

Psychometrics and Standardization of the Hindi Adaptation of the Daily Spiritual Experience Scale

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Rec date: January 18, 2016; Acc date: March 08, 2016; Pub date: March 15, 2016

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Abstract

The Hindi version of Daily Spiritual Experience Scale (DSES) was administered to 947 adults to determine the psychometric characteristics i.e. reliability, validity and norms. Cronbach's Alpha of the scale was found 0.86. Content validity of the scale was verified by a number of experts, academicians and professionals. Good correspondence was found to exist between the scale results and the considered judgments of experienced observers. Using a more structured method, confirmatory factor analysis provided evidence of the convergent and discriminate validity. Gender norms applicable to male and female, and religion based norms applicable to Hindus and Muslims for DSES were developed using percentile ranks.

Keywords: Daily spiritual experience scale; Spirituality assessment

Introduction

The purpose of this research was to confirm as to whether the Daily Spiritual Experiences Scale (DSES) is a comprehensive and reliable scale for measuring daily spiritual experiences among Hindu and Muslim religious devotees in India. This scale is designed to help researchers and practitioners in assessing the current state of Daily Spiritual Experiences (DSE). The Daily Spiritual Experiences Scale (DSES) is a uni-dimensional scale. This scale was designed to assess ordinary experiences of connection with the transcendent in daily life. It includes constructs such as awe, gratitude, mercy, sense of connection with the transcendent and compassionate love. It also includes measures of awareness of discernment/inspiration and a sense of deep inner peace.

One of the qualities of religious/spiritual people is to have some sacred or spiritual/religious experiences. Spiritual/religious experiences are the subjective feeling of the spiritual/religious person in whom he experiences that he is being connected to all of the other living beings in this universe, created by the universal power, and also connected to that universal power which is transcendental in nature. Such an experience often involves arriving at some insight or knowledge that is previously unavailable to the person. Religious experience generally brings understanding, complete or partial, of issues of a fundamental character that may have been a cause (whether consciously acknowledged or not) of alienation or anguish to the person for an extended period of time. This may be experienced as a form of healing, enlightenment or conversion. Having these spiritual/religious experiences people gradually makes progress on the path of spiritual development.

Concept and definitions of spiritual experience

William James (1902/1958) used the term "religious experience" in his book entitled "The Varieties of Religious Experience" [1]. A religious experience (sometimes known as a spiritual experience, sacred experience, or mystical experience) is a subjective experience which is interpreted within a religious framework [2].

Religious experiences are classified into two classes.

Mediated

In the mediated religious experience, the believer experiences the sacred through the mediators such as special persons, rituals, religious groups, the natural world or the totemic objects [3].

Immediate

In the immediate religious experience the believer experiences the sacred without any intervening mediator or agency. The divine or deity is experienced directly.

Underwood and Teresi, define spiritual experiences as, "the perception of the transcendent and the perception of interaction with, or involvement of the transcendent in life" [4]. Hinterkopf defines "spirituality or spiritual experience (is) a subtle, bodily feeling with vague meanings that brings new, clearer meaning involving a transcendent growth process" [5].

The Spiritual Science Research Foundation [6] defines 'experience' which is experienced through the medium of the five senses, intellect and mind. For example, the experience of eating one's favorite dish, resolving a problem at work by using one's intellect and feeling of love for one's child etc., fall into the category of an 'experience'. Experiencing something which is beyond the comprehension of the five senses, intellect and mind fall into the category of 'spiritual experience'. Even if one can perceive an event through the five senses,

intellect and mind but the reason behind it is beyond the gross intellect of mankind, it still composes a spiritual experience.

We experience the whole world through the five senses, intellect and mind. Corresponding to the five senses, intellect and mind that we are well aware of, we have five subtle senses also, a subtle intellect and subtle mind and, which when activated or developed, help us to experience the subtle world. This experience of the subtle world is known as a 'spiritual experience'. The SSRF defines the 'subtle world' as the world which is beyond the understanding of the five senses, intellect and mind. The subtle world refers to the unseen world of angels, heaven etc which can only be perceived through our sixth sense.

According to SSRF, the intellectual or theoretical knowledge in worlds has only 2% importance whereas 98% importance lies in experiencing those worlds. When one undertakes an appropriate spiritual practice on the basis of the basic principles of spiritual science then he/she makes spiritual progress and gets spiritual experiences. Spiritual practices bridge the gap between intellectual or theoretical knowledge (which are obtained from the books) and spiritual experiences. The reason for this is that spiritual experiences are mostly discussed during the spiritual meetings. Seekers, who attend the spiritual meetings, realize that what is taught there in terms of spiritual knowledge is not mere information but that it can be actually experienced. Theoretical knowledge only assists those curious about the spiritual science in gaining some belief. It is a very necessary step in the stages of one's spiritual development, however, when one gets spiritual experiences, develops faith in the theoretical knowledge also.

Spiritual experiences are the indicators of one's spiritual progress. However, spiritual progress may not begin as soon as one begins appropriate spiritual practice. The reason behind this is that spiritual practices may be used, instead of solely for spiritual progress, to reduce the intensity of severe negative destiny. As a result, initially spiritual progress does not occur and hence one does not get spiritual experiences. However spiritual practices enable us to overcome this initial phase [6].

William [1] considers the following four characteristics of religious/mystical experience which he explains in *The Varieties of Religious Experience*.

Transient

The experience is temporary; the individual soon returns to a "normal" frame of mind. It is outside our normal perception of space and time.

Ineffable

The experience cannot be adequately put into words.

Noetic

The individual feels that he or she has learned something valuable from the experience. It gives us knowledge that is normally hidden from human understanding.

Passive

The experience happens to the individual, largely without conscious control. Although there are activities, such as meditation, that can

make religious experience more likely, it is not something that can be turned on and off at will.

Materials and Method

Participants

Participants for the study were 947 religious devotees. Of these, 597 were Hindus (471 Male and 179 Female) and 350 were Muslims (179 Male & 171 Female). Hindus were randomly selected from the Maha-Kumbh Mela- 2013 (a great religious gathering for Hindus) held in Allahabad and Muslims were randomly selected from different mosques situated in Aligarh district of U.P. Sixty-three percent devotees were Hindus (597) and thirty-seven percent devotees were Muslims (350). Their age varied from 21 to 60 with mean age 35.40 years.

Description and adaptation of the scale

The Daily Spiritual Experiences Scale (DSES) was originally developed by [4]. Details on the English version were published in some articles [7-12]. Hindi translation of the DSES was done in 2012 by Vibhuti Gupta and Lynn Underwood. Hindi version of DSES was used in this research to determine the psychometric properties in Hindu and Muslim devotees. It is a uni-dimensional scale. The DSES is a 16-item self-report scale along a 6-point Likert scale (item 1 to 15) anchors labeled; Many times in a day, Every day, Most days, Some days, once in a while and Never and 4 point- Likert scale (item 16) labeled Not at all, Somewhat close, Very close and As close as possible. The DSES is highly reliable (internally consistent) with Cronbach's alpha ranging from 94 to 95 with GSS.

First draft and item analysis

To determine the psychometric properties of the scale, this scale was administered on a representative sample of 947 (597 Hindus and 350 Muslim) religious devotees. After scoring the scale of each examinee, the sheets were arranged in the order of highest scoring to lowest scoring. From this order, two groups, one of 27% from highest scoring and other of 27% from the lowest scoring were selected. In these two groups inter-correlation matrix was examined in order to overcome existence of multi-co-linearity (i.e. items that are highly correlated) and singularity (i.e. items that are perfectly correlated) in the scale.

No.	Dimensions	No. of Items	Total No. of items
1	Spiritual Daily Experience	1 – 15	15
DSES Total		1 – 15	15

Table 1: Daily spiritual experience dimension and number of items.

In addition to inter-correlation matrix, 'Determinant' of the R-matrix was estimated and it was greater than 0.00001. Sampling adequacy was also carried out and found to be greater than 0.50. On this basis item No. 16th was rejected and the final draft of the scale had 15 items. In order to confirm the dimensionality, Confirmatory Factor Analysis (CFA) was carried out and results are shown in following tables. The description of dimension is given in Table 1.

Many times a day	Every day	Most days	Some Days	Once in a while	Never
6	5	4	3	2	1

Table 2: Showing scoring system.

The test sheets were scored as per scoring criterion given in Table 2. The responses of all 15 items were added to generate overall DSES score. Thus, the minimum possible score for DSES will be 15 and the maximum 90. Higher the score indicates high daily spiritual experiences and lower the score indicates low daily spiritual experiences.

Item	Descriptive Statistics for Items				Descriptive Statistics for Scale				
	No.	Range	Mean	Median	SD	Scale Mean if item deleted	Scale Variance if item deleted	Item correlation	total
DSe1	1-6	5.24	5	0.977	65.17	107.403	0.52		0.85
DSe2	1-6	4.61	5	1.354	65.8	104.851	0.44		0.854
DSe3	1-6	5.05	5	1.012	65.36	106.459	0.546		0.849
DSe4	1-6	5.03	5	0.98	65.38	105.792	0.601		0.847
DSe5	1-6	4.99	5	1.041	65.42	105.462	0.577		0.847
DSe6	1-6	4.8	5	1.177	65.62	103.862	0.568		0.847
DSe7	1-6	4.91	5	1.33	65.5	106.411	0.39		0.856
DSe8	1-6	4.87	5	1.113	65.54	104.94	0.557		0.848
DSe9	1-6	4.59	5	1.304	65.82	100.301	0.646		0.842
DSe10	1-6	4.42	5	1.398	65.99	99.883	0.61		0.844
DSe11	1-6	4.37	5	1.376	66.04	100.903	0.582		0.845
DSe12	1-6	4.89	5	1.206	65.52	105.801	0.469		0.852
DSe13	1-6	4.44	5	1.336	65.97	104.574	0.458		0.852
DSe14	1-6	3.54	4	1.607	66.88	106.9	0.283		0.865
DSe15	1-6	4.66	5	1.402	65.76	105.443	0.398		0.856

Table 3a: Showing descriptive statistics of items, Scale Alpha. * $r = .05$ ($p < .05$); $.08$ ($p < .01$).

Statistics for Scale	Scale Statistics					Alpha Coefficient		No. of Items
	Mean	Median	Mode	Variance	SD	Raw Items	Standardized items	
	70.41	71	70.9	118.88	10.9	0.86	0.87	

Table 3b: Descriptive statistics of scale and reliability (Cronbach's' Alpha).

The Cronbach's Alpha of the scale was found 0.86. The internal consistency of the scale is quite high and this gives a support that the scale is highly reliable.

Validity

Content validity of the scale was verified by number of experts, academicians and professionals. Good correspondence was found to

Results

Reliability

The considerations of validity and reliability typically are viewed as essential elements for determining the quality of any standardized test. For establishing the internal consistency reliability, Cronbach's alpha is used and shown along with other descriptive statistics in Table 3a and 3b.

exist between the scale results and the considered judgments of experienced observers.

There are various methods to establish construct validity of the tool. But majority of them are having limitations as role of time and existence of subjectivity in experts' ratings. To overcome these limitations, Exploratory Factor Analysis (EFA) followed by Confirmatory Factor Analysis (CFA) was used to establish and confirm the construct validity of the scale. For testing multi-co linearity and

singularity 'Determinant' of the R-matrix was estimated and it was 0.007 which is greater than 0.00001. Kaiser-Meyer-Olkin Measure of Sampling Adequacy was also estimated and found to be greater than 0.50 as required in both cases. The percent of variance accounted by the uni-factor explained 59.81% of the total variance. The construct validity of the scale is highly satisfactory.

Item	Model Estimates			
	Parameter	Standard	t'	Prob.
(Dim1)-1->[dsse1]	0.573	0.03	18.794	0.001
(Dim1)-2->[dses2]	0.668	0.044	15.3	0.001
(Dim1)-3->[dses3]	0.611	0.031	19.489	0.001
(Dim1)-4->[dses4]	0.682	0.029	23.363	0.001
(Dim1)-5->[dses5]	0.688	0.032	21.817	0.001
(Dim1)-6->[dses6]	0.755	0.036	21.02	0.001
(Dim1)-7->[dses7]	0.563	0.044	12.879	0.001
(Dim1)-8->[dses8]	0.674	0.035	19.518	0.001
(Dim1)-9->[dses9]	0.92	0.039	23.79	0.001
(Dim1)-10->[dses10]	0.922	0.042	21.762	0.001
(Dim1)-11->[dses11]	0.843	0.043	19.819	0.001
(Dim1)-12->[dses12]	0.561	0.039	14.323	0.001
(Dim1)-13->[dses13]	0.589	0.044	13.479	0.001
(Dim1)-14->[dses14]	0.422	0.054	7.751	0.001
(Dim1)-15->[dses15]	0.563	0.046	12.166	0.001

Table 4: Showing model estimates for DSES. * t = 3.098 (p < 0.001).

Using a more structured method, confirmatory factor analysis provides evidence of the convergent and discriminant validity. The model summary for confirming the emergence of each item in the uni-

Stanine	Percentile Ranking (Range)	Raw Score (DSE)								
		Hindu			Muslim			Overall		
		Male	Female	Overall	Male	Female	Overall	Male	Female	Overall
1	1 to 4	≤ 48.00	≤ 49.20	≤ 48.92	≤ 47.60	≤ 55.76	≤ 52.00	≤ 48.00	≤ 53.04	≤ 50.92
2	5 to 11	48.01 - 57.09	49.21 - 57.0	48.93 - 57.0	47.61 - 55.8	55.77 - 60.0	52.01 - 58.0	48.01 - 57.0	53.05 - 59.0	50.93 - 58.0
3	12 to 23	57.10 - 64.0	57.01 - 61.0	57.01 - 63.0	55.81 - 61.0	60.01 - 65.0	58.01 - 63.0	57.01 - 63.0	59.01 - 63.0	58.01 - 63.0
4	24 to 40	64.01 - 69.0	61.01 - 66.0	63.01 - 68.0	61.01 - 66.0	65.01 - 70.0	63.01 - 68.0	63.01 - 68.0	63.01 - 68.0	63.01 - 68.0
5	41 to 60	69.01 - 74.0	66.01 - 70.0	68.01 - 73.0	66.01 - 73.0	70.01 - 76.0	68.01 - 74.0	68.01 - 74.0	68.01 - 73.0	68.01 - 73.0
6	61 to 77	74.01 - 88.0	70.01 - 77.0	73.01 - 79.0	73.01 - 78.0	76.01 - 81.0	74.01 - 79.0	74.01 - 79.0	73.01 - 79.0	73.01 - 79.0

dimension estimated through Confirmatory Factor Analysis (CFA) and is given in Table 4.

The parameter estimates for each item is highly significant as probability to reject the hypothesis was (p<0.001) level of significance. The summary statistics of Confirmatory Factor Analysis (CFA) for the scale is given in Table 5.

Parameters	Values
Discrepancy Function	1.099
Maximum Residual Cosine	0
Maximum Absolute Gradient	0
ICSF Criterion	0
ICS Criterion	0
ML Chi-Square	1039.725
Degrees of Freedom	90
p-level	0
RMS Standardized Residual	0.068

Table 5: Showing basic summary statistics.

Maximum Likelihood Chi-square is highly significant as p value is less than 0.001, this substantiate that all 15 items of the scale are measuring single construct and it can be concluded that this scale is uni-dimensional and may be labelled as "Daily Spiritual Experience".

Norms

Gender norms applicable to male and female, and religion based norms applicable to Hindus and Muslims for DSES were developed using percentile ranks and are shown in Tables 6. A percentile (or a centile) is a measure used in statistics indicating the value below which a given percentage of observations in a group of observations fall. The term percentile and the related term percentile rank are often used in the reporting of scores from norm-referenced tests.

7	78 to 89	88.01 - 85.0	77.01 – 83.0	79.01 – 84.0	78.01 82.0	-	81.01 – 85.0	79.01 – 84.0	79.01 84.0	-	79.01 – 84.0	79.01 – 84.0
8	90 to 96	85.01 - 90.0	83.01 – 90.0	84.01 – 90.0	82.01 88.0	-	85.01 – 88.0	84.01 – 88.0	84.01 90.0	-	84.01 – 88.0	84.01 – 90.0
9	97 to 100	≥ 90.01	≥ 90.01	≥ 90.01	≥ 88.01		≥ 88.01	≥ 88.01	≥ 90.01		≥ 88.01	≥ 90.01

Table 6: Showing religion, gender-wise and overall norms for daily spiritual experiences.

The interpretation of norms as given in Table 6 can be made using the Table 7 and is valid for male and female Hindu as well as Muslim devotees.

Stanine	Percentile Ranking (Range)	Grade	Level of DSE
1	1 to 4	I	Extremely Low (Negative)
2	5 to 11	H	Slightly Low (Negative)
3	12 to 23	G	Moderately Low (Negative)
4	24 to 40	F	Low (Negative)
5	41 to 60	E	Average/Moderate (Neutral)
6	61 to 77	D	High (Positive)
7	78 to 89	C	Slightly High (Positive)
8	90 to 96	B	Moderately High (Positive)
9	97 to 100	A	Extremely High (Positive)

Table 7: Showing norms interpretation of the daily spiritual experience (dse).

Religion	Gender								
	Male			Female			Overall		
	Mean	SD	N	Mean	SD	N	Mean	SD	N
Hindu	70.9	11.24	418	68.8	10.56	179	70.27	11.07	597
Muslim	68.84	11.19	179	72.54	9.67	171	70.65	10.62	350
Overall	70.28	11.25	597	70.63	10.29	350	70.41	10.9	947

Table 8: Showing descriptive statistics for DSES gender and religion wise.

Conclusions

1. Reliability, validity and stability data based on 947 religious devotees revealed that DSES has quite satisfactory psychometric characteristics. It can be concluded that the DSES is highly reliable and valid to measure the daily spiritual experiences among the followers of Hindu and Muslim religions.

2. The confirmatory factor analysis provided evidence of the convergent and discriminant validity.

3. The construct validity of the DSES is highly satisfactory.

4. The findings of the present study showed that the Hindi version of DSES can be used for research purposes.

For example, if a male examinee secured a score of 64 and in Table 6 this score belongs between 24th to 40th percentile ranks which can be labelled as “Low Negative” DSEs. Similarly, other norms viz. Normalized T-score, Z-score, etc. can be developed using the Table 8 and interpretation about daily spiritual experiences gender and religion wise may be made.

Discussion

The objective of the survey was to determine the psychometric characteristics, i.e. reliability, validity, and norms; and confirmatory factor analysis of the DSES among Indian population (Hindus and Muslims). The analysis of the internal consistency and item correlations demonstrated the adequate reliability of the DSES. Using a more structured method, confirmatory factor analysis provided evidence of the convergent and discriminant validity. For the practical use of the DSES, gender norms applicable to male and female, and religion based norms applicable to Hindus and Muslims were developed using percentile ranks.

Acknowledgement

We acknowledge the cooperation and support extended by the developer of the DSES, Dr. Lynn Underwood, President, Research Integration, lynnunderwood@researchintergation.org Honorary Fellow, University of Liverpool, UK for giving permission to us to standardize the Hindi version of the Daily Spiritual Experience Scale on the Indian population. Permission to copy and use the scale is required from Dr. Underwood.

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