principal or class teacher (of K1, K2 or K3).
- A7 presented a new way of assessing spiritual well-being, as introduced above:

‘How important are each of the following relationships for you personally:

- a. with God (or heaven)
- b. with other people
- c. with environment
- d. with yourself’

Responses were given on a five-point scale, from 5 = very important, 4 = important, 3 = average, 2 = less important, to 1 = not important.

### 2.2. Participants and Data Collection

Random sampling was used to select a total of 51 kindergartens from the 18 Districts in Hong Kong. Of the 51 kindergartens selected, 22 principals agreed to participate in the survey. The main reasons provided by the non-participating principals were that they were too busy in September, as it is the commencement of school term; too many other surveys were being received; and they would not have had time to process the distribution and collection of the returned surveys from parents within

the time available for this study. Once principals had agreed to participate in the project, parents and teaching staff were given an Information sheet about the project, with an Invitation to participate, and a Survey form to complete, if they volunteered to participate. A total of 1383 parents and 165 teachers (including principals) completed the survey questionnaires.

### 2.3. Method of Data Analysis

Data entered onto the Excel spreadsheet were transposed onto SPSS for Windows Version 21 for frequency counts, mean and standard deviation values. Systematic analyses of the data were then undertaken to identify the significant relationships present within them. Using SPSS, frequencies of variables led to Principal Components Analysis (PCA). Cronbach alpha values were used to test the reliability of the scale developed from the questionnaires (Cronbach 1970). Regression analyses helped to identify the variables which contributed significantly to the key variable being investigated.

### 2.4. Limitations

Some limitations that could have contributed to this study are:

- a. Due to some administrative constraints within the sponsoring university, the major limitation on conducting and running this project was the very short time frame in which it had to be planned, approved, data collected, analysed, and the report written. Further time constraints operated within the kindergartens. It was by the good graces of so many willing principals, teachers, and parents that they freely agreed to participate in this project at what was a very busy time for kindergartens at the beginning of a new academic year.
- b. Only one survey form was sent home per family, so it was not possible to compare parents in each family in this study. To process two surveys being returned from the same family would have placed an increased burden on the kindergarten staff to note the relationship between the respondents on the survey forms, which could have compromised anonymity. It would also have made the data entry a little more complex, but it could have produced some valuable comparisons.
- c. Detailed socio-economic-status data were not included on the survey forms. Even though responses were anonymous, seeking such information could have been a barrier that prevented some parents from completing the survey, leading to a valuable group of respondents being lost. As such, individual details on income and religious affiliation were not obtained for each participant. Only average, income and sponsor of each kindergarten were gained from principals and used for analysis purposes. These statements were based on the best information available to principals, but the variations within each body would have added greater depth to analyses of demographic variables.
- d. Even though a very good response (77% response rate) was given by parents to participate in the survey on a voluntary basis in such a quick time, some parents might not have thought it worthwhile. A response rate of 71% was given by teachers. Although not 100%, both these response rates indicate good representation of respondents.

## 3. Results

### 3.1. Distribution by Demography

The 22 kindergartens were distributed with two from Hong Kong Island, four from Kowloon Peninsula, with the remaining 16 coming from New Territories.

Thirteen (59%) of the kindergartens had Christian sponsors, which ties in with the fact that about sixty percent of all kindergartens in Hong Kong have religious sponsors. Two kindergartens had Asian religious sponsors, with the remaining seven having non-religious sponsors.

Nine (41%) of the kindergartens had average family income of less than HK\$20,000 per month. The remainder reported between HK\$20,000 and HK\$50,000 per month for each family.

Eighty percent of the 1383 parents who responded were mothers.

The teachers were evenly spread by years of service with half having less than 15 years of service and half more.

The average age of the parents was around 36 years, whereas for teachers it was 42 years.

Eighteen percent of the parents had less than Form 4 level of education, with an additional 42 percent having up to Form 7; 14 percent were college educated and 26 percent had university education. Among the teachers, 11 percent were educated to Form 7, 52 percent were college educated, and 37 percent of the teachers had university education.

Thirty two percent of parents came from Mainland China, whereas only seven percent of the teachers did.

Seven percent of parents had children in class level K1, 35% in K2, and 58% in K3. Principals comprised thirteen percent of kindergarten staff, 87% were class teachers.

### 3.2. Assessing the Four Items of Spiritual Well-Being

As mentioned, the original plan was to use SHALOM, but it was too large to fit the desired maximum size of the survey. As SWB was considered a potential contributor to variance in perceptions of holistic early childhood education, a small instrument, that fitted available space, was needed to assess SWB. None of 258 available spirituality/SWB measures had less than eight items, in a form reporting sound Principal Components Analysis or Factor Analysis, as well as reflecting the four domains of SWB. In fact, only 137 of these 258 instruments reported such statistics (Fisher 2015).

Of the four items, the mothers reported slightly stronger relationships than fathers did with God and themselves (indicated by \* in Table 1).

**Table 1.** Comparison of parental means for ‘spiritual well-being’ (SWB) items and as a whole.

	Group	Relation	N	Mean	SD	t-Test/Sig.
A7aGod *	parent	father	280	3.16	1.06	$t = -2.21$
		mother	1103	3.31	1.00	$p = 0.027$
A7bother	parent	father	280	4.40	0.70	$t = 0.547$
		mother	1103	4.38	0.67	ns
A7cnature	parent	father	280	4.05	0.70	$t = -1.372$
		mother	1103	4.12	0.73	ns
A7dself *	parent	father	280	4.46	0.70	$t = -2.138$
		mother	1103	4.55	0.63	$p = 0.033$

This gender variation concurs with previous findings using SHALOM (Francis and Fisher 2015).

Based on the belief that we humans are holistic in nature, principal components analyses were undertaken on responses to the four relationships to determine whether a single factor outcome could be found.

The four items of the potentially new Spiritual Well-Being scale were subjected to Principal Components Analysis (PCA) using SPSS Version 21. Before performing PCA, the data were assessed for suitability for data analysis. Coefficients of 0.3 and above were found for each of the four items in the correlation matrices for parents and teachers. The Kaiser-Meyer-Olkin values were 0.72 and 0.73, respectively, which were higher than the recommended minimum value of 0.6 and Bartlett’s Test of Sphericity reached statistical significance in each sample, supporting the factorability of the correlation matrices (Pallant 2007).

Principal Components Analysis revealed just one factor in each sample, with eigenvalues exceeding 1, which explained 53.5% of variance among the parents and 58.4% among the teachers

(see Table 2). This single factor outcome indicates the potential statistical validity and usefulness of this novel Spiritual Well-Being scale.

**Table 2.** Component matrices from Principal Components Analysis (PCA) for four items in SWB.

Items	Parent SWB	Teacher SWB
God	0.510	0.582
Other people	0.765	0.811
Nature	0.830	0.767
Self	0.779	0.867
Eigenvalue	2.14	2.34

The resultant single factor (comprising four items) SWB scale showed acceptable alpha values of 0.71 for teachers and 0.70 for parents, satisfying the minimum requirement of 0.7. The mean values (SD) for teachers and parents are listed in Table 3.

**Table 3.** Mean (SD) values for teachers' and parents' SWB.

Teacher	N	Mean	SD
Principal	21	4.41	0.58
K1 teacher	39	4.30	0.49
K2 teacher	48	4.06	0.48
K3 teacher	57	4.18	0.56
Total	165	4.20	0.54
Parent	N	Mean	SD
Mother	1103	3.87	0.59
Father	280	3.93	0.63
Total	1383	3.92	0.60

Confirmatory Factor Analysis (CFA), using AMOS, revealed strong Standardized regression Weights, confirming the relationship of the four items with the total SWB measure, for both parents and teachers. (See Table 4).

**Table 4.** Standardized Regression Weights from CFA.

	Parents	Teachers
God-SWB	0.759	0.815
Other-SWB	0.691	0.713
Nature-SWB	0.772	0.699
Self-SWB	0.507	0.649

The four-item measure in this study had a consistent response mechanism that would permit a comparison between the relationships being studied, making the construct of this four-item measure much better than a recently reported eight-item version of SHALOM, which was shown to be statistically inferior to the original 20-item measure (Fisher 2016).

No significant difference in the level of SWB overall was reported between mothers and fathers using the total four-item measure ( $t(1548) = -1.60, p = 0.111$  ns), even though a slight variation had been reported on two items above (in Table 1). This result resembles findings by gender using SHALOM, in which females scored higher than males on one factor, but not SWB overall (Gomez and Fisher 2005).

The principals reported marginally higher values for spiritual well-being as compared with some of the teachers ( $F(3161) = 2.75, p = 0.047$ ), and an independent-samples  $t$ -test conducted to compare the

SWB scores for teachers and parents revealed that teachers scored significantly higher than parents on this scale ( $t(1548) = 6.32, p < 0.001$  (two-tailed)). The magnitude of the difference in the means (mean difference = 0.28, 95% CI: 0.19 to 0.37) was large (effect size = 0.24).

### 3.3. Influences on the 4-Item Spiritual Well-Being Index

No significant variations were shown by location, income, age, nationality, or the child’s class level, in relation to SWB. However, hierarchical regression analyses were used to reveal that significant influence was shown on SWB by sponsor and education level for parents, and sponsor and role, for teachers. (See Tables 5–9 for details.) It is understandable that kindergartens with Christian sponsors will attract teachers, especially principals, with higher levels of spiritual well-being, to fit their ethos, but it is interesting to note that they also attract parents with higher levels of spiritual well-being.

**Table 5.** Mean (SD) values for influence of Sponsor on parents’ and teachers’ SWB.

Sponsor	Parent SWB			Teacher SWB		
	N	Mean	SD	N	Mean	SD
Christian	832	3.99	0.59	90	4.36	0.55
Asian	142	3.70	0.65	20	4.07	0.55
No religion	409	3.85	0.58	55	4.01	0.43
total	1383	3.92	0.60	165	4.20	0.64

**Table 6.** Correlations and hierarchical regression analysis for parental SWB.

		Education	Sponsor
Pearson Correlation	SWB	0.081 **	0.147 ***
N = 1383	Education		0.106 ***

\*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

**Table 7.** Hierarchical Regression Coefficients.

Model	F	$\Delta R^2$		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
				B	Std. Error	Beta		
1	9.10	0.007	(constant)	3.82	0.038		101.5	0.000
			Education	0.126	0.042	0.081	3.02	0.003
2	18.5	0.020	(constant)	3.73	0.042		91.9	0.000
			Education	0.102	0.041	0.066	2.47	0.014
			Sponsor	0.173	0.033	0.140	5.26	0.000

Regression analysis can be used to determine the relative contribution of two or more variables to variance in a defined variable, as shown by Beta values. For example, hierarchical regression analysis of SWB for parents showed that sponsor contributed more greatly to variance in SWB than did education level, and for teachers sponsor contributed more greatly than role to variance in SWB. However, only 2.7 percent of variance was explained by these two predictor variables for parents and 12.8 percent for teachers.

**Table 8.** Correlations and hierarchical regression analysis for teachers’ SWB.

		Role	Sponsor
Pearson Correlation	SWB	−0.149 *	0.311 ***
N = 165	Role		0.090 ns

\*  $p < 0.05$ , \*\*\*  $p < 0.001$ .

**Table 9.** Hierarchical Regression Coefficients.

Model	F	$\Delta R^2$		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
				B	Std. Error	Beta		
1	7.42	0.022	(constant)	6.80	1.35		5.04	0.000
			Role	−0.239	0.0124	−0.149	−1.93	0.056
2	11.9	0.106	(constant)	7.12	1.28		5.56	0.000
			Role	−0.286	0.118	−0.179	−2.43	0.016
			Sponsor	0.350	0.079	0.327	4.44	0.000

When regression analysis was used to compare the four items comprising the 4-ISWBI, it was clear that greatest variance was explained in SWB, by the God-factor (with highest Beta value), for both the parent and teacher groups (see Table 10).

**Table 10.** Item values related to Regression Analyses of four items in 4-ISWBI.

Items	Parent Mean (SD)	Beta	Teacher Mean (SD)	Beta
God/heaven	3.28 (1.01)	0.560	3.77 (0.96)	0.598
Other people	4.38 (0.67)	0.374	4.52 (0.59)	0.368
Nature	4.11 (0.74)	0.410	4.33 (0.58)	0.358
Self	4.53 (0.65)	0.000	4.56 (0.62)	0.000

These results reinforce previous findings, obtained using the 20-item SWB measure SHALOM, that relating with God is the most important of the four relationships for spiritual well-being (Fisher 2012, 2013a), and that relating with self contributes the least variance to SWB, due to the high consistency of scores by parents and teachers in this area (See Table 10).

As the instrument stands, the questions comprising the 4-ISWBI address personal perceptions of ideals for spiritual well-being, as defined above. However, recent studies using SHALOM (in Chinese), with 1698 adolescents in Hong Kong, revealed large correlation values between the ‘ideals’ and ‘lived experiences’ in the four domains and total SWB (personal domain  $r = 0.68$ , communal domain  $r = 0.69$ , environmental domain  $r = 0.70$ , transcendental domain  $r = 0.79$ , SWB  $r = 0.75$ ) (Mok 2013), as well as similar patterns of relationships between the ideals and lived experiences for secondary school students with teachers in Australia (Fisher 2008), and large correlational values between the ideals and lived experiences of 409 adults, in an international study using the generic version of SHALOM (personal domain  $r = 0.61$ , communal domain  $r = 0.67$ , environmental domain  $r = 0.77$ , transcendental domain  $r = 0.84$ , SWB  $r = 0.73$ ) (Fisher 2013b). Consequently, it is expected that a strong correlation would be found between ideals and lived experiences for SWB among adults in Hong Kong, similar to that found there with students. Therefore, it is anticipated that the 4-ISWBI would provide a sound measure of (lived experience of) SWB, if it was modified slightly to read, ‘How well do you relate personally with each of the following, (a) with God/heaven; (b) with other people; (c) with the environment; (d) with yourself?’, with responses given on a 5-point scale from ‘very weakly’ to ‘very strongly’.

### 3.4. Validity and Reliability of the 4-ISWBI

#### 3.4.1. Validity

*Face validity* of instruments aims to establish the acceptability of a scale in the context in which it is used. This helps to determine whether the scale measures what it claims to measure, based on the subjective assessment by experts and other people who are similar to the people who are likely to use the scale. The potential scale in this study was firstly assessed by the supervisors of this project,

who are knowledgeable in this field of research. Secondly, focus group discussions with kindergarten parents and principals, indicated that only minor adjustments were needed for the meaning of the survey contents to be considered clear, understandable and concise.

*Content validity* is also obtained by expert judgment, to determine the extent to which an instrument reflects the specific content of what is measured. In this study, the four items in the Spiritual Well-Being Index came directly from the initial description of Spiritual Well-Being as presented by the [National Interfaith Coalition on Aging \(NICA\)](#), reinforced by a study with school teachers ([Fisher 1998](#)), with the additional feature of 'heaven' being added to the God-item to make it specifically relevant for Chinese people ([Lin 1998](#)).

*Construct validity* is defined as 'a process through which empirical evidence is accumulated, with a view to establishing pertinence in the measurement of a concept or theoretical construct, through inferences and interpretations based on test scores' ([Heredia et al. 2012](#)). In this study, before performing Principal Components Analysis (PCA) using SPSS Version 21, the data were assessed for the suitability for data analysis. Coefficients of 0.3 and above were found for each of the items in the correlation matrices for parents and teachers in each of the potential scales. Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was applied to the items comprising each of the potential scales, with all results being above the recommended minimum value of 0.6, and Bartlett's Test of Sphericity reached statistical significance in each sample, supporting the factorability of the correlation matrices ([Pallant 2007](#)). Eigenvalue of 1 was taken as the cut-off point for the only factor arising from PCA, with more than 50% variance explained for the total scale. Confirmatory Factor Analysis provided additional support for the four items relating strongly with SWB overall.

*Concurrent validity* could be shown by comparing the scores on the four items in the 4-ISWBI with corresponding factor scores from a confirmed, more comprehensive SWB measure, such as the 20-item SHALOM, with the same sample, at the same time. This was not possible due to the restricted space in the current study. However, the findings of similarity from the regression analysis of the four items on 4-ISWBI, with the four factors on SHALOM, reinforces the validity of the 4-ISWBI as a sound indicator of SWB.

The above results indicate sound validity for the 4-ISWBI.

#### 3.4.2. Reliability

Internal consistency refers to how well a scale or test works similarly in different conditions, depending on using the same instrument, at different times and settings, with varying respondents, as well as pure random error. Cronbach's alpha is the most common method used to determine an instrument's internal consistency. Alpha values for the 4-ISWB Index developed in this study were 0.70 for parents and 0.71 for teachers. As a minimum, Cronbach's alpha value of 0.7 is recommended to indicate acceptable internal consistency, these results indicate the reliability of the 4-ISWBI.

### 4. Discussion

In response to Research Question 1, 'How well do the four items cohere into a valid and reliable measure of spiritual well-being?' the 4-Item Spiritual Well-Being Index has shown acceptable validity and reliability using standard statistical procedures. A comparison of findings with those from a more comprehensive measure (SHALOM) add to the validity of the 4-ISWBI, for example, relating with God was once again shown to be the most important of the four relationships for spiritual well-being. The 4-ISWBI presented here provides an indication of respondents' perceptions of ideals for spiritual well-being, not a fully formed comprehensive interrogation of SWB. This 4-ISWB Index would provide an indication of (lived experience of) SWB, with slight adjustment of wording to read, 'How well do you relate personally with each of the following, (a) with God/heaven; (b) with other people; (c) with the environment; (d) with yourself?', with responses given on a 5-point scale from 'very weakly' to 'very strongly'.

Research Question 2, ‘How much influence do contributing variables have on this four-item SWB measure?’ has been addressed by discrimination via sponsor, teacher role, and level of education in the populations studied here. Other demographic variables did not show significant influence.

These findings are sufficient to recommend the 4-ISWB for future studies with adults in other languages and cultural settings. The structure and level of language in this index are also clear enough to use with adolescents, and even possibly with primary school-aged children.

Other, single-item, factors have been used in well-being research. For example, eight single-item factors comprise a Global Life Satisfaction (GLS) measure (Tomyn et al. 2011), one of which was a composite measure of a ‘domain’ of religion and spirituality, namely, ‘How satisfied are you with your spirituality or religion’ (R/S). Although some doubt could be raised about the capacity of the 4-ISWB Index to adequately assess SWB, it is more comprehensive than the GLS domain of R/S. Tomyn et al. (2011) expended considerable effort explaining the ‘factorial invariance between both versions’ of their scale, comparing adults and children on the single-item factors. Similarly, statistical analyses presented herein reveal the satisfactory nature of the 4-ISWB Index. As its name suggests, an index is ‘a thing which serves to point to a fact or conclusion’ and ‘is a sign or indication of’ something ((Brown 1993), Oxford dictionary), and is not an exhaustive exposition thereof.

Undoubtedly, spiritual well-being is a complex construct, often perceived as comprising of four domains, e.g., by National Interfaith Coalition on Aging (NICA), Fisher (1998), Waaijman (2006), and Garssen et al. (2016). Each of the items in the 4-ISWB Index provides a summary view of respondents’ perceptions of the quality of relationships in each of the four specified areas, which constitute SWB, and not just a title. However, for a more detailed analysis of spiritual well-being, suitable for comparison with other personal characteristics, such as personality, happiness, and quality of life, a multi-item instrument, such as SHALOM, would provide a more comprehensive measure of the complex constructs. That said, this study has shown that the 4-ISWB Index offers a statistically sound means of obtaining an indication, not a detailed assessment, of spiritual well-being. As such, it will be useful as an initial screening tool of SWB for nominated populations to see if further, more detailed analyses may be warranted.

**Acknowledgments:** We gratefully acknowledge the assistance of Marian Tso & Delson Wai in distributing and collecting the surveys for this study, as well as the invaluable help provided by Jessy Cheung and her colleagues in entering the data onto Excel. No source of external funding was provided for this study. We are grateful to Religions for covering the costs to publish in open access.

**Author Contributions:** Both authors contributed extensively to this paper. Both conceived and designed the project; David Ng organized collection of data; John Fisher analyzed the data, and wrote the paper, with help from David Ng.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

- Adams, Francis. 1939. *The Genuine Works of Hippocrates*. Trans. from the Greek (Aphorisms, I.1); London: Bailliere, Tindall & Cox, p. 299.
- Berry, Devon. 2005. Methodological pitfalls in the study of religiosity and spirituality. *Western Journal of Nursing Research* 27: 628–47. [CrossRef] [PubMed]
- Boero, M. E., M. Caviglia, R. Monteverdi, V. Braidà, M. Fabello, and L. M. Zorzella. 2005. Spirituality of health workers: A descriptive study. *International Journal of Nursing Studies* 42: 915–21. [CrossRef] [PubMed]
- Lesley Brown, ed. 1993. *The New Shorter Oxford English Dictionary*. Oxford: Clarendon Press.
- Cronbach, Lee J. 1970. *Essentials of Psychological Testing*, 3rd ed. New York: Harper.
- Egbert, Nichole, Jacqueline Mickley, and Harriet Coeling. 2004. A review and application of social scientific measures of religiosity and spirituality: Assessing a missing component in health communication research. *Health Communication* 16: 7–27. [CrossRef] [PubMed]
- Fisher, John W. 1998. *Spiritual Health: Its Nature and Place in the School Curriculum*. Ph.D. thesis, University of Melbourne, Melbourne, VIC, Australia. Available online: <https://minerva-access.unimelb.edu.au/handle/11343/39206> (accessed on 5 September 2016).

- Fisher, John W. 1999. Developing a Spiritual Health and Life-Orientation Measure for Secondary School Students. Paper presented at University of Ballarat Annual Research Conference, Ballarat, VIC, Australia, October 15; pp. 57–63.
- Fisher, John W. 2001. Comparing levels of spiritual well-being in state, Catholic and independent schools in Victoria, Australia. *Journal of Beliefs and Values* 22: 99–105. [[CrossRef](#)]
- Fisher, John. 2004. Feeling Good, Living Life: A spiritual health measure for young children. *Journal of Beliefs & Values* 25: 307–15.
- Fisher, John W. 2008. Nurturing students' spiritual well-being: Caring for the whole child. *Journal of Christian Education* 51: 7–20. [[CrossRef](#)]
- Fisher, John. 2010. Development and application of a spiritual well-being questionnaire called SHALOM. *Religions* 1: 105–21. [[CrossRef](#)]
- Fisher, John W. 2012. The importance of relating with God for spiritual well-being. In *Spirituality: New Reflections on Theory Praxis and Pedagogy*. Edited by Martin Fowler, Michael Weiss and John L. Hochheimer. Oxford: Inter-Disciplinary Press, pp. 147–61.
- Fisher, John W. 2013a. Assessing spiritual well-being: Relating with God explains greatest variance in spiritual well-being among Australian youth. *International Journal of Children's Spirituality* 18: 306–17. [[CrossRef](#)]
- Fisher, John W. 2013b. You can't beat relating with God for spiritual well-being: Comparing a generic version with the original spiritual well-being questionnaire called SHALOM. *Religions* 4: 325–35. [[CrossRef](#)]
- Fisher, John W. 2015. A critique of quantitative measures for assessing spirituality and spiritual well-being. In *Spirituality, Global Practices, Societal Attitudes and Effects on Health*. Edited by Edith C. Roberts. New York: Nova Science Publishers Inc., pp. 91–131. ISBN 978-1-63482-370-8.
- Fisher, John W. 2016. Assessing adolescent spiritual health and well-being. *SSM—Population Health* 2: 304–5. [[CrossRef](#)]
- Francis, Leslie J., and John W. Fisher. 2015. Locating spiritual well-being: A study among secondary school students in the empirical science of religious education. *Religious Education Journal of Australia* 31: 30–37.
- Garssen, Bert, Anja Visser, and Eltica de Jager Meezenbroek. 2016. Examining whether spirituality predicts subjective well-being: How to avoid tautology. *Psychology of Religion and Spirituality* 8: 141–48. [[CrossRef](#)]
- Gomez, Rapson, and John W. Fisher. 2003. Domains of spiritual well-being and development and validation of the Spiritual Well-Being Questionnaire. *Personality and Individual Differences* 35: 1975–91. [[CrossRef](#)]
- Gomez, Rapson, and John W. Fisher. 2005. The Spiritual Well-Being Questionnaire: Testing for model applicability, measurement and structural equivalencies and latent mean differences across gender. *Personality and Individual Differences* 39: 1383–93. [[CrossRef](#)]
- Heredia, Luz Patricia D., Alba I. M. Sánchez, and Divane de Vargas. 2012. Reliability and validity of spirituality questionnaire by Parsian and Dunning in the Spanish version. *Revista Latino-Americana de Enfermagem* 20: 559–66. [[CrossRef](#)]
- Hill, Peter C., Kenneth I. Pargament, Ralph W. Hood, Michael E. McCullough, James P. Swyers, David B. Larson, and Brian J. Zinnbauer. 2000. Conceptualizing religion and spirituality: Points of commonality, points of departure. *Journal for the Theory of Social Behaviour* 30: 51–77. [[CrossRef](#)]
- Hill, Peter C., and Kenneth I. Pargament. 2003. Advances in the conceptualization and measurement of religion and spirituality. *American Psychologist* 58: 64–74. [[CrossRef](#)] [[PubMed](#)]
- King, James E., and Martha R. Crowther. 2004. The measurement of religiosity and spirituality: Examples and issues from psychology. *Journal of Organizational Change Management* 17: 83–101. [[CrossRef](#)]
- Koenig, Harold G. 2008. Concerns about measuring "spirituality" in research. *Journal of Nervous and Mental Disease* 196: 349–55. [[CrossRef](#)] [[PubMed](#)]
- Harold G. Koenig, Michael E. McCullough, and David B. Larson, eds. 2001. *Handbook of Religion and Health*. Oxford: Oxford University Press.
- Harold G. Koenig, Dana E. King, and Verna B. Carson, eds. 2012. *Handbook of Religion and Health*, 2nd ed. Oxford: Oxford University Press.
- Lin, Chi-Ping. 1998. *A Holistic Education-Based General Education at Chung Yuan University*. Taipei: Cosmic Light Publishing Co.
- MacDonald, Douglas A., and Harris L. Friedman. 2002. Assessment of humanistic, transpersonal, and spiritual constructs: State of the science. *Journal of Humanistic Psychology* 42: 102–25. [[CrossRef](#)]

- MacDonald, Douglas A., Harris L. Friedman, Jacek Brewczynski, Daniel Holland, Kiran K. Salagame, Krishna K. Mohan, Zuzana O. Gubrij, and Hye W. Cheong. 2015. Spirituality as a scientific construct: Testing its universality across cultures and languages. *PLoS ONE* 10: e0117701. [CrossRef] [PubMed]
- Moberg, David O. 2002. Assessing and measuring spirituality: Confronting dilemmas of universal and particular evaluative criteria. *Journal of Adult Development* 9: 47–60. [CrossRef]
- Moberg, David O. 2010. Spirituality research: Measuring the immeasurable? *Perspectives on Science and Christian Faith* 62: 99–114.
- Moberg, David O. 2011. Expanding Horizons for Spirituality Research. Available online: <http://hrr.hartsem.edu/sociology/spirituality-research.html> (accessed on 15 August 2016).
- Mok, Irene. 2013. A Study of the Spiritual Health of Adolescents in Three Hong Kong Secondary Schools. Ed.D. thesis, Centre for Religious & Spirituality Education, Hong Kong Institute of Education, Hong Kong, China.
- National Interfaith Coalition on Aging (NICA). 1975. *Spiritual Well-Being: A Definition*. Athens: NICA.
- Pallant, Julie. 2007. *SPSS Survival Manual. A Step-by-Step Guide to Data Analysis Using SPSS for Windows (Version 15)*, 3rd ed. Crows Nest: Allen & Unwin.
- Sloan, Jeff A., Neil Aaronson, Joseph C. Cappelleri, Diane L. Fairclough, and Claudette Varricchio. 2002. Assessing the clinical significance of single items relative to summated scores. *Mayo Clinic Proceedings* 77: 479–87.
- Heinz Streib, and Ralph W. Hood Jr., eds. 2016. *Semantics and Psychology of Spirituality*. Basel: Springer International Publishing.
- Tomyn, Adrian J., Matthew D. F. Tyszkiewicz, and Robert A. Cummins. 2011. Personal Well-Being Index: Psychometric equivalence for adults and school children. *Social Indicators Research* 110: 913–24. [CrossRef]
- Waaajman, Kees. 2006. What is spirituality? *Acta Theologica Supplementum* 8: 1–18. [CrossRef]
- Waaajman, Kees. 2007. Spirituality—A multifaceted phenomenon. *Studies in Spirituality* 17: 1–113. [CrossRef]
- Wills, Eduardo. 2009. Spirituality and subjective well-being: Evidences for a new domain in the Personal Well-Being Index. *Journal of Happiness Studies* 10: 49–69. [CrossRef]
- Zinnbauer, Brian J., Kenneth I. Pargament, and Allie B. Scott. 1999. The emerging meanings of religiousness and spirituality: Problems and prospects. *Journal of Personality* 67: 889–919. [CrossRef]



© 2017 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).