

The Santa Clara Strength of Religious Faith Questionnaire (SCSORF): A Validation Study on Iranian Muslim Patients Undergoing Dialysis

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Abstract The Santa Clara Strength of Religious Faith Questionnaire (SCSORF) is an often used and validated scale that is uncommonly utilized in culturally diverse populations. The purpose of this research investigation was to adapt the SCSORF for use among Iranian Muslim patients undergoing dialysis and to examine the reliability and validity of the scale among this population. A total of 428 patients (228 females, 200 males, M age = 52.2 years, SD = 10) were selected from five dialysis center in Tehran and Qazvin, Iran. A comprehensive forward–backward translation system was used for cross-cultural translation. Patients completed a baseline questionnaire obtaining demographic and clinical information as well as the SCSORF, the Age Universal Religious Orientation Scale (AUROS), the religious life inventory (RLI), and the Duke University religion index (DUREL). 2 weeks later, patients were asked to complete the SCSORF once again. Reliability of the SCSORF was examined using internal consistency and test–retest reliability. Convergent validity and factor structure using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were also examined. Cronbach’s α for the single construct of the SCSORF was 0.89 with adequate test–retest reliability measured over a

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2 week period. SCSORF scores were significantly correlated with AUROS, RLI and the DUREL. The EFA generated a single factor solution for the SCSORF while these results were confirmed by the CFA in an independent sample. Findings demonstrated that the SCSORF has favorable reliability, convergent validity, and divergent validity among Iranian Muslim patients undergoing dialysis and is recommended for use by clinicians (e.g., nephrologists) to measure strength of religious faith among patients.

Keywords SCSORF · Validity · Religion · Dialysis · Iran · Muslim

Introduction

Religion and spirituality are integral elements of human behavior that comprises organizational and non-organizational affiliation dimensions (Lukoff et al. 1995). Religious service attendance is considered an index of external or organizational religiosity while devoting to personal religious activities (e.g., prayer, meditation, beliefs, watching religious programs, reading sacred scripture such as the Bible) are recognized as potentially non-organizational or internal religiosity. Research suggests that religious affiliation influences their followers to avoid health damaging behaviors such as having multiple sexual partners, drinking excessive amount of alcohol, and using recreational drugs (Burdette et al. 2007; Cochran et al. 1988). Research also suggests that that religion has a positive impact on health (Aukst-Margetic and Margetic 2005; Coruh et al. 2005) and that both mental and physical health are positively impacted by religious beliefs (Aukst-Margetic and Margetic 2005; Cohen et al. 2010; Coruh et al. 2005; Koenig 2009). Regarding mental health benefits, religion can provide positive coping strategies when dealing with stress. Furthermore, religiosity has been found to be a protective factor against depression, anxiety, and drug abuse (Aukst-Margetic and Margetic, 2005; Coruh et al. 2005).

End stage renal disease (ESRD) is a failure of kidney function and is considered a serious chronic disease impacting many aspects of patient life (Pakpour et al. 2011, 2010). ESRD imposes many physical and mental stresses as well (Davison and Jhangri, 2010). Recently, studies have been shown the importance of the role of religion and spirituality in ESRD and their association with patient quality of life (Davison and Jhangri 2010, 2013; Finkelstein et al. 2007; Kimmel et al. 2003; Reig-Ferrer et al. 2012; Saffari et al. 2013a, b). For example, in a recent study religious beliefs served as a positive coping mechanism for patients with ESRD managing depression and the burdens of their illness as well as improved social support and quality of life (Patel et al. 2002).

Several instruments have been developed to measure religiousness such as the Systems of Beliefs Inventory (SBI-15) (Holland et al. 1998), the Duke University religion index (DUREL) (Koenig et al. 1997) and the Santa Clara Strength of Religious Faith Questionnaire (SCSORF) (Plante and Boccaccini 1997a). These measures are brief, reliable, and valid ways to assess religiousness among diverse religious groups. However, the SCSORF measures strength of religious faith which is a construct not assessed by either the DUREL or the SBI-15. Strength of religious faith has been found to be associated with psychological functioning (Plante et al. 2000), coping with stress among immigrants (Plante et al. 1995), and recovering from substance abuse with better coping, resiliency to stress, and optimism (Pardini et al. 2000). The SCSORF was developed in 1997 and it has been used in many research studies (Avants et al. 2003; Plante 2010; Sherman et al. 1999;

2001a). Furthermore, psychometric properties of the SCSORF have been established among college students and cancer patients (Plante and Boccaccini 1997a; Sherman et al. 1999, 2001a). However, these studies used participants from Europe and America and there are no studies on this scale from Asia to date. The SCSORF has not been used among Muslims and therefore applicability of the SCSORF for Muslims is unknown. The second-largest religion in the world following Christianity, is Islam and most Muslims resides in Asia (Kettani 2010). The majority of Iranians are Muslims and speak Persian (Ebrahimejad 2002; Kettani 2010). Therefore, it is necessary to adopt a valid measure to assess strength of religious faith among Muslims. The study was aimed to translate and culturally adapt the SCSORF for use among Iranian Muslims patients undergoing dialysis.

Methods

Religion, defined by Walsh, is “an internal set of values- a sense of meaning, inner wholeness, and connection with others” (Walsh 1998). The religion’s dimensions can direct human behavior in several important ways. Organizational and structural dimensions of religion can assist in the internationalization process of religious norms, can create a positive model for standard and ethical behavior, and can promote social networks among fellow congregants. These activities and roles can help direct religious people to choose healthy behaviors and minimize harmful behaviors such as alcohol consumption (Cochran et al. 1988). Non-organizational dimensions of religion (e.g., prayer) can also influence health behaviors (Levin and Taylor 1997). For example, a recent study found that personal religious behaviors were associated with positive alcohol choices among college students (Ellison et al. 2008). However, it is important to mention that the concepts of spirituality and religion often overlap but are separate and distinct. Spirituality is defined as “an internal set of values- a sense of meaning, inner wholeness, and connection with others”(Walsh 1998). Spirituality is a boarder concept than religion and regarded as an individual phenomenon and experiential process. Characteristics of spirituality comprise personal transcendence, supraconscious sensitivity, meaningfulness and purpose in living and values (Emblen 1992). Therefore, spirituality is more abstract concept than religion and its measurement is often challenging as well (Cheever et al. 2005). Religion is typically reserved for engagement and affiliation with a larger organizational structure and tradition such as Islam, Christianity, and so forth.

This cross-sectional study was conducted from February 2012 to October 2012. Participates were patients maintained on hemodialysis for ≥ 3 months and had been referred to dialysis centers for treatment. Patients were recruited from 6 dialysis centers in Tehran ($n = 4$) and Qazvin ($n = 2$). The inclusion criteria for the study included patients who were 18 years or older, were maintained on hemodialysis for ≥ 3 months, were clinically in stable condition, and had normal cognitive function (Crum et al. 1993) [i.e., Mini-mental state examination (MMSE) scores ranging from 27 to 30], being able to understand Persian, and agreeing to participate in the study.

Measures

Demographic Data, Clinical Characteristics and Laboratory Data

Information regarding demographic characteristics was obtained using an author developed self-report questionnaire. This questionnaire included items assessing age, gender, marital

status, employment status, years of education, and health accommodations. In addition to the demographic information, laboratory data obtained from routine analyses undertaken at the time of the study were included as well. This included information regarding hemoglobin (Hb), serum albumin and Kt/V as well as particular clinical characteristics such as weight, height, cause of kidney disease, and duration of hemodialysis.

Santa Clara Strength of Religious Faith Questionnaire (SCSORF)

The SCSORF is a 10-item self-report questionnaire designed to measure strength of religious faith (e.g., “I look to my faith as a source of inspiration”). The scale focuses on internal rather than external religiousness in terms of using test items that focus on internal religious perspectives relative to attendance to religious services for example. This measure was developed by Plante and Boccaccini and has been used widely in diverse population including college students (Plante and Boccaccini 1997a, b; Plante et al. 2002, 1999), breast cancer and cancer patients receiving bone marrow transplantation (Sherman et al. 1999; Sherman et al. 2001a), HIV cocaine-using patients (Avants et al. 2003) and patients with alcoholism (Pardini et al. 2000). All items scored on a Likert-type scale from 1 (strongly disagree) to 4 (strongly agree) and total score ranged from 10 to 40. Higher scores indicate stronger strength of faith. The original study revealed that the SCSORF was highly valid and reliable among college students (Plante and Boccaccini 1997a).

Age Universal Religious Orientation Scale (AUROS)

The AUROS is a self-report questionnaire assessing religiosity. It is a revised version of the Religious Orientation Scale such that both the Intrinsic and Extrinsic subscales of religious orientation were retained. The AUROS includes 20 items and with each item using a 5-point Likert scale from 1 “strongly disagree” to 5 “strongly agree.” The items measure religiosity by examining two dimensions that include intrinsic (I) and extrinsic (E) religiosity. The original study indicated relatively acceptable internal consistency for the intrinsic and extrinsic dimensions. Cronbach’s alpha for the current study sample was 0.91 for intrinsic religiosity and 0.79 for extrinsic religiosity.

Religious Life Inventory (RLI)

The RLI was developed originally by Batson et al. to assess religious orientations (Batson et al. 1993; Batson and Schoenrade 1991). The RLI is based on Allport’s theory that faith may be intrinsically, extrinsically, or quest motivated (Allport and Ross 1976). It is a 32-item questionnaire that comprises of 3 subscales including extrinsic (11 items), intrinsic (9 items) and quest (12 items) dimensions of religiosity. Participants respond to the items on a 9-point Likert scale ranging from “strongly agree” to “strongly disagree”.

Duke University Religion Index (DUREL)

The DUREL was originally developed by Koenig et al. to measure religiosity across populations (Koenig et al. 1997). The DUREL is a 5-item measure and comprised 3 dimensions including: organizational religiosity (1 item), non-organizational religiosity (1 item), and intrinsic religiosity (3 items). Both organizational and non-organizational religiosity were scored on a 6-point Likert-type scale while intrinsic religiosity is

scored on a 5-point Likert-type scale. To ease interpretation, The DUREL scores were reversed scored such that higher scores indicate higher levels of religiosity. The DUREL has been translated into several languages including Persian. A study on Iranian Muslims revealed that the Persian version of the DUREL is highly valid and reliable (Saffari et al. 2013c).

Mini Mental Status Examination (MMSE)

Since cognitive impairment is prevalent among patients undergoing dialysis, it was necessary to screen for dementia among these patients (Dahbour et al. 2009). The MMSE is a standard and often used tool that takes 10–20 min to conduct. Studies have shown that the MMSE may be related to age and level of education (Crum et al. 1993). The MMSE is translated into several languages including Indian, French, Arabic, and Chinese. Research has found that the Iranian version of the MMSE was found to be valid and reliable (Ansari et al. 2010).

Cultural Adaptation

The aim of the study translation procedures were to produce equivalency of content between the source language (Persian) and the target language (English). Translation procedures were based on widely used guidelines for the process of cross-cultural adaptation of self-report measures (Beaton et al. 2000; Guillemin et al. 1993; Wild et al. 2005). The SCSORF was originally published in English and was then translated into Persian by two bilingual translators. These translators were Iranian and fluent in English and Persian languages. The translators performed independently. However, the translators faced a problem in terms of substitution of a term. The word, “church,” was replaced with the word, “mosque,” to improve cultural adaptation for Muslims. Afterwards, the translators along with the project manager compared their translations. At this stage, discrepancies were resolved to reach a unified Persian version of the scale. The version of the SCSORF was then translated back into English language by two other translators who were unaware of the original version. Then, the project manager revised these translations and compared them with the original version to eliminate any discrepancies. Next, a panel of 42 dialysis patients diverse in regards to age, gender, and educational background was assembled to clarify and refine the translated version. This step was performed to seek alternative wording and to check understandability, interpretation, and cultural relevance of the translated version. The results of this task were reviewed by the project manager and refined accordingly. Finally, the final version of the SCSORF was administered to 428 patients undergoing dialysis to evaluate psychometric properties.

Procedure

Participants completed the questionnaires in the dialysis centers. The questionnaires were distributed to the patients by two trained nurses. Clinical and laboratory data were also collected at the same time. The patients were asked to complete the same questionnaire 2 weeks after the initial assessment. All patients gave their oral and written consent before participating in the study. The study protocol was approved by the ethical committee of the Qazvin University of Medical Sciences (QUMS).

Data Analysis

Kolmogorov–Smirnov was conducted to assess normality of the data distribution. Reliability of the Iranian version of the SCSORF was tested by internal consistency and test–retest reliability. Internal consistency was analyzed using Cronbach’s α . The Cronbach’s α of 0.70 or greater indicate acceptable internal consistency among items (Nunnally 1978). Additionally, Pearson correlation coefficients were calculated to examine the test–retest reliability of the SCSORF. To assess stability (reproducibility) of the SCSORF, the test–retest method of reliability using the intra-class correlation coefficient (ICC) was applied. The retest procedure was conducted 2 weeks after the initial test of the SCSORF. ICC values higher than 0.70 are considered acceptable (Shrout and Fleiss 1979).

Construct validity was assessed using correlation Pearson’s product moment correlations among the SCSORF, AUROS, RLI and the DUREL. The construct validity was further examined by computing the intercorrelations among the SCSORF items (Pedhazur and Schmelkin, 1991).

In order to assess factor structure of the SCSORF, the full sample of patients were randomly split into two equal samples (Sample 1: $n = 214$, Sample 2: $n = 214$) using the random sample generation procedure offered by SPSS 18. Demographic characteristics, clinical data, and laboratory information of the two samples were compared to investigate potential differences between the two samples. For sample 1, exploratory factor analysis (EFA) was performed while confirmatory factor analysis (CFA) was used for sample 2. The aim of the EFA procedures was to generate an appropriate model and find latent variables for the given model. It is typically recommended to conduct the EFA procedure as a prerequisite to the CFA when there is no theoretical supposition. Therefore, the CFA was used for the validity of the factor structure obtained by the EFA (Haig 2005).

For the EFA, Principal Components Analysis (PCA) with a Varimax rotation and a scree test were used to select factors for retention. Some preliminary analyses were performed to ensure accuracy of results the EFA. Sampling adequacy was checked using the Kaiser–Meyer–Olkin (KMO) measure. It is recommended that a KMO value of ≥ 0.70 indicates acceptable sampling adequacy. Barlett’s test of sphericity was also tested to explore whether the correlation was statistically different from zero by comparing the correlation matrix and identity matrix. A significant result of the Barlett’s test of sphericity is consider acceptable and indicates variables to be correlated. The number of components was determined when eigenvalue exceeded 1.0 (Bowling 2002).

To investigate how well the results arose from the EFA fits, a CFA was conducted on the sample 2. Weighted least squares were used for estimation method with the asymptotic covariance matrix.

The fit of data to the model was analyzed using the following indices: Chi Square (χ^2), the root-mean-square error of approximation (RMSEA), comparative fit index (CFI), the normal fit index (NFI), goodness-of-fit index (GFI) and adjusted goodness-of-fit (AGFI) index. However, the Chi Square is not an intact index and is sensitive to sample size and with increasing sample size (generally above 200), the χ^2 statistic has a tendency to indicate a significant probability level. Contrary to this fact, the χ^2 statistic tends to be non-significant when the sample size is low (generally above 100). The recommended value for the CFI, NFI, GFI and AGFI is ≥ 0.90 . A value of ≥ 0.080 for the RMSEA is considered adequate model fit (Schumacker and Lomax 2004).

Table 1 Demographic characteristics and clinical variables of two half samples ($n = 428$)^a

| Variables | Half sample 1 ($n = 214$) | Half sample 2 ($n = 214$) | Total ($n = 428$) | <i>p</i> value |
|--------------------------------------|--------------------------------|--------------------------------|------------------------|----------------|
| Age (M,SD) | 51.78 ± 10.42 | 52.65 ± 9.76 | 52.21 ± 10.09 | 0.37 |
| Sex | | | | 0.92 |
| Male | 101 (47.2 %) | 99 (46.3 %) | 200 (46.7 %) | |
| Female | 113 (52.8 %) | 115 (53.7 %) | 228 (53.3 %) | |
| Marital status | | | | 0.28 |
| Single | 34 (15.9 %) | 25 (42.4 %) | 59 (13.8 %) | |
| Married | 116 (54.2 %) | 135 (53.8 %) | 251 (58.6 %) | |
| Widowed | 62 (29.0 %) | 53 (24.8 %) | 115 (26.9 %) | |
| Divorced | 2 (0.9 %) | 1 (0.5 %) | 3 (0.7 %) | |
| Occupation | | | | 0.32 |
| Employed | 24 (11.2 %) | 32 (15.0 %) | 56 (13.1 %) | |
| Unemployed | 190 (88.8 %) | 182 (85.0 %) | 372 (86.9 %) | |
| Years of education | 8.16 ± 4.52 | 8.44 ± 4.66 | 8.30 ± 4.59 | 0.33 |
| Location | | | | 0.51 |
| City | 201 (93.9 %) | 205 (95.8 %) | 406 (94.9 %) | |
| Rural | 13 (6.1 %) | 9 (4.2 %) | 22 (5.1 %) | |
| Duration of hemodialysis (months) | 48.46 ± 46.86 | 50.33 ± 53.65 | 49.39 ± 50.32 | 0.70 |
| Body Mass Index (BMI) | 25.47 ± 3.84 | 25.16 ± 3.92 | 25.32 ± 3.88 | 0.41 |
| Kt/v [(BUNpre-BUNpost)/BUNpre] × 100 | 1.34 ± 0.33 | 1.30 ± 0.29 | 1.32 ± 0.31 | 0.20 |
| Serum albumin (g/dl) | 3.96 ± 0.65 | 3.90 ± 0.67 | 3.93 ± 0.66 | 0.33 |
| Hemoglobin (g/dl) | 11.09 ± 1.69 | 10.92 ± 1.80 | 11.01 ± 1.75 | 0.37 |
| Cause of kidney disease | | | | 0.37 |
| Diabetes mellitus | 109 (50.9 %) | 104 (48.6 %) | 213 (49.8 %) | |
| Hypertension | 70 (32.7 %) | 70 (48.6 %) | 140 (32.7 %) | |
| Glomerulonephritis | 20 (9.3 %) | 18 (8.4 %) | 38 (8.9 %) | |
| Other | 15 (7.0 %) | 22 (10.3 %) | 37 (8.6 %) | |

^a continuous variables were compared using independent *t* test while categorical variable using Chi Square Test

Results

The characteristics of the participants are shown in Table 1. The mean age for full sample of the patients was 52.2 (SD = 10 years). Of these patients, 228 (53.3 %) were women. Most of the participants were married and living in the two target cities. The median duration of dialysis was 49 months (range 3–120). There were no statistical differences between the two samples (i.e. two split-half samples) on a variety of demographics, clinical and laboratory. The result of the Kolmogorov–Smirnov test revealed that DUREL, SCSORF, AUROS and RLI distributed normally ($p > 0.05$).

The average time taken to complete the SCSORF was 6.3 min (SD = 4.2).

Cronbach's α for the single construct of the SCSORF was acceptable and exceed the recommended threshold of 0.70 (0.89).

The stability of the SCSORF over time was tested on the full sample of patients ($n = 428$). The ICC for the total score was 0.87 and thus superior to 0.70. Furthermore,

Table 2 Intercorrelations among SCSORF Items for patients undergoing dialysis ($n = 428$)

| Scale | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | SCSORF total score |
|--------------------|---|------|------|------|------|------|------|------|------|------|--------------------|
| 1 | – | 0.69 | 0.74 | 0.66 | 0.55 | 0.68 | 0.64 | 0.53 | 0.68 | 0.53 | 0.75 |
| 2 | | – | 0.69 | 0.67 | 0.59 | 0.70 | 0.68 | 0.56 | 0.75 | 0.48 | 0.73 |
| 3 | | | – | 0.89 | 0.61 | 0.81 | 0.66 | 0.60 | 0.73 | 0.64 | 0.84 |
| 4 | | | | – | 0.51 | 0.71 | 0.64 | 0.62 | 0.63 | 0.61 | 0.80 |
| 5 | | | | | – | 0.42 | 0.48 | 0.44 | 0.41 | 0.47 | 0.48 |
| 6 | | | | | | – | 0.73 | 0.55 | 0.77 | 0.71 | 0.82 |
| 7 | | | | | | | – | 0.68 | 0.85 | 0.70 | 0.75 |
| 8 | | | | | | | | – | 0.72 | 0.63 | 0.70 |
| 9 | | | | | | | | | – | 0.68 | 0.77 |
| 10 | | | | | | | | | | – | 0.74 |
| SCSORF total score | | | | | | | | | | | – |

* All $p < 0.01$

Intercorrelations of 10 items of the SCSORF. Categories of the correlations are; small (0.10), medium (0.30), and large (0.50)

Table 3 Correlations for SCSORF, AUROS and RLI

| | SCSORF total score OR |
|-------------------|-----------------------|
| OR | 0.49 |
| NOR | 0.54 |
| Intrinsic | 0.57 |
| DUREL total score | 0.73 |
| AUROS | |
| Extrinsic | 0.57 |
| Intrinsic | 0.77 |
| RLI | |
| External | 0.60 |
| Internal | 0.74 |
| Quest | 0.66 |

RLI religious life inventory, *AUROS* age universal religious orientation scale

Pearson correlation coefficients of the two SCSORF measurements indicated that the SCSORF scores were stable/reproducible over times ($r = 0.97$).

Construct validity was supported by the intercorrelations shown in Tables 2 and 3 between the SCSORF, AUROS, RLI and the DUREL. All the SCSORF items were correlated significantly with each other (r ranged from 0.41 to 0.85, $p < 0.05$) and also with the total score (r ranged from 0.41 to 0.85, $p < 0.05$). Furthermore, as expected, the SCSORF was correlated strongly with DUREL subscales as well as the total score (r ranged from 0.49 to 0.73, $p < 0.01$).

The SCSORF's total score was significantly correlated with the intrinsic and extrinsic religious orientation using the AUROS's subscales (r ranged from 0.57 to 0.77, $p < 0.01$).

There were also significant correlations between the SCSORF's total score and measure of the extrinsic, intrinsic and quest orientations of religiosity (RLI) demonstrating convergent validity of the SCSORF (r ranged from 0.60 to 0.74, $p < 0.01$).

Table 4 Factor loadings from the principal component analysis for the SCSORF ($n = 214$)

| | Factor loading |
|-----|----------------|
| Q1 | 0.85 |
| Q2 | 0.89 |
| Q3 | 0.91 |
| Q4 | 0.87 |
| Q5 | 0.80 |
| Q6 | 0.92 |
| Q7 | 0.92 |
| Q8 | 0.86 |
| Q9 | 0.91 |
| Q10 | 0.87 |

To evaluate the factor structure of the SCSORF, an EFA was performed. Results of EFA with rotations are presented in the Table 4. All of the prerequisites of the EFA were confirmed before considering the EFA results. Bartlett's test of sphericity was statistically significant ($\chi^2 = 3.74$, $df = 45$, $p < 0.0001$) and indicated a correlation between the variables. The KMO measure of sampling adequacy was 0.93 demonstrating acceptable sampling adequacy to carrying out a PCA. Results that arose from the EFA and the scree plot suggested a single component solution for sample 1. Single factor with eigenvalue greater than 1.0 was extracted which accounted for 78.37 % of the variance. Item loadings ranged from 0.80 to 0.92 (see Table 4).

The above mentioned single structure of the SCSORF was tested using the CFA in a new sample of patients undergoing dialysis (sample 2). This model showed good fit to the data $\chi^2 = 67.38$ ($df = 35$, $p = 0.001$); GFI = 0.96; AGFI = 0.90, CFI = 0.99, NFI = 0.99; RMSEA = 0.074. Figure 1 shows the results of CFA. The standardized regression coefficients ranged from 0.16 to 0.92.

Discussion

This is the first study evaluating the psychometric properties of the SCSORF among Iranian Muslim patients undergoing dialysis. In general, this study showed that the Persian version of the SCSORF was highly reliable and valid for use among patients undergoing dialysis. All patients found the Persian SCSORF to be highly understandable and acceptable. The SCSORF was internally consistent and similar to relevant studies which suggest a range of values between 0.94–0.97 and 0.90–0.96 for Cronbach Alpha and split-half reliability, respectively (Plante and Boccaccini 1997a, b; Plante et al. 1999, 2002). The SCSORF is used scarcely in clinical samples however; in a study on breast cancer revealed that the SCSORF had highly homogeneous items (i.e. internal consistency) (Sherman et al. 2001a). Similar results were found in patients receiving bone marrow transplant (Sherman et al. 1999).

The constancy of the SCSORF scores over time was assessed using a test–retest method. The results indicated that the Persian version of the SCSORF was highly stable over the short time interval. Our results were in accordance with other studies as well (Plante et al. 2002; Sherman et al. 2001a).

The pattern of correlations between the SCSORF scores, the AUROS, the RLI and the DUREL revealed that the SCSORF is closely correlated with other quality religious faith

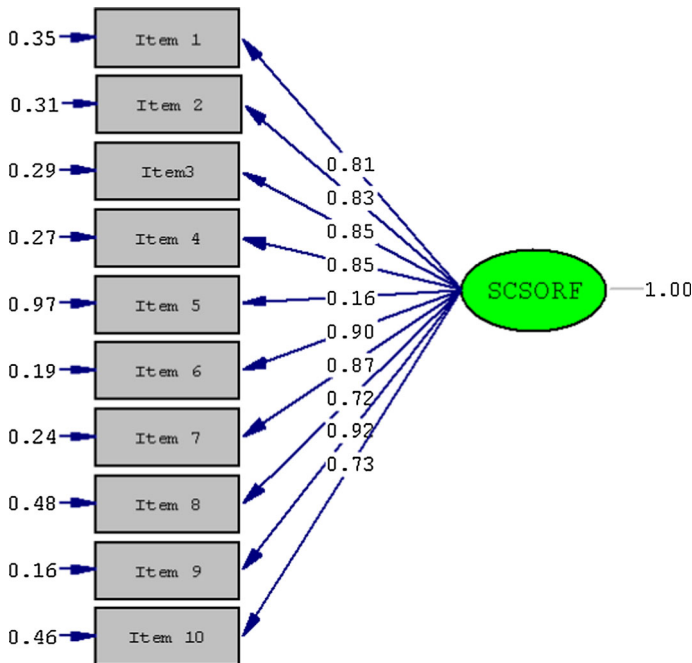


Fig. 1 Confirmatory factor analysis showing the one-factor structure of the SCSORF among Iranian patients undergoing dialysis. Fit of the data: $\chi^2 = 67.38$ ($df = 35$, $p = 0.001$); GFI = 0.96; AGFI = 0.90, CFI = 0.99, NFI = 0.99; RMSEA = 0.074

instruments. This supported our expectation that the SCSORF is convergently valid. In this study, the strongest correlations were found between the SCSORF and internal religiosity. The original version of the SCSORF did not find a significant correlation between the SCSORF, the AUROS extrinsic dimension and the RLI external scale for younger participants (Plante and Boccaccini 1997a). A potential reason is that age may moderate the SCSORF and extrinsic religiosity relationship. Elderly people spend more time to mourn the death of their spouse, friends, family members, and colleagues than typically for younger people. Therefore, it is likely that older people may be more involved in religious related social activities than younger persons since religiosity and spirituality tend to increase as people age. (Plante and Boccaccini 1997a).

The factor analyses suggested that a one-factor solution was meaningful and offered a simple structure. The factor structure of the SCSORF was not measured in the original study (Plante and Boccaccini 1997a). However, our results are consistent with previous studies with the English version of the SCSORF that have also reported single-factor solution (Lewis et al. 2001; Plante et al. 2002; Storch et al. 2004).

The current study had several important limitations. First, the study comprised of a convenience sample of patients undergoing dialysis who had been referred to dialysis centers. Therefore, the generalizability of the results to other clinical and non-clinical samples is in question. Furthermore, the study included patients who were older with mean ages in the 50 s. The applicability of the SCSORF for patients who are younger is unknown. The stability of the SCSORF was examined within a relatively short time frame. Future studies should assess score changes on the SCSORF over a longer time frame.

Overall, these findings demonstrate that the SCSORF has favorable reliability, convergent validity, and divergent validity among Iranian Muslim patients undergoing dialysis and it is recommended for use by clinicians (perhaps especially nephrologists) to measure strength of religious faith among their patients.

Conflict of interest None.

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