

## 5. METHODS

### PART I: DEVELOPMENT OF TWO INVENTORIES:

- a. Development and initial standardization of Kāśyapa Prakṛti Inventory
- b. Development and initial standardization of Kāśyapa Psychophysiological State Inventory.

#### a. Kāśyapa Prakṛti Inventory

Each dośa manifests certain characteristics, or lakṣṇāḥ, in a person's psychophysiology. Āyurveda's classic texts were therefore searched for lakṣṇāḥ to select for use in designing an inventory, aiming to assess dośa dominance. After lakṣṇa selection, questions were formulated that described characteristics of each lakṣṇa. This procedure yielded a raw, first draft of the questionnaire with 87 questions. Expert of five psychologists and ten Āyurveda experts were selected to assist in developing the inventory. The draft was sent to each for a first Delphi round of consultation. Only three questions were eliminated in the consultations, reducing the inventory to a final set of 84 questions. This process was considered to provide content validity for the resulting instrument. The data collection was done at Vivekananda Education Centre and M.E.S. Pre-university College in Bengaluru, were enlisted to provide adolescent students aged 13 to 18yrs to take the inventory test. It was administered to 521 students. The attrition being, twenty completed questionnaires were either incomplete or contained ambiguous answers to one or more questions. Data analysis was performed on the remaining 501 questionnaires, a drop-out rate of 3.8%. The data analysis used is IBM's Statistical Package for Social Sciences (SPSS) version 10.0. After getting the final consensual validity from psychologists and Āyurveda experts the scale was finalized. The final KPI has 84 items and in each category its: Vāta - 26, Pitta - 28, and Kapha-30, with a twopoint scoring (Yes/ No) as (1&0) was incorporated in the inventory.

Table 5: Texts and number of items for KPI:

Texts	Vāta	Pitta	Kapha
Caraka Samhita	1,2,3,4,5,6,11	27,28,29,30,32	55,56,57,58,59,60, 61,62,63,64

Sushruta Samhita	8,9,12,13,14,15,16	31,33,34,35,36,37,38,39,40,41,42,43,44	70,71,72,73,74,75,76,77
Ashtanga Sangraha&Ashtanga Hridaya	10,18,19,20,21,22,23,24,25,26,7,17	45,46,47,48,49,50,51,52,53,54	65,66,67,68,69,78,79,80,81,82,83,84

NOTE: Harita, Bhela, Bhava Prakasha, Sharanghadhara, Yogaratnakara are repetitions of the Brhat Trayi's

b. Kāśyapa Psychophysiological State Inventory:

The study was conducted at the Vivekananda Education Centre, and M.E.S. College, Bangalore. Participants were 7<sup>th</sup>-10<sup>th</sup> grade & 11<sup>th</sup> & 12<sup>th</sup> grades.

Its aim was to yield a descriptive analysis the state of subjects' doṣas. As background, the properties of Vāta, Pitta and Kapha were studied in Āyurveda's nine authoritative texts. All kinds of lakṣṇās, symptoms, were listed, with repetitions omitted. Twenty items seeming most apposite were selected from the list, and carefully translated into English.

The list was then sent for refining to a set of five modern psychologists, and ten Āyurveda experts. Experts' opinions resulted in elimination of 14 items, reducing the list to six items supported by all. It was agreed that only having two items for each doṣa would appropriately simplify the scale and make it more similar to a psychological scale. The inventory was first tested for comprehensibility in a Pilot Study. Fifty adolescent students took the test and gave feedback on ease of understanding so that quantitative difficulty of items (answerability) could be assessed. They found no difficulty. The scale with the Item validity is done. The scale was administered to 485 participants and ambiguous and repetitive answered were eliminated and final of 450 participants was selected for the study. The six items fell in three pairs, each pair for one doṣa: 1 & 2 for Vāta, 3 & 4 for Pitta, 5 & 6 for Kapha. As shown, each item has a five-point Likert Scale, with values indicating degree of agreement with scores as (0,1,2,3&4) with options as follows: 1. Not at all; 2. A little; 3. Moderately; 4. Mostly; and 5. Completely.

So, the final KPSI has 6 items with scoring option of five as (0,1,2,3&4).

Table 6: Number of items for KPSI:

TEXTS	VĀTA	PITTA	KAPHA
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Caraka Samhita	3	4	3
Sushruta Samhita	2	1	1
AshtangaSangraha	2	2	1
Ashtanga Hridaya	0	0	1
Total	7	7	6

## **PART II: EFFECT OF INTEGRATIVE YOGA MODULE TO ASSESS PRAKṚTI IN ADOLESCENTS- PRE- POST STUDY**

This study was done with a one- month intervention study using the Kāśyapa Prakṛti Inventory for the assessment.

### **5.1 PARTICIPANTS**

#### **5.1.1 SAMPLE SIZE**

- a. For self-reporting Trait Inventory (KPI):  
501 participants
- c. For self-reporting State Inventory (KSPI):  
450 participants
- c. Pre- post Yoga study:  
82 participants

#### **5.1.2 SELECTION AND SOURCE OF PARTICIPANTS**

- a. For self-reporting Trait Inventory (KPI):
  - Source: Vivekananda Education Centre, Jayanagar, M.E.S Pre-University, Malleshwaram, Bengaluru
- b. Self-reporting State Inventory (KSPI):
  - Source: Vivekananda Education Centre, Jayanagar, M.E.S Pre-University, Malleshwaram, Bengaluru
- c. Pre- post Yoga study:
  - Source: Vivekananda Education Centre, Jayanagar, M.E.S Pre-University, Malleshwaram, Bengaluru

#### **5.1.3 INCLUSION CRITERIA**

- a. For self-reporting Trait Inventory (KPI):
  - Adolescents with age group 13-18years, both girls and boys.
  - Sample size: 501 participants
  - Sampling method: Purposive sampling

- Source: Vivekananda Education Centre, Jayanagar, M.E.S Pre- University, Malleshwaram, Bengaluru
- b. For self-reporting State Inventory (KSPI):
- Adolescents with age group 13-18years, both girls and boys.
  - Sample size: 450 participants
  - Sampling method: Purposive sampling
  - Source: Vivekananda Education Centre, Jayanagar, M.E.S Pre- University, Malleshwaram, Bengaluru
- c. Pre- post Yoga study:
- Adolescents with age group 13-18years, both girls and boys.
  - Sample size: 82 participants
  - Sampling method: Random
  - Source: Vivekananda Education Centre, Jayanagar, M.E.S Pre- University, Malleshwaram, Bengaluru

#### **5.1.4 EXCLUSION CRITERIA**

- a. For self-reporting Trait Inventory:
- Adolescents who were very irregular to the class, mentally or physically challenged.
  - Adolescents with Psychosis and Neurosis,
  - Adolescents Attention Deficit Hyperactive disorder and Autism
- b. For self-reporting State Inventory:
- By the teacher's opinion adolescents who were mentally or physically challenged.
  - Adolescents with Psychosis, Neurosis, Attention Deficit Hyperactive disorder and Autism
  - Not understanding English
- c. Pre- Post Yoga study:
- Adolescents who are with Attention Deficit Hyperactive Disorder, Psychosis, Autism / Mentally Challenged

#### **5.1.5 ETHICAL CONSIDERATION**

Informal ethical committee permission was obtained to conduct this whole study.

## 5.2 DESIGN OF THE STUDY

1. For the development of the Inventories its - Co- relational design
2. For Yoga study its - RCT design

## 5.3 VARIABLES STUDIED

The properties of tridośa and Prakṛti.

- Vāta
- Pitta
- Kapha

## 5.4 INTERVENTIONS

- a. Kāśyapa Prakṛti Inventory
- b. Kāśyapa Psychophysiological State Inventory
- c. Yoga module comprised of yoga practices as follows - Breathing Exercise: like Hands In & Out, Vertical Hand Stretch, Ankle Stretch, Tiger Breathing, Dog Breathing, Rabbit Breathing & Sectional Breathing; Dynamic Exercise: Hand Swing, Twisting, Alternate Side Bending, Forward & Backward Bending, Jogging, Pavanamuktasana Kriya; Suryanamaskara: Suryanamaskara; Asana: Ardhakatichakrasana, Padahastasana, Ardhakachakrasana, Ushtrasana, Paschimottanasana, Suptavajrasana, Makarasana; Pranayama: Nadishuddhi, Kapalabhati (Yoga Kriya), Bhramari, Sheetalī; Chanting: Vedic Chanting (Choice of 10 Sections, different on different Days): Bhagavad Gita, Nadanusandhana / Omkara Meditation; Yogic Games: Choice of - Different on Different Days - Find Ram-Shyam, Accepting Criticism, Find-a-Leader, Search Engine; Relaxation Technique: IRT, QRT & DRT (from SMET Program).

## 5.5 DATA EXTRACTION

For the standardization of the inventories – Kāśyapa Prakṛti Inventory and Kāśyapa Psychophysiological Inventory, were administered to adolescent students respectively.

## 5.6 DATA ANALYSIS

Part I Development and Initial standardization of the Inventories

- Used the IBM Statistical Package for Social Sciences, SPSS, version 10.
- Cronbach's alpha and Split- half tests done for Internal consistency, reliability analysis.
- Pearson's correlation co-efficient done to check the degree of association between tridośas, vāta, pitta and kapha.

#### Part II Pre-post Yoga study

- Employed SPSS version 21.0
- the Kolmogorov-Smirnov test was used to check whether the data were normally distributed; since it was not, the Wilcoxon Signed Ranks Test was applied to assess the significance of within-group changes in the data.