

Existential and Religious Dimensions of Spirituality and Their Relationship with Health-Related Quality of Life in Chronic Kidney Disease

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Background and objectives: Spiritual aspects of health-related quality of life (HRQoL) in patients with chronic kidney disease (CKD) have not been fully assessed. This study described the religious and existential dimensions of spirituality of patients with CKD, provided evidence to support construct validity of the ESRD Spiritual Beliefs Scale, and examined the relationship between constructs of spirituality and HRQoL.

Design, setting, participants, & measurements: This was a prospective, cohort study of 253 predominantly white (81.5%) prevalent patients with stage 4 or 5 CKD or receiving long-term dialysis. Participants completed the Kidney Dialysis Quality of Life Short Form, the ESRD Spiritual Beliefs Scale, the Spiritual Perspective Scale, and the Spiritual Well-Being Scale.

Results: Three subscales of ESRD Spiritual Beliefs Scale were highly correlated with other measures of religiosity and weakly correlated with existential well-being. Mean of three subscales of ESRD Spiritual Beliefs Scale and overall Spiritual Perspective Scale scores were 8.8 to 9.9 and 3.3, respectively. Mean $\pm$ SD existential and religious scores of the Spiritual Well-Being Scale were 42.9 ± 8.8 and 38.8 ± 11.4 , respectively. Negligible correlations existed between religious scores and HRQoL. Conversely, existential well-being was moderately associated with several domains of HRQoL.

Conclusions: Our study supports construct validity of the ESRD Spiritual Beliefs Scale as a measure of religiosity. It did not seem to capture the existential dimension of spirituality. The existential domain of spirituality was more clinically relevant to patients in this study and had a greater impact on HRQoL compared with measures of religiosity.

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Treatments aimed at minimizing morbidity and mortality in ESRD, such as more intensive dialysis, are often ineffective. (1,2) As a result, maximizing health-related quality of life (HRQoL) is recognized as an important therapeutic objective (3–5). HRQoL is also a predictor of morbidity and mortality in ESRD (6). The Kidney Disease Outcomes Quality Initiative (K/DOQI) now recommends that HRQoL issues be monitored for all patients with ESRD (7).

HRQoL has traditionally been defined by physical, emotional, social, and functional domains, but researchers have argued that spirituality is an important dimension of HRQoL. Spirituality was included in the World Health Organization's HRQoL instrument after people in focus groups around the world reported that spirituality was an important component of their HRQoL (8); however, most of the commonly used HRQoL instruments do not include spirituality.

The increasing attention to spiritual well-being in health care is in part a result of its association with health benefits, including psychosocial adjustment to illness and lower use of health

services (9). Spirituality is also a recognized core component of comprehensive palliative care. Chronic kidney disease (CKD) imposes on patients numerous physical and psychosocial stresses that challenge their view of the world, themselves, and their future. Given the existential nature of these concerns, spiritual factors may play a major role in adaptation to their illness and HRQoL. Recent research supports the importance of spirituality to patients with advanced CKD (10–15) and that spirituality may be an important determinant of their HRQoL (4,16,17).

The literature defines spirituality as distinct from religion. Religion involves institutionally sanctioned beliefs and activities of a particular faith group (18,19). It can serve as a nurturer and a channel of expression for spirituality. Conversely, spirituality is seen to be “more basic” than religiosity and relates to transcendent values and the ways in which people find purpose in life. This existential construct of spirituality involves the need for finding satisfactory answers to questions about the meaning of life, illness, and death (20,21); it may or may not involve a belief in a higher being or organized religion (22,23). There has been a defection from organized religion among many baby boomers to a more personal search for spiritual fulfillment (24).

The dimensions of spirituality that are most important to patients with advanced CKD and how these affect HRQoL have not been fully examined. The purpose of this study was to

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describe the various dimensions of spirituality and spiritual well-being in patients with CKD, provide evidence to support construct validity of the recently developed ESRD Spiritual Beliefs Scale (17), and examine the relationship between the various constructs of spirituality and HRQoL.

Materials and Methods

This is a prospective, cohort study of prevalent patients with CKD from a Canadian university-affiliated renal program. Ethics approval was obtained from the University of Alberta Research Ethics Board. Patients who were aged ≥18 years; had CKD; either were receiving long-term dialysis or had a diagnosis of stage 4 or 5 CKD; were enrolled in the predialysis renal insufficiency clinic; and were cognitively able to complete the questionnaire in English, with or without the use of a translator, were eligible to participate. This involved peritoneal dialysis (PD), home hemodialysis (HD), in-center HD, and rural satellite HD patients.

After providing written informed consent, patients self-completed a battery of surveys. Patients were permitted to complete the survey while on dialysis, in clinic, or at home and return them when they next presented for treatment. The self-complete administration was selected to minimize the bias of social desirability in responses that is commonly seen when using an interview format. The study coordinator was available for patients who required help with the survey and to answer questions as they arose.

Measures

The Kidney Dialysis Quality of Life Short Form (KDQOL-SF), Version 1.3 (25) was used to measure HRQoL. This measure incorporates kidney disease-specific items as well as the SF-36 as the generic core and a single-item measure of HRQoL (26). This single item has been shown to predict mortality in dialysis patients (6).

The ESRD Spiritual Beliefs Scale (16) is a nine-item survey developed by the Robert Wood Johnson Foundation Peer Work Group on End-of-Life Care for ESRD to measure the perceived role of spirituality for patients for ESRD and to identify their support network. Each item is scored on a scale from 1 to 10. The first four items (Table 1) deal with patients' spirituality and compose three separate subscales. Questions 1 and 2 measure perceived importance of faith and are combined to give a "spirituality score." Questions 3 and 4 measure perceived importance of attending religious services and are combined to give a "religious involvement" score. Last, questions 2 and 4 are combined to form a measure of the use of religion and faith in coping with kidney disease ("religious coping"). The last five items compos the Support Network subscale and asks patients from whom they obtain their social support: Family or friends; other patients; social worker or therapist; a minister, priest, rabbi, cleric, or religious person; or a health professional.

The Spiritual Perspective Scale (SPS) (27), formerly called the Reli-

gious Perspective Scale, is a 10-item survey with each item scored on a scale from 1 to 6. Six items measure the perceived importance of spirituality to an individual (spiritual beliefs subscale [SBL]), and four items determine the extent to which they engage in spiritually related interactions (spiritual behavior subscale [SBH]). The SPS has been shown to be reliable and relevant in terminally ill patients and patients with ESRD (27,28).

The Spiritual Well-Being Scale (SWBS) (29) is a 20-item scale designed to evaluate spiritual well-being. It measures both religious and existential constructs of spirituality and yields separate scores on the basis of 10 items each for religious well-being (RWB) and existential well-being (EWB). The RWB subscale assesses the degree to which individuals experience a satisfying relationship with God. The EWB subscale measures the degree to which individuals experience satisfying relationships with others and the degree of life satisfaction and purpose. All items are responded to on a scale from 1 to 6, ranging from "strongly agree" to "strongly disagree." This scale is not based on a specific religious or ideological orientation and has been used for patients with a chronic illness, including those with ESRD (4,28,30,31). Validation studies indicate that the RWB and EWB subscales measure two distinct constructs of spirituality (32).

Statistical Analysis

The three subscales of the ESRD Spiritual Beliefs Scale were computed by summing their respective two items with a possible high score of 20. Scoring of the two subscales of the SPS (SBL and SBH) was computed by averaging their representative six and four items, and overall SPS was computed by averaging all 10 items. The possible high score for both subscales of SPS and overall SPS was 6. Scoring of the two subscales of the SWBS (RWB and EWB) was accomplished by summing their representative 10 items each for a possible high score of 60. The KDQOL and SF-36 were scored using the recommended methods for the KDQOL and RAND-36 (33). The physical health composite score and the mental health composite score were calculated for the RAND-36. Descriptive statistics were computed to examine all of these scores. Pearson correlation analysis was performed to examine the association between spiritual and HRQoL measures. Multiple linear regression analyses were conducted to describe the associations between the various dimensions of spirituality and HRQoL after controlling for sociodemographic variables. A strong correlation was defined as >0.50, a moderate correlation was defined as 0.35 to 0.50, a weak correlation was defined as 0.20 to 0.34, and a negligible correlation was defined as <0.20 (34).

Results

Of 342 patients approached, 253 (74.0%) consented to participate. Participants were predominantly white (81.5%), 9.1% were American Indian or Alaska Native, 2.4% were Asian, and

Table 1. ESRD Spiritual Beliefs Scale

Question	ESRD Spiritual Beliefs Scale First Four Questions
1	For me, faith or spiritual belief (that is, what gives life ultimate meaning and value) is: 1, not important to 10, very important
2	For me, in adjusting to kidney failure, faith or belief is: 1, not helpful to 10, very helpful
3	For me, attending religious services is: 1, not worthwhile to 10, very worthwhile
4	For me, in adjusting to kidney failure, attending religious services is: 1, not worthwhile to 10, very worthwhile

1.2% were black. Although 32% had yet to start long-term dialysis, comorbidity scores were high with a mean $\pm$ SD Charlson Comorbidity Index (CCI) (35) of 8.7 ± 2.9 (Table 2). Predialysis patients were older and had more comorbidity than dialysis patients. The HD subgroup was composed of more women and single patients compared with PD and predialysis patients. Spirituality and HRQoL scores are compiled in Tables 3 and 4, respectively. Mean scores ranged from 8.8 to 9.9 for all three ESRD Spiritual Beliefs Scale subscales and 2.9 to 3.5 for the two SPS subscales and the overall SPS. Response variability was great: 15.0 to 17.0% of patients had maximum scores for the three subscales of the ESRD Spiritual Beliefs Scale. Mean $\pm$ SD scores for EWB and RWB of spiritual well-being were 42.9 ± 8.8 and 38.8 ± 11.4 , respectively. There were no differences in spirituality scores among PD, HD, and predialysis patients. HD patients had lower scores compared with predialysis and PD patients in three subscales of the KDQOL: Symptom/problems ($P = 0.002$), effects of kidney disease ($P = 0.012$), sleep and ($P = 0.039$).

Correlations between the spirituality measures are compiled in Table 5. All three subscales of the ESRD Spiritual Beliefs Scale were highly correlated with each other ($r = 0.89$ to 0.96 , each $P < 0.001$) as well as with the two subscales of the SPS and overall SPS ($r = 0.68$ to 0.76 , each $P < 0.001$) and RWB scores ($r = 0.61$ to 0.68 , each $P < 0.001$). In contrast, the ESRD Spiritual Beliefs subscales were only weakly correlated with EWB ($r = 0.24$ to 0.27 , each $P < 0.001$). The two subscales of the SPS (SBH and SBL) and overall SPS were highly correlated with each other ($r = 0.81$ to 0.97 , each $P < 0.001$). RWB and EWB scores were only weakly associated with each other ($r = 0.34$, $P < 0.001$). These correlations between the spirituality measures were similar when examined within different stages of CKD (data not shown). For example, the correlation between ESRD

Table 3. Descriptive statistics of spirituality measures ($n = 253$)

Spirituality Measure ^a	Mean $\pm$ SD
ESRD Spiritual Beliefs Scale (out of 20)	
spiritual score	9.9 ± 6.7
religious involvement	8.8 ± 6.6
religious coping	9.3 ± 6.5
ESRD Support Network (out of 50)	22.9 ± 10.2
SPS (out of 6)	
behavior	2.9 ± 1.7
beliefs	3.5 ± 1.6
total	3.3 ± 1.6
SWBS (out of 60)	
existential	42.9 ± 8.8
religious	38.8 ± 11.4

^aSpirituality measures are not statistically different among three dialysis modalities: Predialysis, HD, and PD.

Spiritual Beliefs subscale religious involvement and overall SPS was 0.72 in the full data set and 0.67, 0.74, and 0.78 in predialysis, HD, and PD patients, respectively.

Associations between spiritual dimensions and HRQoL domains are compiled in Table 6. The ESRD Spiritual Beliefs, SPS, and RWB scores were only weakly associated with social support and dialysis staff encouragement from the dialysis-specific items on the KDQOL ($r = 0.20$ to 0.28 , each $P < 0.01$) and social support from the Support Network subscale of the ESRD Spiritual Beliefs Scale ($r = 0.28$, $P < 0.01$). Negligible correlations existed between any of these religious scores and the SF-36 domains or single-item rating of HRQoL. Conversely, EWB was

Table 2. Demographic characteristics

Characteristic	All Patients ($n = 253$)	Dialysis Modality			<i>P</i>
		Predialysis ($n = 81$)	HD ($n = 148$)	PD ($n = 24$)	
Male gender (%)	56.5	66.7	50.0	62.5	0.043
White race (%)	81.5	89.0	76.8	86.4	0.077
Marital status (%)					0.028
never married	21.0	16.9	25.4	8.7	
married/common-law	59.7	67.5	51.4	82.6	
single ^a	19.3	15.6	23.2	8.7	
Diabetes (%)	51.4	48.1	55.9	34.8	0.132
Dialysis Modality (%)					
predialysis	32.0				
HD	58.5				
PD	9.5				
Age (years; mean $\pm$ SD)	59.5 ± 14.6	64.6 ± 12.6	57.1 ± 14.4	57.2 ± 17.5	<0.001
Time on dialysis (months; mean $\pm$ SD) ^b	30.9 ± 26.7		31.7 ± 27.1	26.3 ± 24.6	0.365
CC (mean $\pm$ SD)	8.7 ± 2.9	9.4 ± 2.7	8.5 ± 2.9	7.8 ± 2.5	0.020

^aWidowed/separated/divorced.

^bHD and PD patients only.

Table 4. Descriptive statistics for HRQoL ($n = 253$)

Variable	Mean $\pm$ SD
KDQOL: Kidney disease-specific items	
symptom/problems ^a	74.9 $\pm$ 17.2
effects of kidney disease ^a	65.9 $\pm$ 23.2
burden of kidney disease	51.0 $\pm$ 29.6
work status	36.2 $\pm$ 38.7
cognitive function	81.9 $\pm$ 18.7
quality of social interaction	78.5 $\pm$ 17.7
sexual function	86.4 $\pm$ 27.1
sleep ^a	63.3 $\pm$ 20.5
social support	75.3 $\pm$ 28.1
dialysis staff encouragement	79.0 $\pm$ 20.7
patient satisfaction	79.5 $\pm$ 21.3
SF-36	
physical functioning	53.1 $\pm$ 31.5
role-physical	46.6 $\pm$ 45.7
bodily pain	68.7 $\pm$ 27.2
general health	48.1 $\pm$ 20.7
vitality	49.0 $\pm$ 22.9
social function	69.0 $\pm$ 26.1
role-emotional	62.6 $\pm$ 44.3
mental health	71.2 $\pm$ 18.1
overall health	58.8 $\pm$ 19.4
RAND-36	
physical health composite	41.7 $\pm$ 10.8
mental health composite	44.1 $\pm$ 10.6

^aOnly these scores are statistically different between dialysis modalities: Predialysis and HD. The HD patients have lower scores compared with predialysis patients. All other measures are not statistically different among three dialysis modalities.

moderately associated with several domains of HRQoL, including burden of kidney disease, effects of kidney disease, symptom burden, cognitive function, sleep, and quality of social interaction ($r = 0.20$ to 0.43 , each $P < 0.01$). EWB was also associated with the mental health composite of the SF-36 and the single-item rating of HRQoL (Table 7).

Time on dialysis, dialysis modality, race, CCI, diabetes status, hemoglobin, and albumin were not associated with any spiritual scores. Age had negligible correlations (each $r \leq 0.17$) with spiritual scores. Women had greater mean ESRD Spiritual Beliefs Scale scores for all three subscales (11.6, 10.2, and 10.8 *versus* 8.6, 7.8, and 8.1; each $P < 0.01$); greater SPS SBH (3.2 *versus* 2.7; $P = 0.034$); greater RWB (41.5 *versus* 36.5; $P < 0.001$), and less EWB (41.6 *versus* 43.9; $P = 0.047$) compared with men. Never-married compared with married patients had lower mean ESRD Spiritual Beliefs Scale scores for two subscales, spiritual score and religious coping (7.8 and 7.1 *versus* 10.4 and 10.1, respectively; $P < 0.05$) but was NS for the third subscale, religious involvement (6.8 *versus* 9.2; $P = 0.079$). After adjustment for gender and age, marital status was not associated ($P > 0.05$) with spiritual scores.

Discussion

Spirituality may affect health through many mechanisms. Existential and religious beliefs may give meaning, hope, and comfort, even in situations of extreme suffering, by providing an explanation for the experience of illness and helping people to value themselves and their lives despite illness (36,37). One's estimate of the meaningfulness of one's life has been reported to be perhaps the most important "resistance resource" in coping with difficulties as it supplies the motivation to enlist other coping strategies and strengths (38). Consequently, targeting spirituality may help to preserve or enhance HRQoL even in the face of considerable physical and psychosocial challenges.

Construct Validity of the ESRD Spiritual Beliefs Scale

The existential and religious dimensions of spirituality have been shown to be distinct constructs. Spiritual assessment tools, therefore, must clearly distinguish between organized religious practices and existential spirituality. Construct validity of the newly developed ESRD Spiritual Beliefs Scale has yet to be explored; therefore, it remains unclear which spirituality constructs this tool actually measures. If two tests are presumed to measure the same construct, then a moderate to strong correlation between them is predicted. The two subscales of the SPS and overall SPS measure similar constructs of spirituality, and, as predicted, their scores were highly correlated. In contrast, the RWB and EWB subscales of the SWBS have been shown to measure two distinct constructs of spirituality (religion and existential, respectively), and, as expected, the correlation between these two scores was weak. Both subscales of the SPS and overall SPS were highly correlated with RWB and weakly correlated with EWB, indicating that the SPS measures primarily the religious construct of spirituality and perhaps its original name, Religious Perspective Scale, is more appropriate, at least for this group of patients. All three subscales of the ESRD Spiritual Beliefs Scale were highly correlated with each other, indicating that they likely capture a similar construct of spirituality. Strong correlations existed between these three subscales and both SPS subscales, overall SPS, and RWB yet was only weakly associated with EWB. The wording in the ESRD Spiritual Beliefs Scale defines spirituality as the importance of faith—these patients did not seem to distinguish this from the importance of religion. From these data, there is evidence to support construct validity of the ESRD Spiritual Beliefs Scale as a measure of religiosity. It does not seem to capture the existential dimension of spirituality.

The support network subscale of the ESRD Spiritual Beliefs Scale captures information about from which people patients obtain their support rather than quantifies the overall degree to which they feel supported socially. It is therefore not surprising that this subscale was only weakly associated with the social support subscale of the KDQOL.

Description of Spirituality

Spiritual domains of care, particularly nearer the end of life, have been identified as a priority by patients with CKD (10,11,39).

Table 5. Associations between spirituality measures ($n = 253$)

Spirituality	Correlation								
	ESRD Spiritual Beliefs Scale				SPS			SWBS	
	Spiritual Score	Religious Involvement	Religious Coping	Support Network	Behavior	Beliefs	Overall	EWB	RWB
ESRD Spiritual Belief Scale									
spiritual score	—								
religious involvement	0.89	—							
religious coping	0.96	0.96	—						
support network	0.38	0.38	0.40	—					
SPS									
behavior	0.72	0.71	0.73	0.42	—				
beliefs	0.73	0.68	0.71	0.34	0.81	—			
overall	0.76	0.72	0.75	0.40	0.93	0.97	—		
SWBS									
EWB	0.27	0.24	0.26	0.16 ^a	0.22	0.26	0.26	—	
RWB	0.68	0.61	0.65	0.45	0.60	0.62	0.64	0.34	—

^a $P = 0.018$; all others $P < 0.001$.

Table 6. Associations between spirituality and HRQoL measures

HRQoL: Kidney Disease	Correlation								
	ESRD Spiritual Belief Scale				SPS			SWBS	
	Spiritual Score	Religious Involvement	Religious Feelings	Support Network	Behavior	Beliefs	Overall	EWB	RWB
Symptom/problems	0.01	0.06	0.05	−0.01	0.01	0.01	<0.01	0.25 ^a	−0.05
Effects of kidney disease	−0.01	0.04	0.02	−0.01	0.02	−0.01	0.02	0.36 ^a	0.02
Burden of kidney disease	0.07	0.09	0.09	0.05	0.05	0.06	0.06	0.43 ^a	0.10
Work status	0.08	0.06	0.07	−0.01	−0.06	−0.10	−0.09	0.15 ^b	−0.05
Cognitive function	0.06	0.07	0.06	0.06	0.06	0.13	0.11	0.25 ^a	0.10
Quality of social interaction	0.05	0.09	0.06	0.17 ^b	0.08	0.14 ^b	0.13 ^c	0.20 ^d	0.10
Sexual function	−0.27 ^b	−0.07	−0.16	−0.19	−0.12	−0.24 ^c	−0.20	0.09	−0.29 ^b
Sleep	0.16 ^b	0.17 ^d	0.18 ^d	0.03	0.19 ^d	0.15 ^b	0.18 ^d	0.34 ^a	0.03
Social support	0.20 ^d	0.20 ^d	0.21 ^d	0.28 ^a	0.20 ^d	0.21 ^d	0.22 ^d	0.18 ^d	0.20 ^d
Dialysis Staff encouragement	0.22 ^d	0.20 ^d	0.23 ^d	0.14 ^c	0.24 ^d	0.26 ^a	0.28 ^a	0.07	0.26 ^a
Patient satisfaction	0.16 ^b	0.15 ^b	0.17 ^b	0.08	0.17 ^b	0.16 ^b	0.17 ^b	0.12	0.14

^a $P < 0.001$.^b $P < 0.05$.^c $P < 0.1$ (borderline significance).^d $P < 0.01$.

EWB was low for these patients, suggesting dissatisfaction in relationships with God or a higher power and existential distress. Similar EWB scores were reported for white women who were on HD (31). These patients, however, had lower religiosity scores than those previously reported in the literature, indicating a relatively low perceived importance of religion and/or faith in their lives and in coping with their kidney disease. In the US predominantly (89%) black patient population with ESRD ($n = 166$), all subscales of the ESRD Spiritual Beliefs Scale showed ceiling ef-

fects, with most patients endorsing the maximum score. The mean scores for all three subscales were 16.1 to 17.5 (12). Black women who were on HD also reported higher RWB scores than seen here (30); however, black patients have been shown to report greater religious involvement and religious coping than their white counterparts (13). White women who were on HD reported religious scores that were more consistent with those reported by the patients in this study (mean RWB score 42.4) (31). These data suggest that the majority of these patients are more focused on the

Table 7. Association between spirituality measures and SF-36 and RAND-36

Variable	Correlation								
	ESRD Spiritual Beliefs Scale				SPS			SWBS	
	Spiritual Score	Religious Involvement	Religious Feelings	Support Network	Behavior	Beliefs	Overall	EWB	RWB
SF-36									
physical functioning	−0.06	0.00	−0.01	−0.05	−0.02	−0.10	−0.07	0.07	−0.16 ^a
role-physical	−0.03	0.02	0.00	−0.02	0.03	0.01	0.02	0.06	−0.04
bodily pain	0.00	0.06	0.04	−0.05	0.00	−0.01	−0.01	0.10	−0.07
general health	0.04	0.01	0.03	0.10	0.03	0.03	0.03	0.29 ^b	0.22 ^b
vitality	−0.01	−0.03	0.01	0.05	0.09	0.09	0.10	0.27 ^b	−0.03
social function	0.04	0.01	0.03	0.13	0.06	0.08	0.08	0.17 ^a	0.06
role-emotional	0.03	0.07	0.05	−0.02	0.07	0.09	0.08	0.13	0.05
mental health	0.15 ^a	0.10	0.12 ^c	0.16 ^a	0.16 ^a	0.17 ^a	0.16 ^a	0.31 ^b	0.14 ^a
overall health	0.13 ^a	0.15 ^a	0.15 ^a	0.16 ^a	0.12 ^c	0.07	0.09	0.25 ^b	0.12 ^c
RAND-36									
physical health composite	0.04	0.08	0.08	−0.01	0.02	0.01	0.02	0.14 ^a	−0.01
mental health composite	0.09	0.11	0.10	0.13	0.16 ^a	0.13	0.15 ^a	0.27 ^b	0.08

^a*P* < 0.05.
^b*P* < 0.001.
^c*P* < 0.1 (borderline significance).

existential dimensions of spirituality than on organized religion; however, given the variability in responses, this is not the case for all patients, because a minority clearly identified an important role of religion in both their lives and in coping with chronic illness. Perceived importance of religion or EWB was not associated with sociodemographic variables such as age, marital status, stage of CKD, dialysis modality, or severity of illness as measured by the CCI. This is consistent with what has been reported previously (4,16,17,28).

Impact of Spirituality on HRQoL

The role that various domains of spirituality play in the perception that patients with CKD have of their HRQoL is not well understood. The spirituality instruments behaved differently in the correlational analyses with HRQoL, supporting the idea that religion and existential aspects of spirituality are distinct and separate constructs. Perceived importance of religion and involvement in religious activities did not seem to have a substantial impact on HRQoL for these patients; however, it is possible that if religious beliefs are important, then they are more likely to enhance HRQoL if these issues and needs are addressed as part of their care. In contrast, EWB was moderately associated with HRQoL; those who reported better EWB perceived greater HRQoL. It does not seem that spirituality has considerable overlap with other core HRQoL domains because the correlations were not strong, suggesting that although these existential domains are meaningfully associated with patient perception of HRQoL, EWB is a unique dimension of HRQoL. Even the psychological constructs included in the

KDQOL and SF-36 do not seem to capture spiritual domains adequately.

It has been postulated that people who identify themselves as religious are often involved in religious communities and typically report higher social support scores compared with those who do not perceive themselves to be religious (14); however, these patients did not have high religious scores and perceived that importance of religion or RWB was only weakly associated with social support. EWB was more strongly associated with quality of social interactions and may be a mechanism by which spirituality enhances or preserves HRQoL in the face of illness.

In black patients with ESRD, stronger associations between religion and HRQoL domains have been reported compared with white patients (4,16,17) and those reported here; however, even in these studies, EWB had stronger associations with HRQoL when compared with religion (4,15,17). This preferential association of existential spirituality to HRQoL compared with religion has also been described in predominantly (61%) black patients with HIV, for whom the EWB was moderately associated with HRQoL (*r* = 0.41) and social support (*r* = 0.36) compared with negligible associations between RWB and SPS and HRQoL (40).

There are several limitations to this study. Although the recruitment rate was high, there remains the potential for selection bias toward people who have stronger feelings for the study subject, whether they are positive or negative. Patients were predominantly white. Given the cultural differences in the importance of religion and existential beliefs, these results may not be generalizable to ethnically diverse patient groups. The

literature suggests that black patients with ESRD have much higher religious involvement and religious coping than patients in this study, and, hence, religious issues may have greater impact on HRQoL for these patients than shown in this study. We also did not have information on religious affiliations of patients. We are not able to establish causality or understand the mechanisms behind the relationship between EWB and HRQoL because this was a cross-sectional study. Longitudinal follow-up of these patients is in progress and will hopefully be better able to delineate this relationship.

Spiritual care has been identified as an essential domain of quality care by patients with ESRD, particularly near the end of life, and studies have indicated the strong desire of these patients to have spirituality included in their care. Whereas much of the early literature on spirituality in ESRD appeared in the nursing literature, the recent emergence of literature in major subspecialty journals reflects a shift in nephrology toward ameliorating suffering, whether physical, psychosocial, or spiritual. These patients reported that substantial existential distress and low EWB were associated with poor HRQoL. The clinical implication is that for those who exhibit spiritual distress, attending to their concerns may contribute to improvements in health outcomes and HRQoL. Measuring spirituality, therefore, would be an important addition to HRQoL measurement. The spiritual domains are clearly absent from the KDQOL and SF-36. The spirituality assessment tool(s) used to evaluate patients must measure clinically relevant dimensions of spirituality. For these patients, EWB was more clinically relevant than measures of religiosity.

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None.

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