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A Spiritual Integration Test and What it Predicts About Elder Health and Well Being

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The Spiritual Integration Scale may be useful in measuring spiritual orientation, outlook, and behavior of a wide cross section of religious and non-religious people.

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In 2001 the *Occasional Papers Series* of the Public Policy Research Center published the summary results of Phase I of the Spiritual Integration Project (Reidhead and Reidhead 2001), a multi-year two-phase research effort funded by the John E. Fetzer Institute, with supplemental support from the Public Policy Research Center. In this paper, we summarize the final, Phase II, results of the project, in which we constructed a reliable, valid measure of Spiritual Integration (SI) and measured performance on an SI test against the physical and emotional well being of elder citizens.

The Fetzer Institute's purpose in funding the Spiritual Integration (SI) Project was two-fold. First, encouraged by the National Institute for Aging, the Fetzer Institute sought to develop quantitative measures of spirituality and religiousness that are more robust than earlier methods by using knowledge-rich qualitative research as a foundation from which to build quantitative measurement methods. Second, Fetzer wanted initial tests of the efficacy of these new methodologies for predicting health and well being among seniors. The SI Project was funded in two phases that roughly correspond to these two objectives. In this paper we briefly recap Phase I results and move quickly to a report of Phase II findings. We hasten to caution that the Phase II results, while comprehensive and grounded in established quantitative methods, should be considered preliminary, because they are based on the first set of statistical analyses performed on the total data reported.

I. The SI Scale: Phase I Summary

Phase I of the SI project began with four years of ethnographic research on the culture of Trappist Monasticism (focusing on men but including women), coupled with long running, periodic ethnography in Benedictine monasteries (studying men and women equally). There emerged from this research a richly nuanced, qualitative database about monastic spiritualities and a confidence that these could be synthesized under a unified spirituality recognizable to all of the monastics among whom we had worked. We believed that we could demonstrate this statistically and from a demonstration build a measure of spirituality that accurately reflects the kinds of human spiritual universals that appear to underwrite monastic spiritualities. We reasoned that if we could accomplish this, we could derive a measure of spirituality that would have potential for very wide application, beyond even the bounds of religious participation. To accomplish this, we needed the active participation of a diverse

group of senior monastic sisters and monks, and during the Phase I grant proposal process we conducted conversations with monastic informants to verify that we had indeed identified a conceptual framework with which to discuss a unified monastic spirituality framework. To our monastic co-discoursers, we proposed the phrase *spiritual integration* to label, classify, and conceptualize the spirituality we wanted them to address with us. The Spiritual Integration (SI) construction worked, and we recruited twenty-nine senior contemplative sisters and monks from three monasteries, two Benedictine and one Trappist, to work as participants. Seven of the most respected among these, drawn from all three monasteries, were recruited as consultants to work closely with us in verification and review capacities.

Phase I produced thirty-six Spiritual Integration (SI) domains, which consisted of attributes and behaviors considered necessary to live a spiritually integrated life, and these are provided in Table 1.1. The thirty-six SI domains were identified through a methodology consisting of: 1) a focus group conference with the consulting monastics to finalize validity of the SI framework, 2) free lists completed by twenty-nine senior contemplative nuns and monks, 3) focus groups drawn from the consulting monastics to collapse, limit, and clean the free lists, 4) a recognition task to identify the necessary attributes for SI, from the free lists, completed by all participating nuns and monks, and 5) consensus analysis to quantitatively derive the final list of necessary SI attributes, which resulted in the final thirty-six SI domains (Reidhead 1999, Table 5).

Table 1.1: Thirty-six Spiritual Integration Domains: Necessary Attributes of Spiritually Integration

Spiritual Integration Domain Item	Number Listing	Monastic Consensus
1. Being god-centered	26	Yes (1.0)
2. Being attentive to the needs and suffering of others	26	Yes (1.0)
3. Having a wholesome sense of morality	26	Yes (1.0)
4. Seeing meaning in life	26	Yes (1.0)
5. Taking a loving, compassionate, and forgiving approach toward others	25	Yes (1.0)
6. Acceptance of one's own limitations and those of others	25	Yes (1.0)
7. Possessing hope and perseverance	25	Yes (1.0)
8. The practice of self-discipline	25	Yes (1.0)
9. Being growth oriented, with an openness to change	24	Yes (1.0)
10. Being prayerful	24	Yes (1.0)
11. Being joyful, with a grateful, positive attitude toward life	24	Yes (1.0)
12. Being reconciled with oneself and others	23	Yes (1.0)
13. Freedom to take risks, aware that one is accountable for her/his actions	23	Yes (1.0)
14. Acceptance and tolerance of differences	23	Yes (1.0)
15. Being generous in relationships with other people	23	Yes (1.0)
16. Acceptance of one's own suffering	22	Yes (1.0)
17. Belief in the basic goodness of human beings, despite contrary indications	21	Yes (1.0)
18. Taking a peaceful, nonviolent approach to life	21	Yes (1.0)
19. Being relational, with commitments and time for people	21	Yes (1.0)
20. Understanding that death is as natural as living, and accepting it	21	Yes (1.0)
21. Making peace with one's circumstances	21	Yes (1.0)
22. Leading a balanced life	21	Yes (1.0)
23. A sense of humor	20	Yes (1.0)
24. Being focused on priorities	18	Yes (1.0)
25. Regular reading/study of the scriptures	18	Yes (1.0)

26. A willingness to work	18	Yes (1.0)
27. Enjoyment of the ordinary	18	Yes (1.0)
28. Being observant of the monastic schedule	17	Yes (1.0)
29. Having an appreciation of the past	17	Yes (1.0)
30. Regular worship with other people	17	Yes (1.0)
31. Being a friend to both men and women	15	Yes (1.0)
32. Keeping both the intellect and emotions under control	14	Yes (1.0)
33. Not being pushy	14	Yes (1.0)
34. Avoiding overwork and excessive stress	14	Yes (1.0)
35. Being passionate	13	Yes (.996)
36. Being calm and even-tempered	13	Yes (.995)

N = 26, Probability = 99% at .99 confidence level (99% of the questions are correct at the .99 level of confidence.)

The thirty-six SI domains (necessary SI attributes) were carried forward into Phase II, where they became the base from which a reliable and valid SI Scale was produced and correlated with data on health and well-being among a convenience sample of general population seniors—women and men, religious and non-religious, elder center residents and people living independently in their own homes. The remainder of this report is about the development and testing of the SI Scale.

II. The SI Scale: Translation

The first step to develop an SI scale was to translate the thirty-six Spiritual Integration (SI) domains into statements with meaning for a general public of seniors. We worked with ten lay people (fifty years and older) who are affiliated, for spiritual instruction and discipline, as oblates with St. Vincent Archabbey, Latrobe, PA. The senior monk who has served for more than ten years as Director of Oblates at St. Vincent Archabbey also participated, bringing the cohort for this stage to eleven. In this task, each participant was given a list of the thirty-six SI domains identified in Phase I, together with alternative statements intended to encapsulate the meaning of each domain. Participants ranked the alternatives from best to worst and added their own formulations.

Table 2.1 shows initial efforts made by the research team, and further item construction efforts made by Translation Task participants to encapsulate the meaning of SI Domain 1 (*being God-centered*). The first bulleted items (listed right below the numbered SI domain) are provisional statements that attempt to capture the cognitive structure of the domain in a way that will have meaning for the general population of seniors. In the case of Domain 1 (*being god-centered*), we supplied four provisional statements. The complete domain item list, with statement formulations, was provided to the eleven participants. In the example in Table 2.1, #1 and #5 are single statements offered by respondents 1 and 5. Items #7a and #7b are formulations made by respondent 7. Sub-columns 1-11 contain each respondent's rank order, within-domain, for the corresponding formulation. Thus, respondent 1 ranked the first three bulleted formulations 1-3 in order, ranked the fourth bulleted item 5th and her/his own formulation 4th. Rankings were averaged by formulation to derive a thumbnail index value to use as one tool in selecting which SI statements to refine and move forward to the next step in scale development.

Unranked bullet items below the solid line (there are two in the sample given below) are new formulations made by the researchers based on responses to the protocol.

Table 2.1: Translation Task, Lay Oblate Question Formulation Responses for SI Domain 1 (*Being God-centered*), with Post-protocol Items

Spiritual Integration Domain Item, with Suggested Encapsulations by Researcher (bullet items) and Respondents (#1, #5, #7)	Item Rank by Respondent										
	1	2	3	4	5	6	7	8	9	10	11
1. Being God-Centered											
> I try to be aware of God in everything I do and think **{1.78}**	1	1	0	1	0	3	2	3	3	1	1
>I am not always successful at keeping my actions and thoughts focused on God {**2.87**}	2	3	0	4	0	1		1	4	4	4
> I often think about and talk with God in the course of my daily activities **[2.33]**	3	2	0	2	0	2	3	2	2	2	3
> The first thing I do when I wake up is say a prayer to God **{3.00}**	5	0	1	3	0	4	4	4	1	3	2
#1 I recognize that I will and do make mistakes and continually ask God to sustain, forgive, and inspire me	4	3									
#5 Before sleep I try to center my thoughts on God											
#7 a. I am not always successful at keeping my actions and thoughts focused on God, and I, therefore, try to refocus. b. I try to be attentive to god's voice in every situation.							5 1				
> I try to be attentive to God in every situation > I often think about and talk with God in the course of my daily activities											

Through the feedback and refinement process illustrated in Table 2.1, we constructed a set of 109 SI statements.4

III. The SI Scale: Pretests

First Pretest

The final 109-item questionnaire was completed in September, 2001 and administered to a group of fifteen seniors of mixed religious affiliation at a Senior Center run by the Lutheran Church in Atchison, KS. For this and all subsequent SI pretests, and the final test, a 5-choice Likert scale was used, consisting of the following standard options: Strongly Agree, Agree, Neither Agree nor Disagree, Disagree, Strongly Disagree. A random number generator was used to sequence statements in the 109-item pretest instrument.

Summary statistics from the First Pretest are provided in Table 3.1 and Table 3.2. Cronbach's Alpha for this pretest is .88

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Table 3.1: 109- Item First Pretest Statistical Ranges and Alpha

Items	Item Total Correlation Range	Mean Range	Standard Deviation Range
1-109	-.41 - .79	1.20 - 4.14	.35 - 1.67

N of items =109
N of Respondents = 15
Cronbach's Alpha = .88

Table 3.2: Summary Statistics, Total Correlations

Correlation Range	Item N
.70 - .79	4
.60 - .69	5
.50 - .59	10
.40 - .49	12
.30 - .39	17
.20 - .29	22
.10 - .19	12
.00 - .09	5
-.01 - -.09	12
-.10 - -.19	4
-.20 - -.29	2
-.30 - -.39	3
-.40 - -.41	1

Total items = 109
N of respondents = 15

Of the original 109 items, thirty-six were discarded. The remaining seventy-three items were used to construct the next pretest, and two new items were added for a total of seventy-five items. Discussion of Second Pretest development, based on First Pretest results, is in the next subsection.

Second Pretest

Considerations in the selection of the seventy-five items for the Second Pretest included strength of the total correlation for each item, standard deviation, and SI domain representation. Twenty seven items with total item correlations .40 or higher were included. Of these, five that had standard deviations less than .60 were left unrevised from the First Pretest, while all others with a narrow standard deviation were revised. Where possible, revisions were intended to clarify the original statement by simplifying the item. In some cases the polarity (positive vs. negative) of the statement was reversed. One item with a correlation less than .40 was included without revision, while all others were revised. Twenty six items were unrevised from

the First Pretest Items that were judged important on the basis of domain content that had low positive total item correlations (fifteen items with correlations less than .20), or even negative ones (six items), were substantially rewritten. As a rule of thumb, items with strong positive correlations but narrow standard deviations were revised before being used.

Two new items were added to the Second Pretest to test a possible 37th domain (*contemplation*) for inclusion in the SI Scale development process. This was done because in determining the SI domains (Phase I), the domain titled *contemplation* failed to achieve consensus sufficient to be included in the final SI domain list, because a single high knowledge informant failed to free list it as a definition or behavior of spiritual integration. Had we removed this informant in the data cleaning stage of the consensus analysis, the contemplation domain would have made the list. Thus, on his own judgment the PI added two contemplative behavior questions in the 75-item Second Pretest. Neither item, as it turns out, made the Third Pretest cut, as will be seen below.

The final 75-item Second Pretest instrument was completed in February 2002 and administered to a group of thirty seniors of mixed religious affiliation living independently in the Naomi Community in St. Louis, Missouri, in March 2002. A summary of Second Pretest statistics is provided in Table 3.3 and Table 3.4. Cronbach's Alpha for this pretest is .91 (Table 3.3).

Table 3.3: 75-Item Second Pretest Statistical Range and Alpha

Items	Item Total Correlation Range	Mean Range	Standard Deviation Range
1 - 75	-.05 - .72	1.20 - 3.53	.41 - 1.26

N of Items = 75

N of Respondents = 30

Cronbach's Alpha = .91

Table 3.4: Summary Statistics, Total Correlations

Correlation Range	Item N
. 70 - .72	1
. 60 - .69	8
. 50 - .59	13
. 40 - .49	9
. 30 - .39	12
. 20 - .29	12
. 10 - .19	13
.00 - .09	6
-.01 - -.05	1
Item Total	75

N of Respondents = 30

Third Pretest

Criteria for selection of statements for the 41-item Third Pretest were the same as discussed earlier, and question editing and rewriting was also handled in the same way. Among items in the Second Pretest with total item correlations .40 or higher, twenty-four were included in the Third Pretest. Of these, two had standard deviations less than .60, and one of these was left unrevised from the Second Pretest. Five items with correlations less than .40 were included without revision. Fourteen items were revised, and total twenty-seven were left unchanged.

Three of the original thirty-six domains are not represented in the Third Pretest. Seven domains have two questions each. Most are represented by a single question. The 37th domain, contemplation, that was added for the Second Pretest was dropped due to low correlation values. No effort was made to rewrite these questions.

The final 41-item questionnaire was completed in mid-2002 and administered to 121 female and male seniors of mixed religious affiliation living independently in a number of assisted living communities and their own homes in the metro St. Louis, Missouri, counties of St. Louis, St. Charles, and Franklin. A summary of statistics from the Third Pretest is provided in Table 3.5 and Table 3.6. Cronbach's Alpha for this pretest is .83 (Table 3.5).

Table 3.5: 41-Item, Third Pretest Statistical Ranges and Alpha

Items	Item Total Correlation Range	Mean Range	Standard Deviation Range
1-41	-.04 - .56	1.65 - 3.19	.61 - 1.36

N of Items = 41

N of Respondents = 121

Cronbach's Alpha = .83

Table 3.6: Summary Statistics, Total Correlations

Correlation Range	Item N
.50 - .56	6
.40 - .49	7
.30 - .39	6
.20 - .29	10
.10 - .19	8
.00 - .09	3
.00 - -.04	1
Total Items	**41**

N of Respondents = 121

Twenty six of the original forty-one items were discarded. The remaining fifteen items were selected for the final SI Scale.

IV. The SI Scale

Questionnaire Administration

The Third — and final — Pretest set of forty-one items was administered in a single questionnaire that also included the SF-36 (Ware 2000), Fetzer Brief Multidimensional Measure of Religiousness and Spirituality (Fetzer 1999), a Single Item Life Quality Test (Inglehart 1986), the Affect-Balance Test (Bradburn 1969), and the Center for Epidemiologic Studies Depression Scale (Radloff 1977, 1991; Hann 1999). The total instrument consisted of 124 questions. Seniors required from twenty to seventy minutes to complete the questionnaire, with most completing it in less than one hour. Data collected using this instrument were used for the Third Pretest and for reliability and validity testing of the final scale, as well as for correlation with the four health tests with which data were collected.

Demographics

The final questionnaire was administered to 168 seniors ranging in age from 56 to 96. The average age was 78, with 154 reporting. Fifty four of those who provided their age were males, 107 females, and 7 did not respond. Eighty-five Protestants participated, comprising 56%; thirty-six Catholics comprised 24%; Ethical Society members (Ethical Humanists) totaling 14 comprised 9%; eight Jews comprised 5%; five Unitarians comprised 3%; one Buddhist comprised 1%; one Agnostic comprised 1%; and two identified themselves as "Other", totaling 1%. Fourteen female members of an active, non-contemplative Catholic religious order (none were Benedictine, Trappist, or monastic of any kind) made up 8% of the survey. Representation among Protestants who reported a denomination included, Baptist 60% (fifty), United Church of Christ 16% (thirteen), Presbyterian 10% (eight), Methodist 6% (five), Lutheran 5% (four), Episcopalian 1% (one), Evangelical 1% (one), and Unity 1% (one). While a majority of participants were Protestant, when different denominations are included along with non-Protestants, no single religious group dominated participation, and a considerable number of Ethical Humanists and Unitarians, 13% (19) combined, participated.

SI Scale Item Selection

From among the forty-one items in the Third SI Pretest, fifteen items were selected for the SI Scale. The final SI item set is in Table 4.1, which states each item as administered, minus the five Likert scale choices.

TABLE 4.1: SI Scale, Final Item Set: Complete Statements as Administered

1. I don't lose hope when things get difficult.
2. I don't like taking risks.
3. The best thing I can do for suffering people is leave them alone.
4. I don't have strong interests of my own.
5. I don't see the meaning in life.
6. At this point in my life I know as much as I need to about most things.
7. I often fail to be forgiving of people who have wronged me.
8. I don't like being around other people.
9. I'm not one to pray.
10. I like listening to the ideas of people whose lives and ideas are different from mine.
11. For the most part, life is depressing.
12. In my schedule there is time for work, recreation, and other important activities.
13. I think about God in the course of my daily activities.
14. I am on guard to make sure people don't take advantage of me.
15. I try to keep my thoughts, words, and actions wholesome.

N of Item Pool = 41

Table 4.2 provides total item correlations and standard deviations, computed using item N = 41, for the fifteen items (Table 4.1) selected to be tested for a final SI Scale. Criteria for item selection for the SI Scale included item total correlation values,

standard deviations, and importance of the domain represented by the item as judged from preceding stages in the research, beginning with ethnographic research and progressing through the statistical analysis in this section. In Table 4.2, the 41- Item Number column references the Third Pretest item number. Numbers in the SI Item Number column correspond to the final SI Scale items listed in Table 4.1.

Table 4.2: Tentative Spiritual Integration Scale Statistics from 41-Item Third Pretest

41 Item Number	SI Item Number	SI Item Description and Domain	Correlation	Std. Dev.
1	1	Hope (Domain 7)	.52	.76
6	2	Takes Risk (Domain 13)	.25	1.04
8	3	Concern for Suffering of Others (Domain 2)	.39	.90
11	4	Passion (Domain 35)	.28	.93
16	5	Meaning of Life (Domain 4)	.47	.96
18	6	Growth-oriented (Domain 9)	.39	1.00
22	7	Forgiving (Domain 5)	.38	1.01
23	8	Relational (Domain 19)	.56	.81
24	9	Prayerful (Domain 10)	.53	1.34
27	10	Accept Difference (Domain 14)	.28	.80
28	11	Positive Attitude (Domain 11)	.51	.88
31	12	Balance (Domain 22)	.19	.83
36	13	God-centered (Domain 1)	.54	1.35
37	14	Generous (Domain 15)	.37	1.00
41	15	Moral Sense (Domain 3)	.49	.76

N of items = 41

N of cases = 121

Cronbach's Alpha = .83 (see also table 3.5)

These fifteen items were carried forward for analysis after the total 168 survey interviews were completed.

SI Scale Reliability

Reliability statistics for the 15-item SI set are in Table 4.3. Reliability was computed using only data from respondents who completed all fifteen items. Cronbach's Alpha for the 15- item set (N=134) is .79. Item statistics for the final SI Scale set are in Table 4.3.

Table 4.3: Spiritual Integration Scale Statistics (Items Abbreviated)

SI Item	Corrected Item-Total Correlation	Standard Deviation	Cronbach's Alpha if Item Deleted
1. I don't lose hope	.41	.76	.78
2. I don't like risks...	.23	1.05	.79
3. I leave suffering people alone....	.33	.89	.78

Table 4.3 (continued):

4.	I don't have interests of my own...	.27	.93	.79
5.	I don't see the meaning in life...	.53	.99	.77
6.	I know as much as I need to...	.43	1.01	.78
7.	I fail to be forgiving....	.35	1.04	.78
8.	I don't like being around others...	.57	.84	.77
9.	I'm not one to pray...	.56	1.33	.77
10.	I like people with different ideas...	.28	.81	.79
11.	Life is depressing...	.40	.85	.78
12.	I have time for different activities...	.16	.83	.80
13.	I think about God...	.59	1.36	.76
14.	I am on guard....	.39	.99	.78
15.	I try to keep wholesome...	.47	.79	.78

Cronbach's Alpha = .79   Scale mean = 31.25
N of items = 15   Scale standard deviation = 7.40
N of Respondents = 134   Scale variance = 54.76
Item mean = 2.08
Item variance = .19

Item 12, which reads "in my schedule there is time for work, recreation, and other important activities", is the weakest item in the SI Scale (15-item SI Scale correlation = .16; 41-item pool correlation = .19). Removing this item would yield only a small Cronbach's Alpha improvement (.79 to .80) in the SI Scale. The item represents balance, which is a core value in monastic spiritual integration and culture, and for this reason the first author opted to include it in the SI Scale. The item raises a number of interesting questions that remain unresolved. Do activity constraints among seniors limit their ability to alternate activities? Would a more youthful demographic sample respond to item 12 in the same way? Is it likely that a more youthful population would score similar to seniors on the SI Scale?

SI Scale Validity

As an independent measure of the SI Scale validity, we chose the Fetzer Brief Multidimensional Religiousness and Spirituality Measure, called *Fetzer 1999* hereafter (Fetzer, 1999). Regression analysis of the SI scale against twenty-nine items representing eight subscales (see Table 4.4) of the Fetzer 1999 yielded R^2 = .44. Thus there is 44% overlap of the SI Scale with the Fetzer 1999 measure, with 36% of SI both non-overlapping with Fetzer and not explainable by error (σxx = .80). From this we conclude that there is sufficient overlap with Fetzer to lend validity to the SI Scale but insufficient overlap to be redundant. The two scales would appear to measure different phenomena.

The Fetzer 1999 measure is multifaceted, made up of several subscales within the larger scale. Table 4.4 provides statistics on the relationship of the SI Scale with each dimension of the Fetzer measure used here, as well as overall statistics.

Table 4.4: Regression Coefficients

Fetzer Dimension (FMMRS)	Unstandardized Coefficients	Significance
Daily Spiritual Experience (1-6)	.09	.10
Values and Beliefs (7-8)	-.07	.37
Forgiveness (9-11)	.20	.05
Religious Practice (12-14)	.01	.68
Religious Coping (15-19)	.23	.01
Religious Support (20-23)	-.08	.17

Table 4.4 (continued):

Commitment (24)	.06	.18
Organizational Religiousness (25-29)	-.01	.62

N=134
R=.66
R^2=.44 (44%)

Six out of eight Fetzer 1999 dimensions in the regression show no significant relationship with the SI scale. Two FMMRS dimensions have significant positive correlations with the SI scale (Forgiveness, .20, significance at the .05 level; Religious Coping, .23, significance at the .01 level). Standing alone, however, these do not explain a great deal of the variance. Overlap with the Fetzer 1999 indicates that the SI Scale is a valid measure of a kind of spirituality different from that measured by Fetzer 1999.

V. SI Scale Correlations with Health Scales

While the first purpose of Phase II funding was to try to develop a reliable, valid SI Scale, the second was to conduct measurements to assess its potential as a tool for health research. For this second purpose, we selected four well-tested instruments, each of which is discussed below in relation to the 15-item SI Scale.

SF-36 General Health Survey

All respondents were asked to answer questions about their health. As discussed above, three self-report instruments were administered to assess health. The 36-item SF-36 Health Survey (Ware 2000a) is in wide use today.

The SF-36 measures health in eight areas: 1) Physical Functioning, ten items; 2) Role Physical Functioning (ability to physically function in one's normal role), four items; 3) Bodily Pain, two items; 4) General Health, five items; 5) Vitality, four items; 6) Social Functioning, two items; 7) Role Emotional (ability to emotionally function in one's normal role), three items; 8) Mental Health, five items. It also measures a ninth area, Reported Health Transition, one item (Ware 2000b, 3:2-3). Table 5.1 provides the results of the analysis correlating responses to the 15-item SI Scale with responses to each area in the SF-36.

Table 5.1: Pearson Correlations of SI Scale with SF-36

SF-36	Pearson Correlation	Significance (2-tailed)	N
Physical Functioning (SF 3 a-j)	.06	.47	165
Role Physical (SF 4 a-d)	.08	.34	163
Bodily Pain (SF 7,8)	-.01	.92	162
General Health (SF 1, 11 a-d)	.15	.06	164
Vitality (SF 9a, e, g, i)	.20*	.01	160
Social Functioning (SF 6, 10)	.22**	.01	162
Role Emotional (SF 5a-c)	.04	.61	162
Mental Health (SF 9 b-d, f,h)	.31***	.00	162
Health Transition (SF 2)	-.03	.70	163

* r^2 = .04
** r^2 = .05
*** r^2 = .10

The data show significant positive correlations between the SI Scale and three out of eight SF-36 health areas, Vitality (.20), Social Functioning (.22), and Mental Health (.31). However, the r^2 values for these correlations show small values for the variance that is shared in common, indicating positive but fairly weak relationships between the SI Scale and Vitality, Social Functioning, and Mental Health in the SF-36. Of these, however, the SI Scale relates most interestingly to the SF-36 Mental

Health measure ($r^2 = .10$) with 10% of variance in common. There is no significant relationship between the SI Scale and the other five SF-36 areas, or with Health Transition.

Affect Balance Scale

Table 5.2 shows the relationship between the SI Scale and Affect Balance Scale, consisting of five positive and five negative feeling scores (Bradburn 1969).

Table 5.2: Pearson Correlations of SI Scale with Affect Balance Scale

Affect Balance	Pearson Correlation	Significance (2-tailed)	N
Positive Affect	.19*	.05	153
Negative Affect	-.21**	.05	149

* $r^2 = .04$
** $r^2 = ..04$

There is a significant positive correlation between the SI Scale and the Positive side of the Affect Balance Scale and conversely a significant negative correlation between the SI Scale and Negative Affect, as we would expect. However, the r^2 values indicate that relatively little of the common variance is explained by these correlations.

Center for Epidemiologic Studies Depression Scale (CESD)

The CESD is a short self-reporting scale developed by the Center for Epidemiologic Studies to assess depression in the general population. It has been in use since 1977 (Radloff 1977). There is a positive, non-significant correlation between performance on the CESD and the SI scales, as shown in Table 5.3.

Table 5.3: Pearson Correlations of SI Scale with CESD Scale

Affect Balance	Pearson Correlation	Significance (2-tailed)	N
CESD	.10	.38	166

Single Item Quality of Life Measure

The single item quality of life measure has been used extensively in the Euro Survey (Inglehart and Rabier 1986), where it is used to assess self-report happiness, as a quality of life measure for correlation with a wide range of socio-economic variables across the Continent and Britain. It has also been used in the United States and elsewhere. Table 5.4 compares the SI Scale and Single Item Measure.

Table 5.4: Pearson Correlations of SI Scale with the CESD Scale

Affect Balance	Pearson Correlation	Significance (2-tailed)	N
Single Item Life Quality Measure	.27*	.001	160

* $r^2 = .07$

There is a significant positive correlation between the SI Scale and the Single Item Measure, but the relationship shows little variance in common ($r^2 = .07$).

Fetzer 1999: Fetzer Brief Multidimensional Measure of Religiousness and Spirituality

Table 5.5 shows that all but three domains (Religious Support, Organizational Religiousness, and Overall Self-Ranking) from the individual domains in Fetzer 1999, correlate strongly with the SI Scale, with corresponding modest to strong r^2 values.

Table 5.5: Pearson Correlations of SI Scale with Fetzer 1999 Measure Domains

Fetzer 1999	Pearson Correlation	r^2	Significance (2-tailed)	N
Daily Spiritual Experience	.55	.30	.00	165
Values/Beliefs	.43	.18	.00	158
Forgiveness	.52	.27	.00	158
Private Religious Practice	.50	.25	.00	158
Religious and Spiritual Coping	.56	.31	.00	163
Religious Support	.10	.01	.22	158
Commitment	.38	.14	.00	156
Organizational Religiousness	.21	.04	.01	157
Overall Self Ranking	.21	.04	.01	157

Simple correlations between the SI Scale and the shortened domains in the Fetzer 1999 measure are generally strong in the positive direction, with substantial but not excessive portions of variance held in common.

VI. Conclusion

The Phase II results of the Spiritual Integration Project suggest several strong conclusions. First, a reliable Spiritual Integration Scale has been developed among a religiously and spiritually diverse sample of seniors, through multiple stages of internal test and retest protocols and analyses.

Second, the SI Scale is a valid measure of the kind of generalized spirituality that it assesses. There is both strong overlap and independence compared with the Fetzer Multidimensional Measure, which possesses both general and specific religiousness elements (Fetzer, 1999).

Third, judging from the diversity among respondents, the SI Scale may be useful in measuring the spiritual orientation, outlook, and behaviors of a wide cross-section of religious and non-religious people alike. Its versatility in this regard is likely to be its strength.

Fourth, aggregate responses on the SI Scale do not predict responses in most areas of the SF-36 health survey. In the three out of eight SF-36 areas with modest positive correlations, a substantial portion of the variance is shared with only one, Mental Health, where 10% of the variance is explained. The same is true for other mental health measures used here; there are low to modest positive correlations, negative where negative responses predicts better health (cf. Affect Balance Negative Feelings Scale), none of which share substantial variance with the SI Scale.

Fifth, it is important to note that the SF-36 does not measure prayer, church attendance, or other specifically religious behaviors of the kind frequently used in studies that seek to relate health and religious practice. The SI Scale is not a religious scale *per se*, though those qualities that it scores highly are ones that religiously committed monastics in the Benedictine and Trappist Cistercian orders identify among their most core spiritual values.

Sixth, we suggest that while the SI Scale may not be a useful predictor of good health, it may be a strong predictor of such capacities as the ability to find meaning in one's sufferings without resorting to self-pity or mean-spiritedness, while sustaining a strong connection to others, faith in humanity, openness to diversity, and a lifelong capacity for growth. It appears that it may not, based on these first results, predict such highly valued states as life without physical and emotional suffering. Perhaps the SI Scale will predict, instead, the ability of people to take the physical and emotional suffering that comes with aging in stride, a powerful quality-of-life indicator that has been tested and found beneficial through eighteen centuries of monastic experience. Further research will be required to sort this out.

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