

A Self-Rating Ayurveda Scale to Measure the Manasika Prakrti of the Children

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Abstract

Background: Self-rating inventories to assess tridoshas (Vata,Pitta and Kapha) have been developed and validated for adults. The objective of this study was to develop and standardize self-rating scale to assess the M[?]nasika prakrti(Sattva,Rajas and Tamas) of the children according to Ayurveda .Method: The 54-item Sushruta Child Personality Inventory(SCPI) was developed on the basis of translation of Sanskrit verses describing Sattva (A), Rajas(B) and Tamas prakrti (C) characteristics, described in Ayurveda texts and by taking the opinions of 6 Ayurveda experts and two psychologists. The scale was administered on children of the age group 8-12 years in New Generation National Public school.Results: This inventory was named Sushruta Child personality inventory (SCPI) and showed high internal consistency. The Cronbach's alpha for A, B and C scales were 0.60, 0.64 and 0.61 respectively. And the Split-Half reliability for A,B and C scales were 0.62, 0.68 and 0.54 respectively. Factor validity coefficient scores on each items was above 0.3 on Sattva , Rajas and Tamas scale.

Index terms— triguna, prakriti, sattva, rajas, tamas, ayurveda.

1 Introduction

According to western psychology, traits determine individual's behavior. While Indian philosophy and Indian psychology proclaim individual's character based on predominance of any of the Trigunas (Sattva, Rajas, Tamas). Sattva refers to balance, tranquility, and purity. Rajas refers to action, passion. Tamas refers to laziness, delusion. [1] ?yurveda considers Rajas and Tamas as m[?]nasika doshas, which are responsible for the manifestation of neurosis and psychosis. Classical texts of ?yurveda describes 16 types of mental personalities (seven types of Sattva, six types of Rajas, three types of Tamas) determined by pre dominance of each gunas. [2][3][4][5][6][7]. Imbalance of Rajas and Tamas can be counteracted by increasing Sattva (Satvavajaya) by Yoga as also diet regime.

Shilpa et al. [8] have discussed the importance of analyzing trigunas in individuals. Dube KC. [9] has reviewed the concept of prakrti according to ?yurveda perceptive and showed the similarities between ?yurveda concept and modern gestalt theory, he mentioned the correspondence of 16 types of personalities with 16 types of psychological disorders. David Wolf. [10] has developed and standardized Vedic personality inventory, and has found psychometric properties of shortened version of the inventory.

Stempel HS, [11] has correlated Vedic personality inventory with Daily Spiritual Experiences Scale and the Brief Symptom Inventory. G[?]ta personality inventory. [12] was developed based on Bhagavad-G[?]ta concept. A study, [13] Quoting the existing, paper-pencil tests to measure spiritual and transpersonal construct is available. One of the earliest available inventories was developed by Paramswaran. [14] And Uma, Lakshmi and Parameswaran. [15] named as 'Guna Inventory' to assess the three Gunas. This inventory is based on the descriptions of the characteristics of the three Gunas as outlined in the S[?]mkhya Karika and The Bhagavad-Gita.

Mohan and Sandhu, [16] have developed a Triguna personality inventory based on the Gita typology of personality (TGPI) to measure the three Guans as separate dimensions with one being predominant. They found

5 TABLE-2 CONTENT VALIDITY BY EXPERTS (ITEMS AGREED BY EXPERTS)

that Sattva was distinct from Rajas and Tamas. Kapur et al. [17] attempted to provide a theoretical model of infant temperament based on ancient Indian thought with special focus on the resilient or competent child. Most of the items of the checklist are drawn from the items of the inventory developed by Marutham. [18] For adult population, along with some items from the standard checklist used in studies on temperament in the west.

Marutham et al. [19] consider the three factors as independent of each other. The inventory is constructed on views depicted in S'mkhyā Karika and Bhagavad-Gita. Ayurveda Guna Inventory for Children (AGIC), [20] a parent rating scale has been developed and standardized. This was developed on the basis of Samskrita verses explained in 5 classical texts of Ayurveda and content validity of the 10 Ayurveda experts and 3 psychologists. Which consisted 32, 20, 18 items respectively for Sattva, rajas and tamas scales.

Which was administered on 70 parents of the children in Maxwell public school, and was associated with good reliability, which refers to the consistency of the scale and the items in the scale (Cronbach's alpha and split half reliability which describes the analysis of the internal consistency, homogeneity of the items in the particular scale was above 0.5) and construct validity (factor loading) for each items was above 0.5.

Effect of Integrated yoga module and yoga nidra on Trigunas has been discussed. [21] [22] [23] A simple, self-rating scale to assess manasika prakrti (constitution) of the children according to Ayurveda concepts is not available.

The aims and Objective of the present study were to develop a self-rating scale Sushruta Child Personality Inventory(SCPI) to measure trigunas in children and to compare with parent rating scale AGIC (Ayurveda Guna Inventory for Children) for the purpose of establishing ,Criterion related validity (which describes that the particular scale measures what it supposes to measure), which refers to the usefulness of a test in closely relating to other measures, of the scale, to assert, construct validity, which refers to whether a scale measures or correlates with the theorized psychological construct, using factor analysis. And to determine d discriminant validity, which refers to whether the measurements that are supposed to be unrelated are, in fact, unrelated, by assessing correlation between subscales.

Foot note: Prakrti corresponds to constitution or Personality. According to ?yurveda which is based on S'mkhyā Philosophy which emphasizes on the point that universe is governed by the prakrti and Purusha which are the causal factors for the creation. prakrti is the unconscious principle and Soul is conscious principle. And, is made up of Sattva,Rajas and Tamas gunas. Which are responsible for creation, maintenance and destruction of the universe? And as well, forms the personality of the individual.

2 II.

3 Methods

The Sushruta Child Personality Inventory (SCPI) was developed based on one hundred three Sanskrit characteristics from the five authoritative ancient Ayurveda texts (Table-1) describing characteristics typical of 7 Sattvikaa, 6 Rajasika and 3 Tamasika prak?ti. Item reduction by researcher with the help of Ayurveda expert ,was carried out by deleting the repeated items (described similarly in all texts and alike for different types of Sattvika, Rajasika and Tamasika prakrti for example Sattvika prakrti person will be free from anger, jealousy ,hatred is described in all texts and different types)

, ambiguous items (Which are impossible to educe for example Person with predominance of Rajas and Tamas will have different tastes for food), and by selecting those items specifically suitable for children (For example the Rajasika and Tamasika prakrti persons will be having wealth and very much interested in sex and engaged in sex) (See Table-1).

4 Table-1 Texts and number of items

Table-1 gives the number of initial items (Samskrita) collected from five Ayurveda texts with a: Initial number of items, b: Repeated (retained) number if items, c: Ambiguous items (removed) and d: Items not concerned with children (removed) 84 items, translated into English utilizing Sanskrit dictionary, were presented to ten ?yurveda experts, for content validity. They were asked to judge the correctness of each statement and to check (1) whether any of the items were repeated or should be added?. (2) Whether the features of Sattva, Rajas,and Tamas prak?ti .selected for the scale are correct and (3) if the items constructed represented acceptable translation of the Sanskrit in the original texts. Of these, 80 items which were agreed by all the experts were retained, out of which, some of the items were changed and refined.

Based on the final Sanskrit statements 54 questions were framed by the researcher. The scale was again presented to five ?yurveda experts and one psychologist, who reviewed the format of this scale and recommended a two point scoring (0 and 1), which was adopted in the final SCPI. Suggestions in the phrasing of questions were incorporated. After obtaining consensual validity on 54 questions, by all Ayurveda experts and psychologist, the scale was finalized.

5 Table-2 Content validity by experts (items agreed by experts)

Table 2 gives the opinion of 5 Ayurveda experts and a psychologist.

The SCPI has 20 items for Sattva scale (Ascale) 18 items for Rajas scale (B-scale) and 16 items for Tamas scale (C-scale) subscales.

6 Table-3 Demographic data

Table ??

7 Data collection and analysis

For testing up reliability and validity of the scale was administered on parents of the children who were the students of New Generation National Public School in Bangalore, of both sexes with an age range of 8 to 12 years, of class of 3rd standard to 7th standard. The 54 items SCPI was answered by 200 children. The Criterion Ayurveda Guna Inventory for Children AGIC) was administered on parents of 30 children of the age group of 8-12 years, for the purpose of cross-validation.

The statistical package for social sciences (SPSS-16.0) was used for data analysis

The item difficulty level was first assessed. The data was next analyzed for reliability. The split-half and Cronbach's alpha tests were applied for reliability internal consistency analysis. Discriminant validity was analyzed by Pearson's correlation analysis. This was done to check the degree of association between Sattva, Rajas and Tamas scale scores. Criterion related validity was assessed by Pearson's correlation between subscales of SCPI and parent rating scale AGIC.

8 III.

9 Results

10 a) Content validity

Amongst, 6 experts who judged the items, content of all 54 questions were agreed by four to five experts.

11 b) Item difficulty level

This is defined as the presence of a said symptom expressed as the percentage of children who score positive to that item 20-22. The results obtained from the administration of SCPI on 60 children showed 70 items that had less coefficient than 0.9 (answered yes by the most) and more than 0.3 (answered yes by the less subject) were retained.

12 c) Internal consistency

Refers to, the homogeneity of the items in the particular scale. An analysis of the data collected from 200 children showed the Cronbach's alpha (which is the particular formula based on variance to assess the internal consistency) for S, R and T scales were 0.60, 0.64 and 0.61 respectively. The Split-Half reliability (which refers to the correlation between first half and second half of the scale) for S, R and T scale were 0.62, 0.68 and 0.54 respectively. This shows that the three scales have good internal consistency. [24, 25, 26]

13 d) Correlations

The Sattva scale correlated negatively with Rajas and Tamas scales. While Rajas and Tamas scales correlated positively.

14 Table-4: Correlation among Sattva, Rajas and Tamas

15 Table-4 gives (**) r-Pearson correlation values and signif-
 16 icance of correlation between subscales which is at 99%
 17 confidence level. Sattva highly negatively correlated with
 18 Rajas and Tamas, while Rajas correlated significantly pos-
 19 itively with Tamas. Table: 5 Correlation of the subscales
 20 of self-rating scale (Sushruta Child Personality Inventory)
 21 with parent rating scale (Ayurveda Guna Inventory for Chil-
 22 dren) Table -5 gives Pearson correlation of each subscales of
 23 SCPI with subscales of AGIC (** $p < 0.01$). Subscales of SCPI
 24 (Sattva, Rajas, Tamas) correlated highly positively with sub-
 25 scales (Sattva, Rajas Tamas) of AGIC (parent rating scale)
 26 Table-6 Mean score differences between Boys and Girls in
 27 trigunas Table -6 presents the mean scores of Boys and Girls
 28 in each subscales. Showing high scores on

29 Tamas in girls (9.8, for boys it is 7.6), high scores on Sattva and Rajas in Boys ??10.5 and 7.4, for girls it is 9.9
 30 and 6.3) . Changes were significant $p < 0.05$ (One sample t-test) IV.

16 Factor Analysis

31 Factor analytic co-efficient obtained for each items in; S-scale, R-scale, also T-scale were more than 0.3.
 32 (Appendix-1)

33 Kaiser-Meyer-Olkin Measure of Sampling Adequacy for subscale item analysis was above 0.5, showing good
 34 sampling adequacy.

35 V.

17 Discussion

36 This present study, has been carried out to develop and standardize a 54 item, self-rating, the Sushruta Child
 37 Personality Inventory (SCPI), as an instrument to assess the mental personality (prakrti) of the children. It
 38 was developed based on Sanskrit statements from five authoritative texts of Ayurveda. Though the scales are
 39 standardized, they doesn't consider the comprehensive outlook of Ayurveda. [11][12][13][14][15][16][17][18][19] An
 40 SCPI has the wide-ranging approach of analyzing trigunas according to the concepts of Ayurveda.

41 The reliability which refers to the consistency of the scale, was supported by Cronbach's Alpha coefficient and
 42 Split-half analysis (analyzed through SPSS and it has particular formula based on variance of scores on items).
 43 Similarly, validity (which refers to utility of the scale) was supported by Factor-analysis which was done to check
 44 the association of the items with respective subscales was as good as parent rating scale.

45 [20] Cronbach's Alpha ranged from 0.60 to 0.64. This provided the evidence of homogeneity of items. While
 46 for parent rating scale, Ayurveda Guna Inventory for Children (AGIC) it ranged between 0.55 and 0.80. However,
 47 Split-half analysis was high as parent rating scale which ranged from 0.56 to 0.79, which is not been addressed
 48 other earlier studies. [10][11][12][13][14][15][16][17][18] Factor loadings for each items in the subscales , ranged
 49 from 0.37 to 0.74, 0.43 to 0.75, 0.39 to 0.79 0.53 to 0.85, while for parent rating scale. [21] It ranged from 0.50
 50 to 0.80 and 0.40 (only one item) to 0.80 respectively for Sattva, Rajas and Tamas subscales. While for Vedic
 51 Personality Inventory subscales it was 0.62 to 0.87, 0.57 to 0.80, and 0.55 to 0.76 respectively. This proved the
 52 validity of the items in the subscales. (See Appendix-Table -7) Co-relation of Sattva with Rajas and Tamas was
 53 highly negative, suggesting discriminant validity (See Table-4). Comparing to parent rating scale. 20 correlation
 54 of Sattva with Rajas and Rajas with Tamas has been improved (-0.77 to -0.85, 0.37 to 0.41) other studies have
 55 not shown high correlation (10,11,12). While association of Rajas with Tamas was positive this was shown by
 56 earlier study. [12].

57 The subscales of SCPI correlated highly ('r' above 0.9) positively with subscales of parent rating scale AGIC
 58 (Ayurveda Guna Inventory for Children). ??20] suggesting concurrent validity(See Table-5).

59 The divergence in results (Cronbach's alpha, factor loadings) of self rating and parent rating scales, may be
 60 because of discrepancy in prakrti of the children and religion, as parent rating scale (to check reliability) and
 61 SCPI were administered in different schools. Ayurveda texts assert persons of one religion, one place will have
 62 one prakrti.

The strength of the study is that it is the first attempt to develop and standardize a self-rating scale to measure the manasika prakrti of the children, which is important aspect of maintaining one's health [2][3][4][5]. Ayurveda emphasizes on maintenance of the health of a healthy person. Early measurement of Rajas and Tamas can reduce the vulnerability to psychological disorders. By following diet regime and by particular Yoga module one can move towards perfect health. Though published scales are available to assess the trigunas of an individual. [8][9] They have been standardized for adult ale group. However, children require different mode of questions. Hence, SCPI can be potentially used to identify the predominant manasika doshas in children, thus helps to plan suitable régime, yoga at an early age to maintain the health.

18 Limitations of the study

Although, SCPI (Sushrura Child Personality Inventory) is a reliable, valid instrument, it has not addressed test-retest reliabilty. Future studies could establish the norms by the study on more number of samples. Agreed all questions except 5 th .12 th questions.

19 VI.

20 Conclusions

21 (SUM)

Agreed all questions except 2 nd ,4 th questions 4 (AHA)

Agreed for all items except 7 th ,10 th questions 5 (SHK)

Agreed for all items 6 th , 7 th , 8 th ,12 th ,13 th questions.

22 (AAJ)

Agreed for all items, suggested changes in the format of questions. Appendix-1

1 2

Figure 1:

1

An SCPI is reliable and valid instrument.
 Researchers can adopt this instrument to assess the effect of Yoga, personality development programme, treatment for children about the age of 8 to 12 years.
 VII.

Figure 2: Table 1 :

2

Experts	Comment
1 (RM)	Agreed all questions 5 th ,10 th questions
2 (RA)	

Figure 3: Table 2 :

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3

Sample	Boys	Girls	Total
Gender (Boys)	104	96	200
Age range	8-12 years	8-12 years	8-12 years
Mean± SD	10.13± 1.23	10.0±1.18	10.27±1.28

Figure 4: Table 3 :

4

Sattva vs Rajas	- 0.85**	P < 0.01
Sattva vs Tamas	- 0.77**	P < 0.01
Rajas vs Tamas	0.41**	P < 0.01

Figure 5: Table 4 :

5

Sc vs Sp	r = 0.97 **
Rc vs Rp	r = 0.91**
Tc vs Tp	r= 0.93**

Figure 6: Table 5 :

6

Sample	Sattva	Rajas	Tamas
Boys	10. 5	7. 4	7.6
Girls	9.9	6.3	9.8

Figure 7: Table 6 :

7

Legend-Table-7 gives factor loadings
(correlation of each item with respective subscales)

Figure 8: Table 7 :

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