

Simplified Kundalini Yoga: Scale Development

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Abstract

The study includes the concept of Kundalini - a coiled serpent power from the Eastern philosophy of yoga. Generally looked up as one of the mystical concept by common man. The main objective of the paper is to develop a scale which can simplify the concept of kundalini. We have taken a sample of 310 out of 1500 yoga students and scholars from more than five universities of India. We tested the facial validity, Content Validity Index by four experts and further factor loadings (promax rotation) of items which were considered suitable for the intended results. The scale was tested and verified with dimensional reduction through EFA by SPSS 25 version with values Cron-bach alpha 0.94 and variance 51.87%. Sample adequacy was found the good with KMO's value 0.95. and Bartlett's test of sphericity with chi square value approx. 2794.56 with significance level $P < 0.001$. Overall Simplified Kundalini Scale's results were found to be significant at every level. Goodness of the 16 item scale is up to the mark, fitting all the values within the given range of parameters by CFA using AMOS version 25. Simplified Kundalini Scale can be valid and reliable measure for kundalini yoga practitioners. And hence paving the way for common man to gain physical as well as overall wellbeing in every sphere of life. For the further research we would strongly recommend that in future the sub-scales should be interpreted with caution, if constructed and overall scale should be used for best results.

Key words : Kundalini; item construction; Yoga; Philosophy

Introduction

Kundalini or serpent power is the the eastern yoga concept. The word kundalini is a sanskrit term variously translated, but most commonly as “life force,” (Hath pradipika, 2015) and some simply as “the energy” often used as a theoretical construct to explain a syndrome of various psychophysiological (Greyson, 1993) and other phenomena, which are described as energy-like sensations starting usually but not necessarily at the base of the spine and then progressing rapidly with a powerful surge, upwards through the body to the crown of the head, the experience is said to lead to higher and more desirable states of awareness, such as mystical consciousness(Grof,2000) along with the manifestation of paranormal phenomena.(Thalbourne, 2003).

In the previous researches most prevalent kundalini scales are related to paranormal and mystical experiences.(Mallinson, 2007) Not only this the awakening of kundalini is compared to the near death experiences (NDE). (Sovatsky, 2014) For example Greyson (1993) used a 19 item questionnaire scale devised by Itzak Bentov to measure a simple neurophysiological model called the “Physio-Kundalini syndrome” which describes “a characteristics anatomic progression of sensory and motor symptoms”

In this paper we have considered the daily life experiences of the kundalini yoga practitioner of having at least one year of experience or more to relate the kundalini awakening to the simple characteristics like “having good sleep, getting punctual to my work, felt constantly relaxed” etc. In this way we have constructed 25 items to measure the result of Kundalini awakening process. And got our scale verified by CFA and EFA methods which is perhaps one of the best suitable way to be applied to the questionnaire development. (Daire hooper, 2008)

Methodology

Sampling

Participants were selected on the base of convenient sampling. After the face validity and content validity index 25 questions were selected for our scale development. As per De Vellis for the scale development to get verified a sample at least be ten times of items generated(De Vellis RF,2016) so initially we decided 250 subjects. The consent was taken from their respective teachers/professors of the universities. The sample was collected from HNB Garhwal university, Swami Rama Himalayan University, GJ University, Ch. Ranveer singh University, Haryana and MLS university,Rajasthan India and University of Patanjali,Haridwar. The questionnaire was distributed among 550 participants and we received back 310 participants’ response.

Construction of constructs

Items for this scale were constructed by the thorough study of Kundalini literature available in all traditions of the world. Especially the idea was formed on the basis of the reports of Krishna Krishna’s (1993) experiences, on Sannella’s (1992) studies and Bentov’s (in Sannella, 1992) model, on Grof and Grof’s (1990) work regarding spiritual emergency, and on some case studies reporting what were interpreted as kundalini awakenings. It was also strongly based on Yoga theory and the

view that a kundalini awakening brings with it not only easily identifiable physical symptoms, but also some subtle changes of consciousness.

Along with this 35 item Kundalini scale (Thalbourne & Fox, 1999), 22 item Rash-scaled mystical experience (Lange & Thalbourne, 2000) (Lange & Thalbourne, 2002), nine point Kundalini scale developed by Ring-Rosing (1990), 19 items kundalini scale (Greyson, 1993) and KAS scale of 76 items (Laura sanches & Michael denials, 2008) were kept in mind during our framing of simplified kundalini awakening items.

Validity of the construct

1. Facial Validity

After the construction of initial items face validity was tested by sharing the questionnaire with the required number of experts and participants, indicated that the construct was easy to understand and generalise the idea of intended outcomes. The items were distributed among 60 random participants/practitioners to test this validity.

2.Content validity index

The initial item pool consisting of 40 items was vetted by four experts to assess the degree to which the items taken together constitute an adequate operational definition of a construct (Beck & Gable, 2001; Lynn, 1986; Mastaglia, Toye, & Kristjanson, 2003) I.e. Content validity index. The experts reviewed the initial item pool using a CVI rating tool. CVI was calculated following the recommendation of Waltz CF (waltz C.F, 2010). The experts gave their ratings individually. Then, for each item, the index was calculated as the number of experts giving a rating 3 or 4 and this was divided by total number of experts. The items for which the index was less than 0.75 were considered to be irrelevant eliminated from the original list. From the initial pool 15 items on the draft were deemed to be invalid because they yielded CVIs < 0.75.(Yaghmaie,2003 ; Lynn, 1986)

3. Convergent and discriminant validity

This validity is achieved when all items in a measurement model are statistically significant. The convergent validity could also be verified by computing the Average Variance Extracted (AVE) for every construct. The value of AVE should be 0.5 or higher for this validity to achieve. Thus, retaining the low factor loading items in a model could cause the construct to fail Convergent Validity. We performed three additional factor extractions to confirm the model structure viz. item quality (chi square), composite reliability(CR), and average variance extraction (AVE) were quantified to test convergent validity. Statistical significance of all the items in the model indicates presence of convergent validity. All factors had average values of .50 or higher, demonstrating that the observed variable sufficiently reflected its construct's latent variable (Tabachnick BG et. al., 2007). Factors with a CR > .50 were considered good (Raines-Eudy R, 2000) and all factors appropriately exceeded this level.

Reliability of the construct

Reliability is the extent of how reliable is the said measurement model in measuring the intended latent construct. The assessment for reliability for a measurement model could be made using the following criteria.

1. Cronbach's Alpha

One of the most reliable measure for the reliability of a construct. A minimum of .60 value is to be achieved in order to reliance the questionnaire. It measures the internal consistency of the items within the construct, how much they are inter-related to each other and co-relating with one another. Generally the rule is that a Cronbach' alpha of .70 and above is good, .80 and above is better and .90 and above is considered as excellent. And we touched this mark with the value of .94 as the best for the construct.

2. Composite Reliability

The composite reliability indicates the reliability and internal consistency of a latent construct. A value of $CR > 0.5$ is required in order to achieve composite reliability for a construct. We achieved the required level for composite reliability.

3. Average Variance extracted

The average variance extracted indicates the average percentage of variation explained by the measuring items for a latent construct. An $AVE > .5$ is required for the established scale and $\geq .5$ for the newly developed scale. Our construct verified this value as AVE as .51. (Zainudin,2015).

Results

In the factor analysis, during face validity and expert review CVI except for the 15 items that were deleted, similar factor structure was replicated as we had found in the preliminary tryout. The factor analysis was conducted using SPSS version 25. The Kaiser–Meyer Olkin's test (KMO) and Bartlett test of sphericity were conducted for knowing if the data were adequate for conducting factor analysis. We proceeded with the factor analysis if the KMO value was at least 0.50 and above, which is considered acceptable range for conducting factor analysis (Field 2005). The Bartlett test of sphericity had to be significant at least at p value of 0.05 to proceed for the factor analysis. Table 1 summarizes descriptive statistics. Factor analysis results are in table 4 .

	51.07%

Table 1. Descriptive statistics

Simplified kundalini scale	Values
KMO value	0.95
Cronbach alpha	0.94

Table 2. Reliability and sample adequacy

SL No.	Name of category	Name of index	Index value	Required level
1	Absolute fit	RMSEA	0.07	<. 008
2	Incremental fit	TLI	0.928	> .90
3	Parsimonious fit	Chisq/df	2.644	< 3

Table 3. Fitness indexes for the model

K1	0.68
K2	0.71
K4	0.71

K5	0.81
K6	0.71
K7	0.67
K10	0.74
K11	0.78
K12	0.74
K13	0.71
K14	0.43
K15	0.74
K18	0.85
K22	0.76
K25	0.79
K17	0.62

Table 4. Rotated component matrix

Discussion

This scale was simplified and developed using single domain to measure and simplify the concept of Kundalini. Most of the renowned previous researchers also followed the single dominated domain for measuring the different aspects of the kundalini for example 35 item Kundalini scale (Thalbourne & Fox, 1999), 22 item Rash-scaled mystical experience (Lange & Thalbourne, 2000), (Lange & Thalbourne, 2002), nine point Kundalini scale developed by Ring-Rosing (1990), 19 items kundalini scale (Greyson, 1993) and Kundalini Awakening Scale of 76 items (Laura sanches & Michael danials, 2008).

In our study the significance value is found to be at $p < .0001$ which is lesser than $p < .0005$ of Laura Sanches and Michael Daniels' study (2008). Thus the simplified scale is more significant. However their Cronbach's alpha value is .98 and Variance is 43.56% which looks contradictory to its significance level.. This may be due to our larger sample size of 311 participants in comparison to 117 participants of the Laura Sanches and Michael Daniel's (2008) study. The Kundalini items in their case it was 76 while in our case it is only 16 items Kundalini scale. Thus the word 'Simplified' is used in this study. Some of other kundalini scales like 35 item Kundalini scale (Thalbourne & Fox, 1999), nine point Kundalini scale (Ring-Rosing, 1990), 19 item Kundalini scale etc. didn't

followed the exploratory factor analysis (EFA) or confirmatory factor analysis (CFA) methods for measuring their intended outcomes of mystic Kundalini.

The study deals with a new realm of work in Psychology and has opened avenues for further such explorations, the study however is not without limitations. One major limitation is the complexity of the topic itself that makes it quite difficult to test. The test measures a very complex philosophy of Kundalini Yoga which may not resonate with a common person and requires lot of personal effort to comprehend. Also, our own interpretation of the same may not capture all that needs to be done. Field (2005) cites that reliability is affected by number of items. Thus, a small number of items in the scale could be a reason of low reliability. In fact, Costa and McCrae (1992) contend that when a scale measures, a value of $\alpha = 0.50$ for domain is deemed fit. However, we would strongly recommend that in future the sub-scales should be interpreted with caution, if constructed and overall scale should be used for best results. Re-standardization of the scale, further refinement of items is also recommended.

However, despite these limitations, this opens up interesting opportunities for research. It opens our model of understanding to further critical theoretical analysis and future researchers might want to focus on improving the conceptualization further. Secondly, our sample is restricted to yoga students and scholars and in future, researchers might want to test the same on other age groups, occupations and cultural contexts. Future research could also confirm the factor structure that we have proposed and explore its other possible correlates.

Conclusion

The aim of the study was to construct a self-report measure based on Kundalini yoga using a theoretical model from the original sources. In our study, single construct explained a good proportion of variance and the items had high factor loadings which mean a stable factor structure. The study in the field of Indian yoga and Psychology that has explored a complex Indian model of well-being in an empirical fashion. The study removes one of the major limitations of Indian Psychology that primarily focuses on either theoretical models or a first person approach of scientific enquiry. Also, most studies on Kundalini are experimental in nature and capture only few aspects of kundalini yoga especially psychosomatic and paranormal experiences of individuals through intense practices of specific Asana (postures) and Pranayama (breath control). No self-report for general yoga practitioners measure exists on this concept. Our study addresses this gap and the test might prove to be a useful tool for other researchers to explore the concept of simple Kundalini Yoga. The Kundalini Yoga Scale has good psychometric properties, and the overall scale shows fair degree of correlations with the validating scales which indicates acceptable criterion-related validity of the overall measure of Kundalini Yoga.

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