



The spiritual capital scale: development and psychometric properties

Mohsen Golparvar¹, Zahra Javadian¹

Journal of Research & Health
Social Development & Health Promotion
Research Center
Vol. 5, No.4, Jan & Feb 2016
Pages: 25-35
Original Article

1. Department of Industrial and Organizational Psychology, School of Psychology and Educational Science, Islamic Azad University, Isfahan (Khorasgan) Branch, Isfahan, Iran

Correspondence to: Mohsen Golparvar. Department of Training as Second Language, School of Foreign Languages, Islamic Azad University, Isfahan (Khorasgan) Branch, Isfahan, Iran
Email: drmgolparvar@gmail.com

Received: 27 Jun 2013

Accepted: 4 Oct 2014

How to cite this article: Golparvar M, Javadian Z. The spiritual capital scale: development and psychometric properties. *J Research & Health* 2016; 5(4): 25-35.

Abstract

Spirituality is among the most important influential factors in promotion of health. There is a particular emphasis on the effect of spirituality on physical and mental health in Islam. Spiritual capital is one of the latest constructs in spirituality. This study aims to development and concurrently validate the spiritual capital scale with spiritual well-being scale. In this development and validation study, statistical population consisted of employees of two companies working in the city of Isfahan, of whom, 277 were selected through stratified random sampling method. Study tools included a researcher-developed spiritual capital scale and Gomez & Fisher spiritual well-being scale. Data were analyzed using exploratory and confirmatory factor analyses, reliability coefficient (Cronbach's alpha), and Pearson correlation coefficient. The researcher-developed 20-item spiritual capital scale contains 4 factors of attachment to God (8 items), spiritual value (4 items), spiritual influence (4 items), and transcendental relationship with God (4 items); with Cronbach's alpha for these factors as 0.9, 0.76, 0.65, and 0.83, respectively. The present study results showed a positive and significant correlation between components of spiritual capital scale and three domains of spiritual well-being (personal, environmental, and transcendental domains) as evidence of convergent validity of spiritual capital scale. Results also confirmed favorable status of reliability and validity of spiritual capital scale. Thus, this scale can be used in future studies to measure spirituality.

Keywords: Capital, Reliability, Spiritual, Validity, Wellbeing

Introduction

In recent years, increasing interest has been drawn to the importance of people's well-being and health [1-5]. A highly serious construct in this area is spirituality. So far, there have been many studies on a wide variety of overlapping constructs with spirituality such as seeking meaning, religiosity, and religious orientation [6, 7]. One of the most

serious of these constructs is spiritual capital [8]. The idea of spirituality as a dynamic reserve and a form of human capital began in the 18th century [8-10]. In a brief review, definitions of spiritual capital can be placed in three main classes, including spiritual capital as religious capital (pattern of intergenerational religious behaviors and beliefs that are common to

people of the same groups and families), a factor that gives meaning to life, and a form of attachment to God [11-13]. Spiritual capital as attachment to God can be considered the power resulting from attachment to an extra-human power that is God almighty that leads to peace, purposive effort and futurism hope [9].

In Islam, spirituality is also considered a phenomenon overlapping with religious behaviors and beliefs (both obligatory and recommended) that is formed according to attachment, trust and hope in the endless divine grace and mercy [19]. In other words, among Muslims, spirituality is manifested through adherence to religious customs and rituals proposed in teachings of the prophet, and sustained effort to establish psychological and cognitive link with the creator [14]. From such a perspective, the eternal divine source with link to human behaviors and beliefs, bestows upon mankind an endless and vast power that has a rejuvenating, dynamic, guiding and regulating nature beyond material capital [15]. In Islamic view, like any other capital, spiritual capital is considered a context for human trust, peace and purposive effort. In fact, attachment to God and His unrivalled wisdom leads to creation of a safe haven for humans, so that through effort and perseverance for finalistic and ultra-mundane goals, they can move toward a better and peaceful world [13-15]. Thus, dominance of spiritual medium based on constant attention to the creator is considered a valuable and precious capital that is spiritual capital.

In support of this claim, Stark and Finke believe that spiritual capital should be based on the fact that the power and energy in this area is formed and strengthened from human capital and religious tendencies, and in accordance to human emotional attachment to spiritual values and customs that are motivating and empowering [16]. Thus, spiritual capital should act as a guiding source, and cause compliance and commitment to honesty, and respect in humans, and have a guiding and energizing nature, based on wisdom and spiritual values such as trust, self-esteem and human dignity, leading to spiritual influence on our surroundings. It

should be strengthened through resorting to God and prayer [16].

Researchers' past efforts in the area of spirituality and its practicability have led to design and presentation of several spirituality and religiosity tools for healthy and sick people, including: Daily Spiritual Experience Scale [17-19], spiritual interviews with old and sick people [20-25], Multidimensional Spirituality and Religiosity Scale [26], and a wide variety of other tools. A few points need to be mentioned about these tools. Firstly, none of these scales have addressed assessment of spirituality as a capital created through bonding, belonging, devotion, trust, and hope in God and compliance with human, moral, and religious customs. Meanwhile, the link between spirituality and phenomena such as health, well-being, human behavior and function [27,28] in various aspects of life necessitates spirituality to be considered as human capital that strengthens the feeling of not being lonely, but being supported, productive and dynamic [12-14]. Next, non-conceptualization of spirituality as a source of capital has led to limitation of explanations and presentation of mechanisms that could have penetrated human mind to provide the context for extending positive effects of this phenomenon. In simple words, when spirituality and spirituality-orientation are regarded as capital, firstly, theoretical extension becomes possible, and secondly, because the term "capital" is often associated with having support, capability, hope, etc., we pave the way for greater attention to spirituality as a source of capital, even in those who do not much believe in religious behaviors and beliefs, in a traditional sense, or in religious paradigm.

Alongside theoretical conceptualization of spiritual capital, we reach the positive outcomes that spirituality brings about for humans. The most important outcomes so far cited for spirituality (spiritual capital) include mental health, reduced depression and anxiety [29-31], purpose, hopefulness, ability to cope with pain and suffering [32-34], peace, forgiveness, well-being, and health [35-38]. In terms of

content, one of the variables associated with spiritual capital is spiritual well-being. Fisher proposed a spiritual well-being model composed of personal-oriented, community-oriented, environmental-oriented, and transcendental-oriented well-being [39,40]. Personal-oriented spiritual well-being means that person has been able to intra-relate with oneself in various aspects of life (meaning, purpose, and values in life). Community-oriented spiritual well-being highlights the role of interpersonal relationships in spiritual well-being by emphasizing love, justice, hope, and valuing humanity. The third dimension is environmental-oriented spiritual well-being, which is associated with enjoyment, care and nurturing the surrounding natural environment. In other words, it is the feeling of oneness with nature and concern about it. Finally, the fourth dimension, transcendental well-being, is individual's psychological relationship with a super-human force, especially God almighty [39]. This multidimensional model of spiritual well-being has been confirmed in a number of studies [40]. Some evidence shows that spiritual well-being is a necessary construct for psychological studies, and it is associated with some psychological and personal variables [40]. Review of available literature suggests that spiritual conceptualization as spiritual capital is growing day-by-day [7-14]. Meanwhile, interested researchers, especially in Iran are faced with a lack of access to measuring tools for this construct. Accordingly, the first reason to conduct this study was to prepare a tool for measuring spiritual capital to enable researchers to pursue the roles and applications of spirituality as a source of capital. The second reason (rather theoretical in nature) was that, by raising the spiritual capital and its measuring tool, some graduate students will be attracted to this variable for their research. This tendency has undoubtedly expanded scientific knowledge about spiritual capital, through which, frontiers of human knowledge in this field will expand. Accordingly, this study mainly aims to design and present spiritual capital scale, and report its concurrent validity with spiritual well-being scale. In the present study, the main issue was

appropriate validity and reliability of spiritual capital scale.

Method

This study is a questionnaire design and psychometrics type using correlation method. Study population consisted of 530 employees of two factories with similar organization, products, and managements in the city of Isfahan in 2012, of whom 280 were selected for participation using stratified random sampling (observing proportion of employees in two factories), based on sample size required for exploratory factor analysis [41,42]. Two sets of employees were selected because we wanted to provide a tool for working and non-working settings that would be applicable to a wide range of people and groups. A total of 280 employees were selected using the list of employees and stratified quota sampling. Following distribution and collection, 3 incomplete questionnaires (1.1%) were excluded, and sample size reduced to 277 employees (return rate 98.9%). The following tools were used for assessment of study variables: A) Spiritual Capital Scale:

First, available literature including books, postgraduate theses [3,8,11-13], and articles, especially those relating to workplace spirituality [28-36] were reviewed. Then, a preliminary 34-item pool of items was prepared and designed based on an approach of trust, bonding and devotion to a power beyond human (God and creator) toward spiritual capital (this approach is highly compatible with teachings of Islam), with a 5-point scale (from very little=1 to very much=5). First, face and content validities of this questionnaire were assessed using comments from 3 psychologists. Since there were no predetermined components and factors, the 34-item questionnaire was made available to them to comment on appearance and consistency of items with the approach of trust, devotion and bonding to a power beyond human (God and creator). Items compatible with this approach were kept. Before implementation, experts from both factories sent their comments

regarding practicability of questionnaires for employees.

Before presenting exploratory factor analysis results, some explanations are required for the criteria for deciding the number of extractable factors in exploratory factor analysis. The most important ones are a clear theory or approach toward factors and their questions, eigenvalue greater than 1, achieving maximum defined variance of tool through extracted factors and their questions, in case of orthogonal rotation, factor loading (0.3, 0.4 are most advised) on one factor (component), and scree plot review [43, 44].

In current important approaches and views, some experts emphasize maximum number of factors and items, and others focus on appropriate number of factors and compatibility of factors and items with a fundamental approach and aiming to make a tool [43]. In this study, the focus is on compatibility of number of factors and items with approach of trust, devotion and bonding with the spiritual power and the creator toward spiritual capital. Accordingly, based on scree plot and factor loading in excess of 0.4 on just one factor, compatible maximum variance with basic theoretical approach (55% to 60% of variance has been reported adequate) and eigenvalue above 1 has been achieved [43-45]. To meet the above criteria, process of filtering factors through exploratory factor analysis has frequently been recommended [42,45]. Accordingly, in the present study, spiritual capital scale underwent filtering in several stages. Spiritual Capital Scale is presented in appendix 1 at the end of this article.

B) Spiritual well-being questionnaire:

In this study, to assess spiritual well-being questionnaire (this was used to assess convergence construct validity of spiritual capital scale), the 20-item questionnaire designed and validated by Gomez and Fisher [40] was used, which contains a 5-point scale (very little=1 to very much=5) and 4 spiritual well-being domains of personal, communal, environmental, and transcendental. Before use, this questionnaire was translated in a two-stage process (professional translation and adaptation). An example of questions in

this questionnaire is: How much have you experienced development of inner peace over the past 6 months? Gomez and Fisher [40] have documented validity of their questionnaire based on confirmatory factor analysis, and also reported internal consistency of the 4 domains of personal, communal, environmental, and transcendental according to Cronbach's alpha 0.81, 0.82, 0.86, and 0.95 respectively [40]. In the present study, construct validity of spiritual well-being questionnaire was assessed through exploratory factor analysis with varimax rotation on its 20 items, and accordingly, 17 items were based on 3 factors. Cronbach's alpha was found 0.91, 0.92, and 0.9 for these three factors, and 0.95 for the whole questionnaire. The 17-item spiritual well-being questionnaire is presented in appendix 2 at the end of this article. Study questionnaires were completed by participants in their workplaces in 10 to 15 minutes, and data obtained were analyzed in SPSS-18 using Pearson Correlation, Cronbach's alpha, and exploratory factor analysis in SPSS-18, and confirmatory factor analysis in AMOS-16 software.

Results

Of the 202 participant that declared their education, 153 (75.7%) were educated up to high school diploma, and 49 (24.2%) had associate diploma and above. Of the 213 participants that declared their marital status, 70 (32.9%) were single, and 143 (67.1%) were married. Participants' mean age was 28.39 years (standard deviation 5.02), and their mean work history was 1.98 years (standard deviation 1.68). Table 1 presents mean and standard deviation, and Cronbach's alpha of study variables.

According to Table 1, mean value of 4 domains of spiritual capital: attachment to God, spiritual value, spiritual influence, and transcendental relationship with God, were 2.96, 3.13, 3.67, and 3.09 respectively, which were equal to or higher than average values of the 5-point scale used in this questionnaire (from very little=1 to very much=5). However, in spiritual well-being domain, mean environmental well-being was 2.73, which was less than the 5-point scale

Table 1 Mean, standard deviation and cronbach's alpha of research variables

Row	variable	Components of variables	Number of item	Mean	SD	Cronbach's alpha
1	Spiritual Capital	Attachment to God	8	2.96	0.82	0.9
2		Spiritual Value	4	3.13	0.75	0.76
3		Spiritual Influence	4	3.67	0.75	0.65
4		Transcendental Relationship with God	4	3.09	0.84	0.83
5	Spiritual well being	Personal	7	3.18	0.89	0.91
6		Environmental	5	2.73	0.99	0.92
7		Transcendental	5	3.45	0.87	0.9

Table 2 KMO, bartlett's test of sphericity and communalities in final exploratory factor analysis for spiritual capital questionnaire

Items	Initial Communalities	Extracted	Items	Initial Communalities	Extracted
1	1	0.5	11	1	0.47
2	1	0.62	12	1	0.43
3	1	0.65	13	1	0.59
4	1	0.63	14	1	0.74
5	1	0.76	15	1	0.69
6	1	0.72	16	1	0.47
7	1	0.51	17	1	0.59
8	1	0.54	18	1	0.73
9	1	0.62	19	1	0.64
10	1	0.65	20	1	0.7
KMO				0.92	
Bartlett's test of sphericity				2598.77, p<0.001	

average (very little=1 to very much=5). On the contrary, mean personal and mean transcendental spiritual well-being were 3.18 and 3.45 respectively, which were above average.

Prior to presentation of exploratory factor analysis results, and according to above explanations in "study tools" section, the number of items in the 34-item spiritual capital scale reduced to 20 on 3 consecutive occasions according to above criteria (8 items on the first occasion, 2 on the second, and 4 on the third). The final 20-item scale underwent factor analysis on the fourth occasion, and 4 factors with factor loading of 0.4 and higher on only one factor were obtained. It should be noted that 14 items were eliminated, despite confirmation of face and content validities by experts, because experts commented on overall face and content validity of items, and not on the potential area of spiritual capital that each item covered. In the fourth factor analysis, the 4 final factors (naming of items was according to consistency with underlying theoretical

approach of study and contents of items) were named: attachment to God (8 items), spiritual value (4 items), spiritual influence (4 items), and transcendental relationship with God (4 items). Factor loading of 0.4 was chosen, since more accurate factors can be extracted at higher values of factor loading [44: pp 5]. Generally, the process used for design and preparation of spiritual capital scale has frequently been recommended and used in designing tools for working environments [44]. In factor analysis of spiritual well-being questionnaire, 3 items were found with a very similar factor loading on more than one factor, and had a weakening effect on Cronbach's alpha of factors. Thus, it was decided to eliminate these three items from spiritual well-being questionnaire. The final 17 items included three spiritual well-being factors of personal (7 items), environmental (5 items), and transcendental (5 items). Tables 2 and 3 present results of the last exploratory factor analysis (performed to assess construct validity of spiritual capital scale).

According to Table 2, KMO=0.9, and Bartlett's test of sphericity=2598.77 ($p<0.01$), which indicate possibility of performing exploratory factor analysis. Communalities in the 20 items fluctuated from 0.43 for items 12 to 0.76 for item 5 (14 items were eliminated because of having common factor loadings on more than one factor).

According to Table 3, the final 4 extracted items with eigenvalues (rows 21 to 23 of Table 4) 8.04, 1.63, 1.34, and 1.13, explained 60.74% of variance of the whole questionnaire. According to Table 4, factor loadings were as follows: 8 items for the first factor, namely attachment to God, 4 items for the second factor, namely spiritual value, 4 items for the third factor, namely spiritual influence, and 4 items for the fourth factor, namely transcendental relationship with God. Following elimination of 14 items, because of having common factor loadings on more

than one factor, in exploratory factor analysis, as evidence of its factor construct validity, Spiritual Capital Scale was found to have a 4-factor (theme) structure. Confirmatory factor analysis was performed to ascertain construct validity of spiritual capital scale, together with spiritual well-being questionnaire used in this study. The results of their fitness indicators are shown in Table 4. The 4-factor structure of spiritual capital scale and the 3-factor structure of spiritual well-being questionnaire were compared to a single-factor structure in terms of fitness indicators. Since designed and validated spiritual capital was a new scale, with no previous reference on the number of its factors, only the 4-factor structure was compared to a single-factor structure.

Fitness indicators presented in Table 4 should be compared with specific cut-off points. In a good factor structure, it is necessary to

Table 3 Factor loading and eigenvalue in final exploratory factor analysis for spiritual capital questionnaire

Row	Items	Extracted Factors			
		1	2	3	4
1	Question 1	0.54	-	-	-
2	Question 2	0.75	-	-	-
3	Question 3	0.78	-	-	-
4	Question 4	0.69	-	-	-
5	Question 5	0.8	-	-	-
6	Question 6	0.79	-	-	-
7	Question 7	0.65	-	-	-
8	Question 8	0.65	-	-	-
9	Question 9	-	0.64	-	-
10	Question 10	-	0.79	-	-
11	Question 11	-	0.69	-	-
12	Question 12	-	0.63	-	-
13	Question 13	-	-	0.7	-
14	Question 14	-	-	0.79	-
15	Question 15	-	-	0.69	-
16	Question 16	-	-	0.63	-
17	Question 17	-	-	-	0.75
18	Question 18	-	-	-	0.75
19	Question 19	-	-	-	0.42
20	Question 20	-	-	-	0.4
21	Eigenvalue	8.04	1.63	1.34	1.13
22	% explained variance	40.2	8.19	6.71	5.64
23	% Cumulative explained variance	40.2	48.39	55.1	60.74

have insignificant Chi-square (3rd column), chi-square/ degree of freedom ratio less than 3 (6th column), Goodness of Fit Index (GFI), Comparative Fit Index (CFI), and Normative Fit Index (NFI) higher than 0.9, and Root Mean Residual (RMR) less than 0.05 to 0.08 [45]. Given all the above, and according to

Table 5, for single-factor structures, nearly all fitness indicators are significantly far from cut-off points. On the contrary, cut-off points of fitness indicators are favorable for both 4-factor structure spiritual capital scale and 3-factor structure spiritual well-being questionnaire. In Table 5, correlations between

Table 4 Fit indices in confirmatory factor analysis for spiritual capital and spiritual well being questionnaires

Number of Factors	2χ	p	df	2/df χ	RMR	CFI	GFI	IFI	TLI	NFI
Spiritual Capital Questionnaire										
One factor	688.09	p<0.01	170	4.05	0.08	0/79	0.77	0.79	0.77	0.74
Four factors	0.004	p>0.05	2	0.002	0.001	1	1	1	1	1
Spiritual Well being Questionnaire										
One factors	1028.39	p<0.01	119	8.64	0.11	0.72	0.61	0.72	0.68	0.69
Three factors	0.001	p>0.05	0	0.001	0.001	1	1	1	1	1

Table 5 Correlation matrix of research variables

Components		1	2	3	4	5	6
Spiritual Capital	Attachment to God	-					
	Spiritual Value	0.55**	-				
	Spiritual Influence	0.51**	0.46**	-			
	Transcendental Relationship with God	0.61**	0.55**	0.51**	-		
Spiritual well being	Personal	0.43**	0.48**	0.52**	0.51**	-	
	Environmental	0.49**	0.45**	0.38**	0.56**	0.6**	-
	Transcendental	0.44**	0.49**	0.49**	0.48**	0.64**	0.56**

**p<01/0

components of spiritual capital and components of spiritual well-being are presented as evidence of convergent validity.

According to Table 5, there is a positive and significant correlation between all components of spiritual capital, including attachment to God, spiritual value, spiritual influence, and transcendental relationship with God, and personal, environmental, and transcendental spiritual well-being (p<0.01). These significant correlations suggest convergent construct validity in spiritual capital scale. It should be noted that criterion validity of spiritual capital scale and its components could not be assessed due to a lack of availability of previous studies. Yet, to make sure, components of spiritual capital and spiritual well-being were compared in terms of age groups, work history, marital status (single, married), position (managerial, non-managerial), and education levels, and no significant differences were found.

Discussion

In this study, conducted for designing and preliminary validation of spiritual capital scale, and concurrent validation with spiritual well-being questionnaire, a 20-item 4-factor scale was

developed. First, the 4 factors found, namely attachment to God, spiritual value, spiritual influence, and transcendental relationship with God, have significant content agreement with definitions and theories about spiritual capital [3-5, 10-19], especially with Islam’s teachings [13-15]. Spiritual capital is defined through three paradigms of spiritual capital as religious capital (with emphasis on spiritual and inner commitments to religious beliefs and behaviors), as giving meaning to life (with emphasis on meaning and spiritual life-giving to human), and as attachment to God almighty (with emphasis on trust, hope, and bonding with God), which were briefly discussed in the introduction.

The content of 4 factors found in the present study has a significant agreement with regarding spiritual capital as attachment to God. The content of spiritual value orientation and influence are also in line with regarding spiritual capital as a religious capital and a factor that gives life meaning and value (paradigms 1 and 2 in spiritual capital definitions). Factor structure of spiritual capital scale can be explained as this scale has a content focused on spiritual capital as attachment to God.

Accordingly, a positive correlation was found between 4 components of spiritual capital and 3 dimensions of spiritual well-being (personal, environmental, and transcendental). Generally, spiritual capital based on attachment and reliance on the unrivalled creator, covers both mental and emotional attachment and transcendental relationship with God (two components of attachment to God and transcendental relationship with God), and spiritual value and influence. Components of attachment to God and relationship with God are two relationship dimensions of spiritual capital through which individual obtains required mental and spiritual power and capital by devotion and relationship with God. On the other hand, spiritual value and influence, as other dimensions of spiritual capital, are practical dimensions of power and capital found through attachment to God and transcendental relationship with God. From this perspective, both spiritual capital attachment-relationship dimensions (attachment to God and transcendental relationship with God) and practical dimensions of spiritual capital (spiritual value and influence) are needed for individual's better spiritual well-being.

Since teachings of Islam were seriously considered during design and preparation of scale, items and components of spiritual capital scale are highly consistent with such teachings. In Islam, spirituality is emphasized by reliance on religious beliefs and behaviors on the one hand, and by focus on attachment, trust, and hope in the unrivalled creator on the other [9]. In fact, among Muslims, spirituality finds meaning through compliance with religious customs and rituals and consistent and sustained effort for attachment and bonding with the sole creator of the world according to inner intentions [14]. From this perspective, the divine eternal life-giving source, in an inseparable bond with human mental and physical power, bestows upon mankind an endless and vast power that is the very spiritual capital, and has a productive, dynamic, guiding and regulating nature [15]. This source both enhances psychological value of human and fills the aimless and desperate inner void. Therefore, with a holistic perspective

and with emphasis on Islamic teachings, the following definition can be proposed for spiritual capital: spiritual capital is the power, energy and mental-spiritual vitality that emerges from psychological bonding between human and the creator, and causes purposeful, optimistic behavior and patience and effort to achieve minor and major goals.

The next findings in the present study are concerned with the correlation between components of spiritual capital and spiritual well-being. The positive and significant correlation between them, firstly suggests highly convergent and favorable validity in spiritual capital scale and its components. Besides proposed psychometric conclusion for spiritual capital scale, positive correlations obtained between spiritual capital and spiritual well-being per se indicate that spiritual capital has function in enhancing spiritual well-being. This finding is indicative of agreement of the present study results and findings of other researchers [6,7,9]. The main mechanism of the link between spiritual capital and spiritual well-being is also particularly important. If spiritual well-being is regarded as sustained human effort to bond with the integrated system of existence, then, it can be asserted that spiritual capital that is the resulting energy, power and vitality from bonding between human and eternal power of existence and life (God almighty), through mental and spiritual experience, easily makes people more motivated in their effort for a more powerful and sustained bonding with the integrated system of existence, and thus provides the context for enhanced spiritual well-being. On the other hand, a glance at the 4 components of spiritual capital can be beneficial in explaining correlation between components of spiritual capital and spiritual well-being. In the first place, 4 components of spiritual capital (attachment to God, spiritual value, spiritual influence, and transcendental relationship with God) are considered a spiritual and psychological support for the individual to advance various aspects of his life. Conversely, personal, environmental and

transcendental spiritual well-being relies on its own inner feelings, the world around, and path of growth and transcendence. Accordingly, it can be asserted that spiritual capital is like a source from which individual draws energy and power, while the three dimensions of spiritual well-being can be considered as feelings resulting from reliance on components of spiritual capital (attachment to God, spiritual value, spiritual influence, and transcendental relationship with God). Therefore, when people feel that they have a bond with an immortal power, from which they draw power and energy, they will have greater inclination and readiness to experience internal consistency in meaning, goals and values of their lives (personal spiritual well-being), a sense of oneness with nature and concern about nature (environmental well-being), and preserving and improving their bond with the unrivalled creator (transcendental well-being).

Conclusion

The present study results showed that spiritual capital, in line with definition provided in spiritual capital paradigm as attachment and bonding with God [8, 9], consists of four factors, namely attachment to God, spiritual value, spiritual influence, and transcendental relationship with God. This 4-factor structure is highly in agreement with views proposed in the field of spiritual capital [13]. On the other hand, the present study results, as evidence of convergent construct validity showed a positive correlation between components of spiritual capital and spiritual well-being. This shows that spiritual capital can promote spiritual health and well-being. The main framework of results obtained is important in two areas. Firstly, designed and validated scale can be used in different work environments (even social settings) to assess level of spiritual capital. Secondly, application of the designed and proposed scale in the present study requires further studies to determine antecedents and outcomes of spiritual capital. Sufficient attention should be paid to study limitations in interpretation and generalization of the present study results. Firstly, since this study was conducted on adults, care should be taken in

its application to other age groups (adolescents and children). Also, since participants in this study were all men, care should be taken in generalization of results to women. Finally, due to lack of possibility of retest in spiritual capital scale and its components, no retest reliability assessment could be provided for this scale. Thus, retest reliability should be assessed and reported in future studies.

Furthermore, understanding Fisher's spiritual well-being questionnaire seems to be difficult for people with low literacy. In this study, to maintain integrity, these questions were not simplified. Thus, it is essential for future studies to design a spiritual well-being questionnaire with understandable statements and contents for people with low literacy.

Acknowledgements

We hereby thank all those that supported this study and paved the way for researchers

Contributions

Study design and analysis, Data collection: MG
Manuscript preparation: ZJ

Conflict of interest

"The authors declare that they have no competing interests."

References

- 1- Thomas D, Jeitschko TD, O'Connell S, Pecchenino RA. Having life more abundantly: Caring for the body, mind, and spirit. *Faith & Econom*2009; 53: 1–33.
- 2- Mac Lean CD, Susi B, Phifer N et al. Patient preference for physician discussion and practice of spirituality. *J Gen Intern Med*2003; 18(1): 38–43.
- 3- Kelso Wright P. Spiritual history assessment and occupational therapy: Students using the FICA [Thesis]. University of Puget Sound 2012; pp: 42.
- 4- Curlin FA, Lantos JD, Roach CJ, Sellergren SA, Chin MH. Religious characteristics of U.S. physicians: A national survey. *J Gen Intern Med*2005; 20(7): 629-34.
- 5- Cotton S, Puchalski CM, Sherman SN et al. Spirituality and religion in patients with HIV/ AIDS. *J Gen Intern Med*2006; 21(5): 5-13.
- 6- Spinale J, Cohen SD, Khetpal P et al. Spirituality, social support, and survival in hemodialysis patients.

- Clin J Am Soc Nephrol*2008; 3(6): 1620-27.
- 7- Trevino KM, Pargament KI, Cotton S et al. Religious coping and physiological, psychological, social, and spiritual outcomes in patients with HIV/AIDS: Cross-sectional and longitudinal findings. *AIDS Behav*2010; 14(2): 379-89.
- 8- Waetford CMR. A literature review of spiritual capital, developments of spirituality in the workplace, and contributions from a Māori perspective [Thesis]. University of Auckland: Aotearoa/ New Zealand 2007; pp: 57.
- 9- Yusuf MB. Effects of spiritual capital on Muslim economy: The case of Malaysia. *Res on Hum and Soc Sci*2011; 1(2): 23-40.
- 10- Noghiu A. Leadership and spiritual capital: Exploring the link between individual service disposition and organizational value. *Inte J Lead Stu*2010; 6(1), 67-85.
- 11- Iannaccone LR, Klick J. Spiritual capital: An introduction and literature review. Available at URL: www.metanexus.net/spiritual_capital/pdf/review.pdf 2007: 10. Accessed July 10, 2011.
- 12- Zohar D, Marshall I. Spiritual capital: Wealth we can live by. San Francisco: *Berrett-Koehler Publishing*2004.
- 13- Liu A. Measuring spiritual capital as a latent variable. Available at URL: <http://www.researchmethods.org/4capital.htm>2011: 14. Accessed July 11; 2011.
- 14- Farooqi AH. 2006. Islamic social capital and networking. *J Hum*2006; 22(2): 113- 25.
- 15- Hamdani SNH, Eatzaz A. Towards divine economics: Some testable propositions. *Pakistan Develop Revi*2002; 41(4): 607-26.
- 16- Stark R, Finke R. Acts of faith: Explaining the human side of religion. Berkeley, CA: University of California press; 2000.
- 17- Underwood LG, Teresi JA. The daily spiritual experience scale: Development, theoretical description, reliability, exploratory factor analysis, and preliminary construct validity using health-related data. *Ann Behav Med*2002; 24(1): 22-33.
- 18- Bailly N, Roussiau N. The daily spiritual experience scale (DSES): Validation of the short form in an elderly French population. *Can J Aging*2010; 29(2): 223-31
- 19- Ng SM, Fong TC, Tsui EY, Au-Yeung FS, Law SK. Validation of the Chinese version of underwood's D\ daily spiritual experience scale transcending cultural boundaries? *Int J Behav Med*2009; 16(2): 91-7
- 20- Puchalski C. Spiritual assessment in clinical practice. *Psychi Ann*2006; 36(3): 150-55.
- 21- King M, Speck P, Thomas A. The royal free interview for spiritual and religious beliefs: Development and validation of a self-report version. *Psychol Med*2001; 31(6): 1015–23.
- 22- Cole BS, Hopkins CM, Tisak J, Steel JL, Carr BI. Assessing spiritual growth and spiritual decline following a diagnosis of cancer: Reliability and validity of the spiritual transformation scale. *Psychooncology*2008; 17(2): 112-21.
- 23- Puchalski C, Romer AL. Taking a spiritual history allows clinicians to understand patients more fully. *J Palliat Med*2000; 3(1): 129-37.
- 24- Sulmasy D. Spiritual issues in the care of dying patients: It's okay between me and God. *JAMA*2006; 296(11): 1385-92.
- 25- Stewart C, Koeske GF. A preliminary construct validation of the multidimensional measurement of religiousness/spirituality instrument: A study of Southern USA. *Int J Psychol Relig*2009; 16(3): 181-96.
- 26- Paloutzian RF, Park CL. Handbook of the psychology of religion and spirituality. New York: Guilford press; 2013.
- 27- Johnson TJ, Sheets VL, Kristeller JL. Empirical identification of dimensions of religiousness and spirituality. *Ment Health Relig Cult*2008; 11(8): 745-67.
- 28- Yoon D, Lee EK. The impact of religiousness, spirituality, and social support on psychological well-being among older adults in rural areas. *J Gerontol Soc Work*2007; 48(3/4): 281-98.
- 29- Ellison CG, Fan D. Daily spiritual experiences and psychological well-being among US adults. *Soc. Indic Res*2008; 88(2): 247-71.
- 30- Taylor EJ, Mamier I, Bahjri K, Anton T, Petersen F. Efficacy of a self-study program to teach spiritual care. *J Clin Nurs*2009; 18(8): 1131-40.
- 31- Duffy R. Spirituality, religion, and work values. *J Psychol Theol*2010; 38(1): 1-17.
- 32- Campbell JD, Yoon DP, Johnstone B. Determining relationships between physical health and spiritual experience, religious practices, and congregational support in a heterogeneous medical sample. *J Relig Health*2010; 49(1): 3-17
- 33- Van Dyke CD, Glenwick DS, Cecero JJ, Kim SK. The relationship of religious coping and spirituality to adjustment and psychological distress in urban early adolescents. *Ment Health Relig Cult*2009; 12(4): 369-83.
- 34- Park CL, Edmondson D, Hale-Smith A, Blank TO. Religiousness/spirituality and health behaviors in younger adult cancer survivors: Does faith promote a healthier lifestyle? *J Behav Med*2009; 32(6): 582-91.

- 35- Han J, Richardson V. The relationship between depression and loneliness among homebound older persons: Does spirituality moderate this relationship? *J Relig Spiritual Soc Work*2010; 29(3): 218-36.
- 36- Bay PS, Ivy SS, Terry CL. The effect of spiritual retreat on nurses' spirituality: A randomized controlled study. *Holist Nurs Pract*2010; 24(3): 125-33.
- 37- Hall DE, Koenig HG, Meador KG. Episcopal measure of faith tradition: A context-specific approach to measuring religiousness. *J Relig Health*2010; 49(2): 164-78.
- 38- O'Connell KA, Skevington SM. Spiritual, religious, and personal beliefs are important and distinctive to assessing quality of life in health: A comparison of theoretical models. *Br J Health Psychol*2010; 15(4): 729-48.
- 39- Fisher JW. Spiritual health: its nature, and place in the school curriculum [dissertation]. The University of Melbourne, Melbourne, Australia 1998: 233.
- 40- Gomez R, Fisher JW. Item response theory analysis of the spiritual well-being questionnaire. *Pers Individ Differ*2005; 38(5): 1107-21.
- 41- Hassanzadeh R. Research methods for behavioral sciences. First edition; Tehran, Savalan Press; 2004.
- 42- Rattray J, Jones MC. Essential elements of questionnaire design and development. *J Clin Nurs*2007; 16(2): 234-43.
- 43- Preacher KJ, Zhang G, Kim C, Mels G. Choosing the optimal number of factors in exploratory factor analysis: A model selection perspective. *Multivariate Behav Res*2013, 48(1): 28–56.
- 44- Conway JM, Huffcutt AI. A review and evaluation of exploratory factor analysis practices in organizational research. *Org Res Meth*2003; 6(2): 147-68
- 45- Williams B, Brown T, Onsmann A. Exploratory factor analysis: A five-step guide for novices. *J Emerg Prim Heal Care*2010; 8(3): 1-13.
- 46- Hooper D, Coughlan J, Mullen MR. Structural equation modeling: Guidelines for determining model fit. *Elect J Bus Res Met*2008; 6(1): 53-60.