

Original Article

Personal Maturity Indicators: An Assessment Tool Based on Selected Concepts from the *Bhagavad-gītā*

Latha Satish, Sandhya Chandrashekar, Devi Shah, Jayaraman Mahadevan

Research Department,
Krishnamacharya Yoga
Mandiram, Chennai,
Tamil Nadu, India

ABSTRACT

Introduction: Traditionally in India, health and happiness have always been linked to inner peace and harmonious relationships. Indian philosophical systems, historical narratives, and folk traditions have consistently emphasized upon holistic wellbeing from a developmental perspective. In line with this thinking, Yoga has always been intended as a holistic, wholesome mind-body practice, focusing not only on physical fitness, but also on enhancement of the quality of mind. Yoga research has generally been skewed towards using measurement tools based on personality measurement theories that are premised largely upon western psychological models. However, there is a need to build a measurement tool completely based on yoga theory, which aims to index mental maturity by considering factors such as a comprehensive enhancement of emotional health, cognitive skills, decision-making skills and value orientation towards life and self. This has been attempted in a sporadic manner using concepts like the *Tri-guṇa* theory, and some aspects of moral and value education. **Objective and Methods:** The present project aims to develop a comprehensive personal maturity index based on principles outlined in the *Bhagavad-gītā* – a model which presents the evolution of mental quality from confusion to clarity. Using inputs from this ancient text, certain critical mental health components are identified, and a schedule has been developed to assess the self-reported level of mental maturity. **Outcome:** The present paper outlines key concepts that have been culled out from the *Bhagavad-gītā*. In addition, item writing, face validity and initial psychometric properties of the questionnaire, and the norms for interpretation are also presented.

KEYWORDS: Lifestyle, personal maturity, psychometric properties, yoga

INTRODUCTION

Conventionally, in India, health and happiness are linked to inner peace and harmonious relationships. Indian philosophical systems, historical narratives, and folk traditions have always emphasized on holistic well-being, linking the body and mind with social and ecological contexts. Behaviors, values, and core psychological strengths were nurtured in an age-appropriate way. The ancient seers' understanding of human nature and purpose of life paved the way to acknowledge that it is the "mind" – an interface between consciousness (spirit) and the macrocosm (universe) – that can assure clarity or a life free from suffering (*Mana eva manuṣyāṇāṃ kāraṇam bandha-mokṣayoh*).

The quality of mind is central to the quality of life. Positive attributes of the mind and its "saṃskāra-s" (feelings, thought patterns, etc.,) are focused upon during the developmental process. The philosophy and practice of yoga are completely devoted to the understanding of the mind's nature and to harness its competencies toward a state of peace and clarity. Educationists and human resource experts have been advocating the *Bhagavad-gītā* as a model for value

Address for correspondence: Dr. Sandhya Chandrashekar,
31, 4th Cross Street, R K Nagar, Mandaveli, Chennai - 600 028,
Tamil Nadu, India.
E-mail: sandhya@kym.org

This is an open access article distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as the author is credited and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Satish L, Chandrashekar S, Shah D, Mahadevan J. Personal maturity indicators: An assessment tool based on selected concepts from the *Bhagavad-gītā*. Int J Yoga - Philosop Psychol Parapsychol 2017;5:53-60.

Access this article online

Quick Response Code:



Website: www.ijoyppp.org

DOI: 10.4103/ijny.ijoyppp_11_17

orientation, mental health promotion,^[1] and holistic development. A unique model of personal transformation is best presented in the *Bhagavad-gītā*, where *Kṛṣṇa* counsels Arjuna, whose mind moves from a state of conflict and confusion, to clarity and strength. *Kṛṣṇa* has enumerated 26 core psychological resources which are expounded in the *Bhagavad-gītā* (BG.16 Ch., 1–3). These resources provide immense possibilities to excel, and the need for such inner strengths has changed neither overtime nor across geography. The UNESCO has currently been campaigning for life skill training for youth to ensure a healthy and purposeful life. The ten life skills listed in this charter are reflective of those termed as “*Daivī sampat*” in the *Bhagavad-gītā*.

Exploring the research possibilities within yoga has substantiated the fact that yoga is beneficial not only for health but also for life quality enhancement. The psychological outcomes of yoga research studies have substantiated these benefits in terms of subjective well-being,^[2,3] emotional regulation, self-concept, reduced anxiety,^[4] depression, enhanced positive moods,^[5] and improvement in specific cognitive functions.^[6]

Another study^[7] has tried to mark personality characteristics using *Tri-guṇa* (*sattva*, *rajas*, and *tamas*) among the yoga practitioners. The study evaluated the effects of 1 month of integral yoga practices on certain health and psychological variables. Results indicated an increase in *sattva* and a reduction in *rajas* and *tamas*. The researchers also found a significant positive correlation between the *sattva* and emotional intelligence, general intelligence, memory, and attention-concentration and negative correlation between *tamas* and memory, intelligence, and attention-concentration.

Yet, another study^[8] found that a *Sāttvika* personality was positively correlated with problem-solving ability, while *Rājasika* and *Tāmasika* personalities showed lower performance.

The effect of yoga on *Tri-guṇa*-s and on emotional and behavioral problems has also been studied,^[9] as also the relationship between *Tri-guṇa*-s and psychological problems. Results indicated that compared to nonpractitioners, yoga practitioners were significantly high on *sattva* and low on *rajas* and *tamas*. *Sattva* was also found to be negatively related to emotional and behavioral problems while *rajas* and *tamas* were positively related to them. These findings indicate the role of yoga in nurturing *Sattva-guṇa*.

However, the outcome focus in yoga research has mostly been on marking only the physiological changes, leaving psychological parameters minimally explored. The psychological measures are completely based on

theoretical inputs from a health psychology perspective or on stress relaxation models and personality theories of western psychology.

The major lacuna in yoga research has been the quantification of psychological outcomes. Few tools exist to measure mental or social outcomes using conceptual terms that are akin to the philosophical tenets of yoga and to the narratives provided in the classical literature. The model presented in *Bhagavad-gītā* provides a conceptually compatible structure to understand the mind’s transformation. Modern-day stresses, conflicts, and dilemmas are similar to the problems faced by Arjuna. The process-oriented cognitive restructuring and reflective insights provided by *Kṛṣṇa* are akin to modern-day mentoring and coaching interventions. Thus, the aspects that reflect Arjuna’s mental states, the insights to refine the mind, and the clarity of thoughts that have been presented in this dialog are worthy of being utilized as markers for progress in personal transformation. Till date, there have only been a few attempts to develop tools based on Indian psychological concepts, and of these, some confine themselves to specific attitudes or inherent cultural concepts.^[10-12]

The concept of stress to strength can be extracted from *Bhagavad-gītā* and used as a tool to understand the level and nature of the mind of a person who is taking some form of intervention. There is a definite need to develop a psychometrically valid method to measure the positive indicators of a matured mental status, which can then be used as an important outcome measure to analyze the impact of yoga and other spiritual practices. With this objective, the investigators set forth to develop the personal maturity indicator (PMI).

CONCEPTUAL INDICATORS

Conceptual terms indicative of “an agitated state of mind lacking clarity” and “indicators of mental maturity status” were selected by thoroughly reviewing the *Bhagavad-gītā*, choosing some of the popular commentaries.^[13-15] The following are the conceptual lists with their approximate English translation [Table 1].

ITEM WRITING

To represent each concept, three-item statements were written. These items were then discussed to arrive at a meaningful frame of statements. After multiple reviews, a total of 144 items were pooled together. Three parallel forms were constructed with a single statement representing each concept (Form A, B, and C), with 48 items in each.

These forms were sent to five experts for content validation. They were provided with the Sanskrit terms

Table 1: Maturity indicators from the *Bhagavad-gītā*, with English translation

	English translation
Negative mental concepts	
<i>Parīṇāma-bhaya</i>	Fear of consequences
<i>Anutsāha/Nirutsāha</i>	Lack of motivation/enthusiasm
<i>Glāni</i>	Feeling of hopelessness
<i>Pāpa-bhaya</i>	Fear of sin
<i>Ati-sneha</i>	Fear of losing one's own resources
<i>Asthāna-kāruṇya</i>	Displaced compassion
<i>Aniścita-manas</i>	Conflict of right/wrong; role ambiguity; value conflict
<i>Udvega</i>	Emotional reactivity/impulsiveness
<i>Hṛdaya-daurbalya</i>	Tender-mindedness
<i>Ahaṅkāra</i>	Self-priority, me-ness
<i>Ayavasāyātmikā Buddhi</i>	Automatic thinking; nondeliberative
<i>Lokābhīprāya-prerita</i>	Following others blindly, clinging to social norms; conventional
<i>Mūḍha-viśvāsa</i>	Preconceived beliefs and ideas
<i>Andha-śraddhā</i>	Superstition
<i>Aviveka</i>	Lack of clarity on what is transient and what is permanent
<i>Samśaya</i> and <i>Mūḍhatva</i>	Doubts about one's own actions or roles, lack of conviction
<i>Aniścita-jñāna/Ajñāna</i>	Ignorant about facts
<i>Mithyācāra</i>	Keeps contemplating on sensual enjoyments (mentally) but outwardly shows no interest
<i>Vāsanā</i> and <i>Kalmaṣa</i>	Burdened with the previous conditioned memories - mind is contaminated with past deeds
Positive mental concepts	
<i>Sama-buddhi/Samattva</i>	Equipoise, emotional stability
<i>Āstikatā</i>	Belief in something beyond body/mind, ability to focus the mind on a "higher principle"; an acceptance of a higher force which is paramount
<i>Loka-saṅgraha</i>	Ability to consider the welfare of community; ability to sustain on a task to achieve a goal for the welfare of self/others; to perform actions keeping in mind the benefit of others
<i>Karma-yoga</i>	Ability to focus on action and not hanker after fruits; ability to focus on effort

Contd...

Table 1: Contd...

	English translation
<i>Vīta-rāga</i>	Lack of intense desire/attachment
<i>Tulya-nindā-stuti</i>	No fear of failure, criticism, praise, bias, etc.
<i>Alohuṭva</i>	Freedom from temptations; senses well controlled
<i>Prasannatā</i>	Able to be pleasant and in a state of positive mood
<i>Yuktāhāra Yukta-vihāra</i>	Ability to follow discipline in food habits/indulgences
<i>Śāntatva</i>	Freedom from agitation/worry; ability to experience peace and calmness
<i>Dhāraṇā-śakti, Sattva-manah</i>	Ability to focus, reflect and perceive things clearly, able to be alert
<i>Maitra/Adveṣṭṛ</i>	Able to honor, respect or praise something/someone
<i>Dāna</i>	Ability to give something to others wholeheartedly
<i>Śaraṇāgati</i>	Ability to surrender self to the higher principle
<i>Pāramārthika-tattva-āśrayaṇa</i>	Belief that there is a relationship between human action and nature's activity
<i>Saha-bhāgittva and Sahakāra</i>	Awareness that what I do influences others
<i>Yad yad ācarati śreṣṭhaḥ/Nāyaka-citta</i>	To be a model for others
<i>Loka-rakṣakattva and Paropakāra-bhāva</i>	Faith that each has potentials and competencies that one has to use for the welfare of self/others; role and responsibility according to one's capacity
<i>Viveka</i>	Acting with reason and deliberation
<i>Kartavya</i>	To do things which need to be done
<i>Vihita-niṣiddha-karma-jñāna</i>	Not to do actions that are unwanted or forbidden
<i>Nirmamattva/Karma-phala-saṁnyāsa</i>	Impersonal attitude in action; engaged in activities but detached from ownership and results
<i>Santuṣṭa</i>	Contented; satisfied with gain that comes on its own accord
<i>Nirāśraya</i>	Independence; autonomy
<i>Kārya-dakṣatā</i>	Performs actions without feeling burdened by them
<i>Sukha-duḥkha-sama</i>	Beyond conflict; ready to accept both the positive and negative
<i>Anasūya/Alubdha/Akrudha</i>	No envy, greed, anger
<i>Yajña</i>	Doing actions as a sacrifice
<i>Kṣamā</i>	Ability to forgive and forget

representing the concept, English translation, and statements themselves. The judges were appraised of the theoretical basis and were requested to give their opinion on item relevance and clarity to the reader.

PILOT STUDY I

Face validity

The judges' ratings were coded on a 5-point scale to indicate relevance and clarity. Concurrence rate ranged from 40% to 100%. Five items with a concurrence rating of 40 were rejected. Suggestions by judges for minor corrections in the statements were duly incorporated. Fifty-seven items had 100% concurrence. Thus, each form had items with adequate content validity.

These forms, after item randomization, were tried out on a representative sample of thirty subjects each. Form A was administered along with *Tri-guṇa* Inventory,^[12] Form B along with DASS-21^[16] (measure of depression, anxiety, and stress), and Form C along with Lifestyle Questionnaire^[17] (developed by Satish and Senthilkumar, 2013).^[18]

Scale reliability

Data were collected from 90 subjects, and the trial versions of the questionnaires were analyzed for the initial psychometric property [Table 2].

The results indicate that Form A and Form B have high-reliability scores, while Form C has moderate reliability. This could be attributed to the sample differences; those answering form C were younger and had fewer years of yoga practice. The judges' rating of Form C items had higher concurrence rating, indicating the relevance of the items and its clarity.

Based on this preliminary evaluation, it was decided to reject five items from Form A to B because of low concurrence. Further, deletion of these items would not affect the scale reliability.

Concurrent validity

It was hypothesized that making the PMI scores unidirectional and positive will correlate positively with the *Sāttvika* tendencies and correlate negatively with *Rājasika* and *Tāmasika* tendencies. Similarly, the maturity indicators were validated against popular mental health indicators such as depression, anxiety, and stress, suggesting a negative relationship. Those with higher scores on personal mental maturity factors are also likely to follow a healthy lifestyle and to abstain from risky practices. The concurrent validity of these different measures on the different forms of PMI is presented in Table 3.

The results reflect that the PMI items are a positive mental state dimension, correlating positively with

Table 2: Sample profile and scale properties

	Form A (n=30)	Form B (n=30)	Form C (n=30)
Gender			
Male	14	19	13
Female	16	11	17
Marital status			
Married	23	27	23
Single	7	3	7
Age, mean (SD)	49.53 (10.83)	52.70 (12.31)	46.55 (10.95)
Years of yoga (SD)	11.13 (7.51)	12.27 (10.91)	5.74 (5.69)
Scale reliability	0.71	0.83	0.63
Scale mean range	100-101	95-96	102-104

SD: Standard deviation

Sāttvika type of personality, and are a state different from the negative states characterized by impulsivity, confusion, and emotional volatility.

PILOT STUDY II

After the pilot study, the final version of the questionnaire had 141 items and was tried out on a sample ($n = 128$) to establish its psychometric properties and to relate the PMIs to the yoga practices and other forms of psycho-spiritual transformation process. Further, the test-retest reliability and norms for interpretation were envisaged.

The questionnaire was presented online and 128 data were collected and results were analyzed [Table 4].

Scale reliability

The full-scale reliability (items – 141) was 0.94, and deleting any items did not affect the magnitude of reliability coefficient or the mean scale values. Thus, the internal consistency of the items was very high. The split-half reliability coefficient of the scale was 0.89 for the Part I (71 items) and 0.89 for the Part II (70 items), and the correlation between the two parts was 0.86. This indicates that the length of the questionnaire can be reduced to half. The internal consistency between the forms was high. One of the observations of the pilot study was the difficulty the respondents faced in completing 141 items online at one shot. However, the resultant high internal consistency scores permit the possibility of using a shorter version. Thus, a decision was made to develop the psychometric properties of Form B which had 47 items [Table 5].

MAIN STUDY

The main study was an online survey using 47 items of Form B, which also elicited information on demography and specific lifestyle practices such as yoga practice, other form of sports, self-training and spiritual practices, and the relative importance of these practices in their life.

Table 3: Concurrent validity

	Form A			Form B			Form C (exercise behaviour)
	Sattva quality	Rajas quality	Tamas quality	Depression	Anxiety	Stress	
Correlation coefficient	0.667**	-0.557**	-0.472**	-0.611**	-0.534**	-0.683**	0.482**

**Significance of *P* at 0.01 level

Table 4: Demographic profile of the sample (in percentages)

Category	Percentage
Age range percentage	
25-30	13.28
31-35	19.53
36-40	28.90
41-45	15.62
46-50	14.06
51-55	8.59
Gender	
Male	29.68
Female	70.31
Education	
Graduates	45.31
Postgraduate	51.56
Doctorate	3.1
Marital status	
Married	78.12
Single	17.96
Others	3.90
Religious adherence	
Nonadherent	17.96
Adherent	82.03

The survey was carried out online, anonymously, for 6 months. Totally, 833 persons responded to the survey, of which 51 respondents gave their data through questionnaires. The data were coded and analyzed using SPSS version 20 (IBM Corp. Released 2011. IBM SPSS Statistics for Windows, Version 20.0. Armonk, NY: IBM Corp).

Demographic profile of the sample

The survey equally represents the cross-section of the age group. The objective was to take sample of respondents from 25 to 55 years, and emerging data cover all the age groups [Tables 6-8].

The data represent a normality of distribution. The skewness and kurtosis values are lower than 1 and nearer to 0. This indicates a near-normal distribution of the maturity scores.

Does demographic profile predict the personal maturity scores?

To answer this question, simple regression was carried out with demographic variables as independents and total maturity score as dependent.

The predictive analysis reveals that 4% of variance in the PMI scores is significantly predicted by educational status (beta coefficient = 0.13; $t = 3.74$, $P < 0.01$) and the age group (beta coefficient = 0.14; $t = 4.32$; $P < 0.01$) of the individuals. This implies that educational attainment and age-related maturity are likely to enhance the scores on PMI. Further, one-way analysis of variance revealed a significant mean difference by age and educational status. It is therefore evident that, at younger ages and lower levels of education, the overall maturity scores are also significantly lowered. However, gender status, religious adherence, and marital status have no impact on the scores. Based on these results, it may be surmised that personal resources and mental maturity are significantly associated with life experiences and formal learning opportunities.

Does quality of yoga practice influence the scores on personal maturity indicator?

Here, the number of years of yoga practice, the frequency and duration of practice, and also the purpose behind the practice were all used as independents to estimate its predictive power.

This analysis reveals that 8% of variance in the maturity indices can be predicted by the years of yoga practice and practice frequency. The more the number of years of practice (beta coefficient = 0.20; $t = 4.38$; $P < 0.01$), the more likely the score is to be higher on maturity indices, as also is the case with the frequency of practice (beta coefficient = 0.12; $t = 2.79$; $P < 0.01$). However, the duration or intensity of yoga practices did not influence the scores on maturity. There was negative predictive relationship between the PMI scores and the purpose of yoga practice (beta coefficient = 0.08; $t = 1.92$; $P < 0.05$). This implies that those who choose yoga practices for therapeutic reasons score higher on PMI than those who practice yoga for general fitness.

Do sports and other exercise practices impact the personal maturity indicator scores?

None of these factors is in anyway predictive of the scores on personal maturity indices. This implies that these lifestyle practices focus more on flexibility, stamina, etc., and can create a sense of exhilaration. However, yoga and spiritual practices also focus on training the mind and on cultivating attitudes that facilitate reflection and inner orientation, thereby facilitating the maturity process.

Do self-education and spiritual practices predict the scores on personal maturity indicator?

The personal maturity scores are significantly influenced by self-educational and spiritual practices. Five percent of variance in the scores is significantly predicted, when a respondent is more often engaged in spiritual activities such as reading, attending discourses, and personal training. Frequency and duration were significant positive predictors of maturity resources, rather than years of engagement in such activities, thus suggesting that allocating more time to spiritual activities does significantly predict the level of maturity. This implies that the PMI tool is a measure of resources related to deeper personal transformation and therefore is sensitive to those who adhere to yoga and spiritual practices.

It must be mentioned that nowhere in the questionnaire was the respondent exposed to the key concepts derived

Table 5: Test-retest reliability of Form B

	Reliability coefficient	Interpretation
30-day interval	0.774	High
90-day interval	0.826	High

Table 6: Sample representation by demography

Variables	Categories	Frequency (%)
Gender	Male	294 (35.3)
	Female	539 (64.7)
Marital status	Widowed/divorced	32 (3.8)
	Single	144 (17.3)
	Married	657 (78.9)
Occupation	Unemployed	156 (18.7)
	employed	677 (81.3)
Education	HSC	34 (4.1)
	Graduate	306 (36.7)
	Masters	421 (50.5)
	PhD	72 (8.6)
Religious adherence	Nonadherent	226 (27.1)
	Adherent	607 (72.9)

Table 7: Sample representation by lifestyle practice

Type of practice	Group	Frequency (%)
Yoga	Nonpractitioner	335 (40.2)
	Practitioners	498 (59.8)
Sports/other exercise	Nonpractitioner	365 (43.8)
	Practitioners	468 (56.2)
Self-education/spiritual	Nonpractitioner	311 (37.3)
	Practitioners	522 (62.7)

Table 8: Descriptive analysis of scores on PMI questionnaire

	Mean		SD (statistic)	Skewness		Kurtosis	
	Mean	SE		Statistic	SE	Statistic	SE
Maturity score	94.04	0.460	13.28	0.052	0.085	0.173	0.169

SD: Standard deviation, SE: Standard error, PMI: Personal maturity indicator

from *Bhagavad-gītā*. The behaviors described are neutral and universal and are indicative of the person's state and quality of mind. The responses to the statements are reflective of the beliefs, opinions, and attitudes that a person forms while adhering to a lifestyle.

FACTORIAL VALIDITY OF THE ITEMS OF 47 VERSION FORM B

Kaiser–Meyer–Olkin measure of sampling adequacy of the items indicated a coefficient of 0.87 (must be greater 0.60), indicating the sufficiency of the sample. The principal component analysis resulted in emergence of 12 factors explaining 52.14 variance. This confirms that the questionnaire is a valid measure, meaningfully assessing the underlying constructs [Table 9].

In Table 9, equanimity, social concern, autonomy, cautious nature, spiritual orientation, ability to share, and self-discipline are positive resources indicating high maturity. Dependence on external source for happiness, tender-mindedness, dejection, and indulgence are the low maturity indicators.

Further, factor analysis resulted in the emergence of 2-factor solution explaining 31% of variance. The first factor clearly indicates maturity components such as mental calmness, concern for others, ability to function independently, spiritual orientation, humility, charity, self-discipline, and being cautious. Thus, this factor can be considered as positive personal maturity resource.

The second factor that emerged consisted of being tender-mindedness, happiness linked to external sources, indulgence, and also a sense of dejection. Thus, this dimension can be termed as negative personal resource [Table 10].

Profile of different lifestyle orientations and dimensions of personal maturity indicator

The sample has been categorized into three groups as those who value yogic practices, those with an inclination toward self-development or spiritual orientation, and those who value sports and other forms of exercise, and the emerging factor scores of each of these groups were compared. The analysis reveals that yoga practitioners and spiritual practitioners have a similar profile. They are less influenced by or dependent on external sources of happiness, more likely to be concerned about social welfare, are significantly more

Table 9: Factors with significant loadings

Factors	Item number	Loading range	Name	Concepts in scripture
I	27, 14, 35, 41, 2, 34, 19	0.64-0.48	External source of happiness	<i>Viṣaya-sukha</i>
II	29, 8, 16, 3, 42, 24, 13, 26, 42	0.62-0.34	Equanimity	<i>Sama-buddhi/Samattva</i>
III	32, 31, 30, 40, 44, 20	0.63-0.28	Social concern	<i>Loka-saṅgraha</i>
IV	43, 23, 37, 9	0.603-0.41	Autonomy and confidence	<i>Nirāśraya</i>
V	45, 33, 15	0.69-0.53	Cautious/deliberative nature	<i>Vimṛśyakārī</i>
VI	12, 22, 21, 28	0.74-0.34	Spiritual orientation	<i>Āstikatā</i>
VII	18, 47, 1	0.64-0.42	Tender-mindedness/reactiveness	<i>Hṛdaya-daurbalya</i>
VIII	25, 17	0.69-0.68	Dejection	<i>Glāni</i>
IX	36, 5	0.74-0.71	Charity	<i>Dāna</i>
X	38, 39	0.62-0.55	Model behavior	<i>Yad yad ācarati śreṣṭhaḥ/Nāyaka-citta</i>
XI	4, 6, 7	0.68-0.43	Self-discipline	<i>Samśīta-vrata</i>
XII	10, 11	0.65-0.64	Obstinacy	<i>Stabdha</i>

Table 10: Second-order factor solution and factor loadings

	Factor	
	1	2
Equanimity	0.742	0.061
Social concern	0.668	-0.284
Autonomy	0.578	0.045
Spiritual orientation	0.533	-0.225
Model behavior	0.484	-0.311
Charity	0.429	-0.143
Self-discipline	0.403	-0.122
Cautiousness	0.328	0.027
Tender-mindedness	0.213	0.576
External source of happiness	0.429	0.493
Indulgence	0.202	0.376
Dejection	0.313	0.339

Extraction method: Maximum likelihood¹⁸. 2 factors extracted. 4 iterations required

spiritually oriented, inclined to charity, cautious and deliberative. The three groups are homogenous with respect to the experience of equanimity, self-discipline, indulgence, autonomy, or confidence and experience of dejection. The yoga practitioners are significantly less tender-minded and pay heed to feelings, more so than the other two groups [Table 11 and Figure 1].

Respondents who have a stronger inclination for sports/exercise are found to derive happiness from external sources, are less socially concerned, are not very spiritually inclined, and are less likely to share. On the other hand, the respondents who show an inclination toward spiritual practices exhibit significantly higher levels of social concern, deliberation, and charity. Thus, the tool proves to be effective in discriminating adequately between the two groups.

Norms for interpretation of scale scores

The raw scores on the PMI tool for the sample were transformed into standard Z scores. This generates

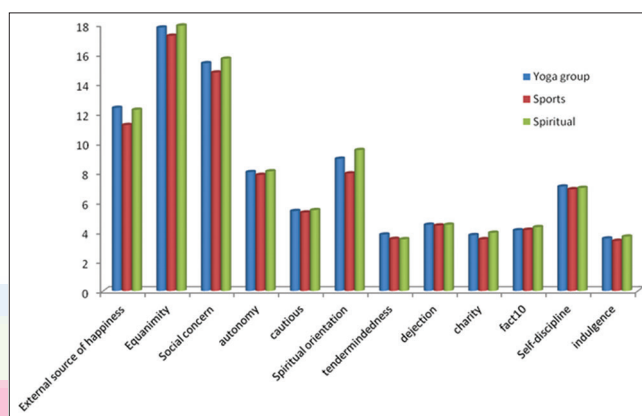


Figure 1: Mean scores on personal maturity indicator dimensions across groups

another distribution based on smoothed mean and standard deviation. The percentile cutoff for raw scores was arrived at to facilitate interpretations of the maturity level [Table 12].

CONCLUSION

There is a strong need to develop measurement tools based on the theoretical constructs founded in yoga-related scriptures that articulate the quality of a functional mind of high potential that is harmonious both socially and from within. Thirty-eight indicators of a mature mental status were identified from the teachings of the *Bhagavad-gītā* that were then meaningfully translated into items, in terms of certain neutral and universal actions and thoughts. Following content validation by five judges, a 144-item questionnaire was formulated. The reliability coefficient and concurrent and discriminant validity coefficients were established and found to be adequate. The high internal consistency of the questionnaire resulted in developing three parallel forms with an equal number of items representing the key concepts. The Form B version is psychometrically validated, demonstrated higher reliability (Cronbach

Table 11: Mean scores on various maturity factors among three groups

Factors	Yoga group	Sports	Spiritual	F
External source of happiness	12.37	11.21	12.24	6.52**
Equanimity	17.80	17.24	17.93	1.94
Social concern	15.39	14.76	15.69	10.30**
Autonomy	8.03	7.84	8.08	0.94
cautiousness	5.40	5.30	5.46	3.63**
Spiritual orientation	8.93	7.94	9.52	31.24**
Tender-mindedness	3.81	3.51	3.49	3.36**
Dejection	4.47	4.42	4.47	0.08
Charity	3.77	3.49	3.93	6.30**
Model behavior	4.10	4.13	4.31	2.51*
Self-discipline	7.05	6.87	6.96	0.76
Indulgence	3.54	3.38	3.67	2.55

* $P < 0.05$ level, ** $P < 0.01$ level**Table 12: Age-wise norms and interpretation**

Age	25 th percentile (low)	50 th percentile (moderate)	75 th percentile (high)
25-30	80	88	95
31-35	85	93	102
36-40	86	92	101
41-45	87	97	107
46-50	86	95	105
51-55	87	96	103

alpha = 0.71), stability across time with a reliability coefficient of 0.774 across 30-day test-retest and 0.824 across 90-day test-retest. The factorial validation of the constructs resulted in the emergence of 12 factors representing all the concepts originally selected from the scripture, depicting the state of mind as either agitated or refined. Further factor analysis on the initial components resulted in distinct positive and negative maturity indices.

Thus, this psychometrically validated tool can be applied to study the mental orientation of the subjects in terms of their cognitions about self and others. This forms an important dimension of mental and social health. This tool can be very useful in tracking the changes in one's perceptions and attitudes in relation to lifestyle practices such as yoga. Apart from being an outcome measure, the questionnaire can also be applied as a screening tool for assessing the maturity level of individuals, based on which appropriate training can be initiated.

Financial support and sponsorship

This project has been fully financed by the Krishnamacharya Yoga Mandiram.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

- Reddy MS. Psychotherapy – Insights from Bhagavad Gita. *Indian J Psychol Med* 2012;34:100-4.
- Sharma R, Gupta N, Bijlani RL. Effect of yoga based lifestyle intervention on subjective well-being. *Indian J Physiol Pharmacol* 2008;52:123-31.
- Paikkatt B, Singh AR, Singh PK, Jahan M. Efficacy of yoga therapy on subjective well-being and basic living skills of patients having chronic schizophrenia. *Ind Psychiatry J* 2012;21:109-14.
- Jadhav SG, Havalappanavar NB. Effect of yoga intervention on anxiety and subjective wellbeing. *J Indian Acad Appl Psychol* 2009;35:27-31.
- Khalsa S, Cohen L, McCall T, Telles S, editors. *The Principles and Practice of Yoga in Health Care*. UK: Handspring Publishing Ltd.; 2016.
- Gothe NP, McAuley E. Yoga and cognition: A Meta-analysis of chronic and acute effects. *Psychosom Med* 2015;77:784-97.
- Khemka SS, Ramarao NH, Hankey A. Effect of integral yoga on psychological and health variables and their correlations. *Int J Yoga* 2011;4:93-9.
- Sridhar R, Balasubramanian S. Exploratory model using fuzzy logic for evaluation of attitude and aptitude. *Int J Data Min Knowl Eng* 2013;5:350-5. Available from: <http://www.academia.edu/4257974/>. [Last accessed on 2016 June 18].
- Gopal DV, Mandal BS, Parimala K. (n. d.). Effect of Yoga Practice on Personality, Emotional and Behavioural Problems. *Positive Psychology*; 2010. p. 69-75. Available from: <http://www.globalvisionpub.com/globaljournalmanager/pdf/1389871282.pdf>. [Last accessed on 2010 Nov 26].
- Singh K, Raina M. Development and validation of a test on Anasakti (non-attachment): An Indian model of well-being, *Mental Health, Religion & Culture*, 2015. DOI: 10.1080/13674676.2015.1084612. Available from: <http://dx.doi.org/10.1080/13674676.2015.1084612>. [Last accessed on 2016 Jan 10].
- Khanna P, Singh K, Singla S, Verma V. Relationship between Triguna theory and well being indicator. *Int J Yoga Philos Psychol Parapsychol* 2013;1:69-74.
- Wolf DB. A psychometric analysis of the three gunas. *Psychol Rep* 1999;84:1379-90.
- Goyandka J. *Śrīmad-bhagavad-gītā Tattva-vivecanī* (English Commentary). Gorakhpur, India: Geetha Press; 1993.
- Gundappa DV. *Śrīmad-bhagavad-gītā- Tātparya* (Kannada). Mysore: Kavyalaya Prakashana; 2014.
- Raghavacharya SS. *Śrīmad-bhagavad-gītā- Bhāṣya* (Kannada). Mysore: Sri Lakshmi Hayagreeva Trust; 1982.
- Lovibond SH, Lovibond PF. *Manual for the Depression Anxiety Stress Scales*. 2nd ed. Sydney: Psychology Foundation; 1995. Available from: <http://www.psy.unsw.edu.au/groups>. [Last accessed on 2015 Mar 28].
- Satish L, Senthilkumar B. Lifestyle survey of urban youth: An analysis of healthy behaviour in relation to yoga practice. *Indian J Community Psychol* 2013;9:230-44.
- Hair G, Black B, Babin B, Anderson R, Tatham R. 6th Edition. *Factor Analysis in Multivariate data Analysis*, Pearson Education, India. 2006;2:128-192.