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The Brief Serenity Scale: A Psychometric Analysis of a Measure of Spirituality and Well-Being

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Over the past 20 years, there has been a growing interest in the topic of spirituality and its impact on health and well-being. Consumers are demanding care that is holistic and researchers are interested in establishing a link between spirituality and spiritual interventions and health outcomes. The purpose of this study was to conduct a psychometric analysis of an instrument, the Serenity Scale, that is purported to measure important dimensions of spirituality and well-being that are sensitive to nursing interventions.

Spirituality is a multidimensional construct that has been defined in a multitude of ways and is generally understood to be related to but distinct from religiosity. Religious beliefs are associated with a particular faith tradition. Participation or commitment to a religion may involve adherence to certain beliefs (ideology), religious practices (prayer, sacraments and rituals), religious proscriptions (dietary modifications or avoidance of tobacco, alcohol and drugs) and participation in a religious community. Murray and Zentner (1998) define spirituality as a quality that goes beyond religious affiliation, that strives for inspiration, reverence, awe, meaning and purpose, even in those who do not believe in God. The spiritual dimension, they suggest, is in harmony with the universe, strives for answers about the infinite and comes into focus when the person faces emotional stress, physical illness or death. Spirituality has also been described as a process and sacred journey (Mische, 1982), the essence or life principle of a person (Colliton, 1981), an experience of the radical truth of things (Legere, 1984), and the propensity to make meaning (Reed, 1992).

Spirituality is understood to be a broad construct that includes many dimensions including serenity. The concept of serenity and its relationships to spirituality, health and well-being first appeared in the nursing literature in the mid-1960's when it was identified as an important outcome for terminally ill patients (Knipe, 1966). In the 1990's several additional articles appeared that described serenity as a goal for nursing practice (Roberts and Whall, 1996), as

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a concept related to comfort (Morse et al, 1995), and the focus of nursing interventions for the elderly (Roberts & Messenger, 1993) and terminally ill (Messenger and Roberts, 1994).

Serenity has been defined as a spiritual state that decreases stress and promotes optimal health (Roberts and Cunningham, 1990), a sustained state of inner peace (Gerber, 1986), and a universal health experience related to quality of life (Kruse, 1999). Boyd-Wilson et al (2004) describe serenity as a spiritual quality that involves inner peace despite vicissitudes and even feelings, thus a person can feel grief, yet be serene.

Roberts and Fitzgerald (1991) completed a concept analysis of serenity revealing ten critical attributes of serenity including: inner haven of peace and security, detachment from excessive desires and emotions; and acceptance of situations that cannot be changed. As an outcome of this analysis, they defined serenity as a spiritual experience of inner peace that is independent of external events. A subsequent conceptual model developed by Roberts and Whall (1996) postulates that serenity is a learned, positive emotion that decreases perceived stress and improves health. This work began to lay the foundation for nursing research that links serenity as an outcome to nursing interventions focused on promoting health and well-being.

Nurses and other clinicians increasingly recognize the relationship between spirituality and health outcomes and are integrating spiritual care into the overall nursing care of patients. As nursing strives to develop an evidence-base to support practice, valid, reliable and methodologically sound instruments are needed to measure phenomena of interest such as serenity and to evaluate whether nursing interventions can impact these attributes. It is important that these measures tap specifically into the phenomena of serenity as a concept related to spirituality, but independent of religiosity or overall values in general. Instruments commonly used, such as the Spiritual Well-Being Scale (Paloutzian & Ellison, 1982) focus on religiosity (religious well-being). Others, such as the Spiritual Orientation Inventory (Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988), are designed to measure values believed to be spiritual in nature rather than a state of spiritual well-being.

The Serenity Scale, developed by Roberts and Aspy (1993), is based on the earlier concept analysis completed by Roberts and Fitzgerald (1991) and the definition of serenity as being a spiritual experience of inner peace that is independent of external events. Using the 65 item version of the Serenity Scale, Roberts and Aspy (1993) conducted two interventions studies (Roberts & Messenger, 1993; Messenger & Roberts, 1994) and a factor analysis (Roberts & Aspy, 1993). After pilot testing and conducting a factor analysis on a sample of 542 volunteers, the tool was reduced to 40 items. Roberts and Aspy identified 9 distinct factors in this 40 item version: Inner Haven, Acceptance, Belonging, Trust, Perspective, Contentment, Present Centered, Beneficence, and Cognitive Restructuring. Roberts and Aspy noted that the Serenity Scale was still too long for some participants and that education (i.e., vocabulary and reading ability) was a concern. A subsequent study by Kruse et al (2005) examined psychometric properties of the 40 item Serenity Scale in a population of older male and female hospital volunteer workers. In this study, the investigators found that the Serenity Scale was internally consistent and reliable (Cronbach's alpha = 0.93), however, the subscales were not found to be stable. Kruse et al. concluded that the Serenity Scale measures a single concept.

The authors of this paper determined that serenity was a potentially important outcome for use in an NIH funded randomized clinical trial examining the impact of mindfulness-based stress reduction (MBSR) on symptom management in solid organ transplant recipients (Author et al. 2004; ClinicalTrials.gov No. NCT00367809). Given the length of our study questionnaire and concerns regarding participant burden, we decided to explore the feasibility of creating a brief version of the Serenity Scale. The author (Kay Roberts) granted us permission to abbreviate the scale, and directed the team to ongoing psychometric work by Dr. Belinda Boyd-Wilson

and her team of researchers in New Zealand. Consistent with later findings of Kruse et al., Dr. Boyd-Wilson found that a single factor, "Serenity", was a good representation of the Serenity Scale, using data from 378 university students. (Boyd-Wilson et al, 2004) As described below, we relied upon Boyd-Wilson's analysis to select the items that most strongly represented the concept of serenity for the brief Serenity Scale used in this study.

METHODS

Sample

The study data are derived from the Wellness Interventions After Transplant Trial, a phase III clinical trial in which participants are randomized to one of 3 groups: 1) 8 weeks of MBSR classes; 2) 8 weeks of active control classes or 3) a temporary wait-list. Participants were recruited via study brochures, health care provider referrals, ads and letters sent to their homes. Criteria for inclusion were: solid organ transplant recipient, 18 years of age or older, at least six months post-transplant, stable health (e.g., no hospitalization or major illnesses in previous three months), not currently practicing mindfulness meditation, telephone, English speaking, mentally intact, and residing in the Twin Cities metropolitan area. Those with serious untreated mental conditions (e.g., suicidal, psychotic) were excluded. The Wellness Interventions after Transplant trial was approved by the Institutional Review Board at the University of Minnesota.

Procedure

Following a telephone screening interview, the study coordinator scheduled an appointment to explain the study and conduct the informed consent process. Individuals choosing to participate in the study were given a battery of self-report instruments to complete at home and return by mail. Subjects were randomized to treatment only after receipt of these baseline measures. Baseline, pre-randomization self-reports from 87 trial participants constituted the data for this analysis.

Instrument Development

We sought a brief, valid and reliable measure of serenity that would be appropriate for inclusion in a battery of instruments to be completed by a clinical population. To abbreviate the Serenity Scale, we picked the items which were most strongly related to the underlying concept of serenity in the psychometric analysis conducted by Dr. Boyd-Wilson (Boyd-Wilson et al, 2004). The factor loading, or correlation between the item and underlying factor, indicates how well an item represents or defines the underlying factor (Spicer, 2005). Items were included if they had a correlation of.40 or higher with the single underlying factor, "serenity". This criterion resulted in 23 items, however, one item was excluded as being unclear, leaving us with 22 items. The resulting 22 item brief version preserved the item wording, response options and summative scoring of the original scale. The five point response scale ranges from 1 (never) to 5 (always).

The 22 item brief version of the Serenity Scale includes all of the items from the largest of Roberts and Aspy's original factors, Inner Haven (9 items). The brief version also includes all items from the original Trust factor (4 items) and most of the items from the Acceptance factor (4 items). The remaining items represent the original factors of Perspective (2 items), Benevolence (2 items), and Present-Centeredness (1 item). The brief version does not include any items from three of the original 9 factors: Belonging, Contentment or Cognitive Restructuring. Items in these factors were not strongly related to the core concept of serenity in Boyd-Wilson's analysis. Belonging and Contentment consisted exclusively of negative items (feeling isolated, not belonging, worried about the future) and the third factor, Cognitive Restructuring, consisted of only two items and accounted for the least variance in Roberts and Aspy's analysis.

Instrument Validation

In addition to the Serenity Scale, data were obtained from the subjects using a number of other widely used, well-validated self-report instruments that were included in the instrument battery that was part of the larger clinical trial: the State-Trait Anxiety Inventory (STAI) (Spielberger, 1983), the Center for Epidemiologic Studies Depression Scale (CES-D) (Radloff, 1977), PANAS – Positive and Negative Affect Scale (Watson, Clark and Tellegen, 1988), Medical Outcomes Study Health Distress measure (MOS-HD) (Lorig, 1996) and visual analogue scales for rating overall health and quality of life. Two less well-known scales included in this trial are the Mindful Attention Awareness Scale (MAAS) (Brown and Ryan, 2003) and the Transplant-related Stressors Scale (Frazier et al, 1994). The reliabilities (Cronbach alphas) of these instruments are listed in Table 3.

These scales, along with the Serenity Scale were included in the baseline battery of instruments as predictors or mediators of treatment impact. While these instruments were not chosen specifically to validate the brief Serenity Scale, based on the literature we were able to hypothesize the direction and magnitude of relationships between the measured concepts and serenity. Therefore, it was reasonable to use these measures to conduct tests of the convergent and discriminant validity of the brief Serenity Scale. We hypothesized that the brief Serenity Scale would have small to moderate positive correlations (r = .3 to.5, representing 10%–25% shared variation) with concepts of positive affect and mindful awareness, and small to moderate negative correlations with measures of negative mood and distress. We did not expect these correlations to be large, as serenity was hypothesized to be a distinct concept and have limited overlap with these other concepts.

Data Analysis

The construct validity of the brief Serenity Scale was evaluated three ways: using factor analyses, tests of convergent and discriminant validity, and a test of the hypothesis that serenity predicts quality of life. Confirmatory Factor Analysis (CFA) was conducted with LISREL 8.54; all other analyses were done with SPSS 13.0. Continuous data were summarized using means and standard deviations and categorical data were summarized using proportions. Internal consistency reliability of the 22 item Serenity Scale was assessed by Cronbach's alpha and item-to-total correlation coefficients (ITC). EFA with maximum likelihood estimation and promax oblique rotation factor extraction was used to separate clusters of related items and identify underlying factors within the scale. Factors were identified from the factor pattern matrix, and retained based on criteria of eigen values over 1, the scree plot and interpretability. CFA was used to compare alternatives to the EFA model. Multiple goodness of fit indices including χ^2/df less than 3, non-normed fit index (NNFI) greater than.90, comparative fit index (CFI) greater than 0.90, root mean square error of approximation (RMSEA) less than 0.1 and standardized root mean square residual (SRMR) of less than 0.1 were used to evaluate the different models. Model fit was compared by the χ^2 difference test at an alpha level of 0.05. (Kline, 2005)

Convergent and discriminant validity were assessed by examining correlations between the Serenity Scale and measures of concepts hypothesized to have either positive or negative relationships to serenity. Multiple regression was used to test the hypothesis that serenity, after adjustment for covariates, would predict quality of life. Additional analyses were conducted to explore relationships between demographics, health indicators and serenity. ANOVA was used to determine if gender, age, education level or receipt of a life saving transplant (yes/no) were associated with serenity.

RESULTS

The average age of participants was 54.4 years, about half were women (46%), 60% were married and the majority (69%) had completed college or post-graduate education. Approximately 46% of the sample had received a transplant that is considered life saving – lung, liver, heart, double lung or heart/lung. The remainder had received kidney, pancreas or kidney/pancreas transplants, transplants that have been shown to significantly enhance quality of life. The scores of the 22 item Serenity Scale ranged from 1.86 to 5.0, and its internal consistency reliability was high (Cronbach's alpha = .95). There were no significant differences in Serenity Scale scores among the participants based on age, gender, marital status, education level, or type of transplant.

EFA identified three factors (See Table 1), explaining a total of 58.72% of the variance. Factor 1 was an omnibus collection of items representing multiple attributes of serenity. Factor 1 contained 10 items, all but one with a factor loading over.40. Item-to-total correlations for these items ranged from.40 to.71. Factor 1 explained 45.6% of the variance, and the Cronbach's alpha for this factor was high, .89. Factor names were selected to correspond to Roberts and Aspy's nomenclature. Thus, factor 1 was named Acceptance.

Factor 2 was named Inner Haven, since all items in Factor 2 derived from the Inner Haven factor of Roberts and Aspy's original 9-factor solution. The eight items associated with this factor had factor loadings ranging from.53 t o.91. Item-to-total correlations ranged from.71 to. 88, and this factor explained 8.64% of the variance. Cronbach's alpha for Inner Haven was also high, .94.

Factor 3 replicated the Trust factor in Roberts and Aspy's 9-factor solution, and explained 4.47% of the variance. The 4 items representing the Trust factor had factor loadings ranging from.42 to.85. Item-to-total correlations ranged from.59 to.81, and Cronbach's alpha was also high, .88. While explaining less than 5% of the variance in this sample, the Trust factor satisfied the most important consideration for assessing the "worthiness" of factors, interpretability (Spicer, 2005), and furthermore, it had strong internal consistency, and was supported by the prior work of Roberts and Aspy. This EFA suggests that serenity is a multi-dimensional concept with three distinct, but related facets, Acceptance, Inner Haven and Trust.

This 3-factor model served as the reference model for CFA. Because of the limited sample size, the EFA and CFA analyses were conducted on the same data, and therefore the 3-factor model was expected to provide the best fit to the data. However, if 1 or 2 factor models fit the data almost as well, they may be preferred for simplicity. In the one factor model, all 22 items were assumed to be the observed variables of a single latent variable (serenity). In the two factor model, 10 items were assumed to be the observed variables of Acceptance while the rest were assumed to be the observed variables of a second factor, Haven/Trust. Based on the goodness of fit indices and χ^2 difference test, as shown in Table 2, the 3 factor model was not only the best fitting model, it was significantly better than the simpler alternatives.

For all 22 items, responses were relatively evenly distributed over the range of the response options. No very large ceiling or floor effects were identified. Thus the 22 item version has the potential to be a sensitive measure to detect enhancements or decrements in serenity and able to differentiate among various degrees of serenity.

The brief Serenity Scale was significantly correlated with the other self-report measures in the expected directions as described in Table 3. Higher serenity scores were positively associated with positive affect and mindful awareness and inversely related to negative affect, anxiety, depression, health distress and transplant-related stress. The direction and small to moderate

magnitudes of the observed correlations were consistent with the expectations for these convergent and discriminant validation tests.

Multiple regression was used to evaluate the impact of serenity on quality of life, after adjustment for covariates of gender, age, education, and having received a life-saving transplant. As shown in Table 4, participants that reported a higher level of serenity were significantly more likely to report having a higher (e.g., better) quality of life.

Our participants completed the brief Serenity Scale as part of a larger survey that was twenty pages in length. All participants completed the scale at the baseline assessment without missing items. Overall, our experience with this version of the scale indicates that it has good psychometric properties and is easy to administer.

DISCUSSION

The focus of many nursing interventions is to help clients improve health and well-being as well as to prevent and manage the symptoms of disease. While many health problems cannot be cured, nursing interventions and attention to well-being may improve quality of life and outcomes for patients. Serenity is an aspect of spiritual health and well-being that may be improved despite disease progression. Our work with solid organ transplant recipients offered a unique opportunity to measure serenity and explore the psychometrics of a shorter version of the Serenity Scale in a sample of patients who have survived organ failure and subsequent organ transplantation and currently face chronic health problems and increased health risks associated with lifelong immunosuppressive therapy. While our sample may be considered to be a medically unique group of patients, they demonstrated a wide range of functioning and severity of illness.

Valid and reliable instruments have been developed to measure the constructs of physical, psychological, and emotional health. Spiritual health and well-being is a less well developed construct and currently available instruments operationalize this construct in quite different ways. The Serenity Scale has similarities and differences to other tools reported in the literature.

The Spiritual Well-Being Scale (Paloutzian & Ellison, 1982) consists of two subscales: a measure of religious well-being (the person's relationship with God) and existential well-being (one's sense of purpose and satisfaction with life). The concept of existential well-being as defined in this tool is closely related to the concept of serenity. However, the emphasis on religiosity makes it a less attractive and appropriate instrument for nursing interventions that are focused specifically on enhancing a person's spirituality and experience of serenity. The Serenity Scale, in comparison, appears to capture a state of "inner peace" that could be a distinct and important outcome of nursing interventions.

The Spiritual Orientation Inventory (Elkins, Hedstrom, Hughes, Leaf, & Saunders, 1988) is another commonly used tool. It was designed to measure the spirituality of non-religious people. The scale includes 85 items that measure nine spiritual attributes including transcendence, meaning and purpose in life, altruism, idealism, awareness of the tragic, mission in life, sacredness in life and material values. While there is some overlap between this instrument and the Serenity Scale, it appears to be more oriented towards the measurement of values believed to be spiritual in nature rather than a state of spiritual well-being, and the length of this scale would be a barrier to its use in many clinical populations.

Our analysis of the 22 item Serenity Scale revealed 3 distinct factors: Acceptance, Inner Haven and Trust. The first factor, Acceptance, includes items related to a person's ability to accept outcomes that they may not be able to control while maintaining present-moment awareness, a wider perspective and a sense of forgiveness for themselves and others. The Acceptance

factor is reminiscent of the serenity prayer and reflects a state of inner harmony, despite life events. Seven of the 8 items from the second factor, Inner Haven, include the word “inner” in relation to self, comfort, strength, calm, quiet, or peace. Thus, the second factor, Inner Haven, reflects a person’s ability to tap into an inner resource of comfort. The final factor, named Trust, includes statements related to a person’s sense of trust in a larger plan, that there is some good in all events because things happen as they should. Our analysis suggests that serenity is achieved through acceptance of events in a wider perspective, using inner resources of comfort and the ability to trust that events unfold as they should, as part of a larger plan. The current analysis suggests that the subscales representing these three factors have high reliability and may be used individually.

As part of their clinical practice, nurses offer patients a number of spiritual interventions such as prayer, meditation, journaling, life review, walking the labyrinth, and reading of spiritual texts. The desired outcome of these interventions is a state of spiritual well-being, peacefulness, and harmony. The Serenity Scale is a tool that can be empirically used to measure where these interventions contribute to a state of inner haven or inner peace. It is an easily administered tool and the brevity of this version is such that it will not contribute to subject burden in a research study where serenity is among a large set of outcome variables being studied. Obtaining outcomes data of this nature will validate the importance of nurses focusing on spirituality and spiritual interventions as part of the standard of nursing care.

Spirituality is recognized as being an essential component of holistic nursing practice. Nurses are increasingly called upon to attend to each patient’s body, mind and spirit. As nurses expand their use of spiritual interventions, it is important to document outcomes related to nursing care, specifically the use of mind/body and spiritual interventions. In this study of solid organ transplant recipients, exploratory factor analysis of the 22 item Serenity Scale revealed three distinct factors: acceptance, inner haven and trust. Together, these factors accounted for about 60% of the total variance. Serenity was found to correlate positively with positive affect and mindful awareness and was inversely related to negative affect, anxiety, depression, perceived stressors and health-related distress. As hypothesized, serenity predicted quality of life.

The Serenity Scale appears to capture a dimension of spirituality, a state of acceptance, inner haven and trust, that is distinct from other spirituality instruments that tap more into spiritual values or religious beliefs, orientation and practices. It may complement other instruments of spiritual health and well-being as well as serve as a unique and distinct measure of the outcomes of spiritual care. Our evaluation of the brief Serenity Scale suggests that it is a promising instrument to provide valid and reliable measurement of serenity and its facets of acceptance, inner haven and trust, for clinical research.

The limitations of our study include a modest sample size. The traditional rule of thumb for factor analysis is a minimum of 5 subjects per variable. It is recognized, however, that issues such as the number of factors and the strength of the correlations among the items influence the adequacy of the sample size (Spicer, 2002). Sapnas & Zeller (2002) demonstrate that sample sizes between 50 and 100 can be adequate when items are highly inter-related. In this study, a small number of factors, each with high reliability and a meaningful interpretation support the trustworthiness of the analysis and adequacy of the sample size. However, because of size limitations, the confirmatory factor analysis was conducted on the same sample as the exploratory factor analysis. It would have been preferable to split the sample and conduct these analyses on independent samples. Replication with independent samples in future research will determine if these results are fully robust. Another limitation of the study is the absence of a “gold standard” measure of serenity for criterion validation testing. Also, the measures used for convergent and discriminant validation testing were limited to instruments collected at baseline for the trial, and not determined by a theoretical model of spirituality. Further work

to examine relationships among serenity and theoretically related concepts such as self-compassion will be of interest. The present study extends the application of the Serenity Scale to patients. Previous developmental and psychometric analyses have used older adult volunteers and university students. Further studies are also needed to demonstrate the stability of the Serenity Scale over long and short intervals, to evaluate its responsiveness to changes in health and to nursing interventions, and investigate the applicability of this tool to diverse populations of patients.

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Table 1

Item Analysis of the Brief Serenity Scale based on Exploratory Factor Analysis, Maximum Likelihood with Promax Rotation, N=86

Item	Item statement	Factor Name from Roberts & Aspy's 9- factor solution	Factor Loading	Mean (SD)	Median	Range	%Floor	%Ceiling	ITC
Factor 1: Acceptance (Eigen value 10.04, percent variance explained 45.62%, α = 0.89)									
F	I am forgiving of myself for past mistakes	Acceptance	0.59	3.35 (0.98)	3.50	1–5	2.3	9.3	0.62
G	I take care of today and let yesterday and tomorrow take care of themselves	Acceptance	0.69	3.20 (1.04)	3.00	1–5	3.5	11.6	0.68
H	In problem situations, I do what I am able to do and then accept whatever happens even if I dislike it	Acceptance	0.74	3.53 (0.97)	4.00	1–5	1.2	16.3	0.68
I	I accept situations that I can not change	Acceptance	0.61	3.63 (0.96)	4.00	2–5	12.8	20.9	0.55
J	I try to place my problems in the proper perspective in any given situation	Perspective	0.77	3.81 (0.89)	4.00	2–5	8.1	23.3	0.69
M	I find ways to share my talents with others	Benevolence	0.23	3.41 (0.95)	3.00	1–5	1.2	11.6	0.40
O	I attempt to deal with what is, rather than what was, or what will be	Perspective	0.75	3.30 (1.05)	3.00	1–5	2.3	11.6	0.71
R	I feel that I have done the best I could in life	Present centered	0.62	3.50 (1.02)	4.00	1–5	2.3	15.1	0.67
U	I feel forgiving of those who have harmed me	Benevolence	0.46	3.47 (0.88)	4.00	1–5	1.2	8.1	0.54
V	I feel serene	Inner haven	0.53	3.02 (1.01)	3.00	1–5	4.7	5.8	0.64
Factor 2: Inner haven (Eigen value 1.90, percent variance explained 8.64%, α = 0. 94)									
A	I am aware of an inner source of comfort, strength, and security	Inner haven	0.69	3.62 (1.16)	4.00	1–5	5.8	26.7	0.73
B	During troubled time, I experience an inner source of strength	Inner haven	0.59	3.52 (1.08)	3.50	1–5	3.5	22.1	0.76
E	I experience peace of mind	Inner haven	0.53	3.45 (1.01)	3.00	2–5	20.9	17.4	0.70
K	I am aware of inner peace	Inner haven	0.87	3.38 (1.17)	3.00	1–5	4.7	19.8	0.88
L	I experience an inner quiet that does not depend on events	Inner haven	0.91	3.24 (1.18)	3.00	1–5	8.1	14.0	0.84
N	When I get upset, I become peaceful by getting in touch with my inner self	Inner haven	0.79	2.72 (1.14)	3.00	1–5	17.4	3.5	0.80
Q	I experience an inner calm even when I am under pressure	Inner haven	0.60	2.94 (1.17)	3.00	1–5	8.1	10.5	0.79
S	I can feel angry and observe my feeling of anger and separate myself from it and still feel an inner peace	Inner haven	0.69	2.71 (1.06)	3.00	1–5	12.8	4.7	0.71

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Item	Item statement	Factor Name from Roberts & Aspy's 9- factor solution	Factor Loading	Mean (SD)	Median	Range	%Floor	%Ceiling	ITC
Factor 3: Trust (Eigen value 0.98, percent variance explained 4.47%, α = 0.88)									
C	I trust that life events happen to fit a plan which is larger and more gentle than I can know	Trust	0.85	3.37 (1.42)	4.00	1–5	15.1	27.9	0.78
D	I see the good in painful events that have happened to me	Trust	0.42	3.41 (1.10)	4.00	1–5	5.8	14.0	0.59
P	Even though I do not understand, I trust in the ultimate goodness of the plan of things	Trust	0.83	3.56 (1.16)	4.00	1–5	7.0	22.1	0.79
T	I trust that everything happens as it should	Trust	0.79	3.06 (1.14)	3.00	1–5	10.5	11.6	0.81

Table 2

Comparison of the 3-Factor EFA Model to 1- and 2-Factor Models from CFA

Model	Goodness of fit indices							
	χ^2	df	χ^2/df	RMSEA	NNFI	CFI	SRMR	$\Delta\chi^2(\Delta df)$
One factor	1022.95**	209	4.89	0.214	0.818	0.835	0.108	453** (3)
Two factor	685.49**	208	3.30	0.164	0.846	0.862	0.095	337.46** (1)
Three factor	569.95**	206	2.77	0.144	0.866	0.880	0.090	-

Note: The χ^2 difference test ($\Delta\chi^2(\Delta df)$) was calculated using the three factor model as the reference model

** p <0.01

Table 3

Pearson Correlations between the 22 item Brief Serenity Scale and Scales for Concepts Hypothesized to Relate Positively or Negatively to Serenity (n=87)

Scale (Cronbach's alpha)							
	22-SS						
MAAS (.90)	0.46**	MAAS					
PA(.87)	0.51**	0.48**	PA				
NA (.79)	−0.27*	−0.44**	−0.28**	NA			
TRS (.87)	−0.30**	−0.47**	−0.27*	0.55**	TRS		
STAI (.95)	−0.47**	−0.54**	−0.47**	0.67**	0.51**	STAI	
MOS-HD (.91)	−0.25*	−0.35**	−0.37**	0.58**	0.66**	0.45**	MOS-HD
CES-D (.90)	−0.32**	−0.68**	−0.47**	0.71**	0.46**	0.75**	0.49**

* P<0.05,

** P<0.01

Abbreviations: 22-SS = the 22 item Brief Serenity Scale, MAAS = Mindful Attention Awareness Scale, PA = Positive Affect, NA = Negative Affect, TRS = Transplant-Related Stressors, STAI = State Trait Anxiety Inventory, MOS-HD = Medical Outcomes Study - Health Distress, CES-D = Center for Epidemiologic Studies - Depression. In this study the PANAS scale had 10 items, as 4 items that could be side effects of immune suppression were omitted.

Table 4

Impact of Serenity on Quality of Life

Dependent variable: Quality of life						
Independent Variables	Unstandardized Coefficients	Std. Error	Standardized Coefficients	p-value	95% Confidence Interval	
					Lower Bound	Upper Bound
Gender	−1.738	3.278	−0.05	0.597	−8.26	4.78
Age	−0.159	0.145	−0.12	0.277	−0.44	0.130
Education	0.071	1.695	0.004	0.966	−3.30	3.44
SS 22 item Version	8.419	2.26	0.39	<0.001	3.91	12.92
Life saving transplant	−6.953	3.2	−0.22	0.036	−13.44	−0.46

Adjusted R^2=0.128, p=0.007

Quality of life was measured by averaging visual analogue scale ratings of satisfaction with life and with health overall.