

DEVELOPMENT AND CONTENT VALIDATION OF A SUSHRUTOKTA TRIGUNA-BASED MENTAL ATTRIBUTE SCALE FOR YOUNG ADULTS: A CROSS SECTIONAL STUDY AMONG STUDENTS OF AGE 18-30 YEARS

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ABSTRACT

Background: Ayurveda describes Trigunas (mental attributes) and behavioural characteristics through the concepts of Sattva, Rajas and Tamas. Sushruta has described several attributes of the mind that can be understood in relation to psychological functioning and emotional behaviour. However, a structured instrument -based scale on these Sushrutokta mental attributes for assessment among young adults is limited. Therefore, there was a need to develop a structured questionnaire based on Ayurvedic concepts and assess its applicability in the study population. The scales was developed as a part of MD thesis. **Aim:** To develop and validate a questionnaire for assessment of Sushrutokta mental attributes among students aged 18–30 years. **Materials and Methods:** An observational study was undertaken among students aged 18–30 years. A questionnaire was developed based on classical Ayurvedic references concerning mental attributes and relevant concepts of

emotional functioning. The preliminary questionnaire was subjected to expert evaluation. Experts from Ayurveda, Kriya Sharir, research methodology and medical statistics reviewed the questionnaire and provided suggestions regarding the content and wording of individual questions. The suggestions received were incorporated and the questionnaire was finalized.

The final questionnaire consisted of 35 questions distributed across three domains: Sattva (14 questions), Rajas (11 questions) and Tamas (10 questions). The questionnaire was subsequently administered to a sample of 80 students. **Results:** The final questionnaire consisted of 35 questions covering the three Triguna domains. Expert suggestions regarding modification, deletion and addition of questions were incorporated before administration of the final questionnaire. The responses obtained from 80 students were analysed and expressed as percentages. **Conclusion:** A 35-item questionnaire based on Sattva, Rajas and Tamas was developed following expert review and incorporation of suggested modifications. The questionnaire provides a structured approach for assessment of Sushrutokta mental attributes in students aged 18–30 years. Further studies with larger samples and additional psychometric testing may strengthen its validity and reliability.

KEYWORDS: Sushruta, Sattva, Rajas, Tamas, Mental attributes, Questionnaire, Scale development, Validation, Ayurveda.

INTRODUCTION

Ayurveda gives considerable importance to the assessment of mental characteristics in understanding individual behaviour and psychological functioning. The mind (Manas) is described in Ayurveda in relation to Three psychological attributes i.e. Sattva, Rajas, Tamas, behavioural tendencies and responses to different situations.

The concepts of Sattva, Rajas and Tamas represent important dimensions of mental functioning. Sattva represents light, clarity, purity. Rajas represents activity. Tamas represents inertia, laziness etc. After increasing in level of these Gunas, human behaves according to increased Guna (the traits of increased guna are demonstrated by the individual), this causes different responses at different times.

Conventional instruments for emotional functioning are generally developed within modern psychological frameworks. There is a need for culturally relevant instruments that incorporate concepts described in classical Ayurvedic literature.

Therefore, the present study was undertaken as a part of MD thesis preparation to develop a structured questionnaire based on Sushrutokta mental attributes, categorized according to Sattva, Rajas and Tamas, and to assess its applicability among students aged 18–30 years.

AIM

To develop and validate a questionnaire for assessment of Sushrutokta mental attributes (Sattva, Rajas, Tamas) in students of age 18-30 years.

OBJECTIVES

1. To develop a questionnaire based on Sushrutokta mental attributes i.e. Sattva, Rajas and Tamas.
2. To obtain expert opinion regarding the content and construction of the questionnaire.
3. To incorporate the suggestions obtained from experts and finalize the questionnaire.
4. To administer the finalized questionnaire among students aged 18–30 years.
5. To analyse the obtained responses.

MATERIALS AND METHODS

Study Design and Setting

This was a scale-development and content-validation study followed by a cross-sectional pilot administration conducted in Pune. Ethical approval was obtained from the Institutional Ethics Committee prior to commencement, and the study was conducted in accordance with the Declaration of Helsinki. Written informed consent was obtained from all participants.

Study Population

The pilot study population comprised students aged 18 to 30 years enrolled in undergraduate and postgraduate programmes.

Inclusion criteria: healthy students of age 18–30 years at the time of enrolment; willingness to provide informed consent; ability to read and comprehend the language of administration.

Exclusion criteria: diagnosed major psychiatric illness; taking medications/psychological counselling sessions.

Sample size of 80 eligible students (by pilot study)

Scale Construction

Item pools for the three Guna domains were generated through an extensive review of classical Ayurvedic texts Sushruta Samhita and cross-referenced against Monier-Williams' Sanskrit-English Dictionary (1899) and Dalhana commentary on Sushruta Samhita for precise definition of each quality. Each item represents a discrete classical quality (e.g., Medha, Krodha, Nidralu) mapped to one of the three Gunas. The final item pool comprised 35 items: 14 assessing Sattva, 11 assessing Rajas, and 10 assessing Tamas. The complete

item structure, with the classical term and its explanation/source, is presented in Tables 1–3.

Sattva Guna Items (n = 14).

Question no.	Quality assessed	Explanation
1	<i>Smriti</i>	CCRAS based Question
2	<i>Medha</i>	Retentive power of mind, intellectual power ^[11]
3	<i>Buddhi</i>	Decision making ^[2]
4	<i>Dhruti</i>	Patience, firmness ^[3]
5	<i>Anabhishang</i>	Absence of connection or attachment ^[4]
6	<i>Titiksha</i>	Endurance, forbearance ^[5]
7	<i>Aanrushansh</i>	Compassion, non-cruelty, kindness ^[6]
8	<i>Sattya</i>	Honest, truthful ^[7]
9	<i>Dharma</i>	Duty, right conduct ^[8] related to Vacha Sucharitam ^[12]
10	<i>Astikya</i>	Belief in authority, faith ^[9]
11	<i>Dnayan (Aatmadnyana)</i>	Knowledge, understanding of self ^[10]
12	<i>Samvibhag Ruchita</i>	Liking to share with others, quality/state of having pleasure in sharing with others ^[11]
13	<i>Dharma</i>	<i>Kaya Suchitaritam</i> -obeying duties related to body ^[12]
14	<i>Dharma</i>	<i>Manas Sucharitam</i> -obeying duties related to Manas ^[12]

Rajas Guna Items (n = 11)

Question no.	Quality assessed	Explanation
1	<i>Atanashila</i>	Wondering nature ^[13]
2	<i>Kaam</i>	Desires, wishes ^[14]
3	<i>Adhruti</i>	Want of patience, lack of firmness ^[15]
4	<i>Dambha</i>	Arrogance ^[16]
5	<i>Ahankara</i>	Ego, self-consciousness ^[17]
6	<i>Dukkha Bahulata</i>	Uneasy, unpleasant state ^[18]
7	<i>Aanrutiktva</i>	Untruthful, falseness ^[19]
8	<i>Akarunya</i>	Absence of compassion, want of pity ^[20]
9	<i>Krodha</i>	Anger ^[21]
10	<i>Harsha</i>	Joy, delight, happiness ^[22]
11	<i>Mana</i>	Proud ^[23]

Tamas Guna Items (n = 10)

Question no.	Quality assessed	Explanation
1	<i>Akarmashilata</i>	Not working, not performing good work ^[24]
2	<i>Vishadi</i>	Dejection, depressed ^[25]
3	<i>Buddhi Nirodha</i>	Mental obstruction, opposition to reason or intellect
4	<i>Nastikya</i>	One who denies existence of anything ^[26]
5	<i>Adnayana</i>	Opposite of knowledge
6	<i>Durmedha</i>	Lack of wisdom, poor intellect ^[27]
7	<i>Adharmashilata</i>	Non- performance of duty related to Vacha
8	<i>Adharmashilata</i>	Non- performance of duty related to Manas

9	<i>Adharmashilata</i>	Non- performance of duty related to <i>Kaya</i>
10	<i>Nidralu</i>	Habitually inclined to sleep

Content validation by expert panel

Expert validation

The questionnaire was reviewed by experts with relevant qualifications and experience. The validation report documented expert suggestions concerning individual questions and the questionnaire format.

The experts included

1. Dr. Yogini Kulkarni – HOD, Research Methodology and Medical Statistics, CARC.
2. Mr. Krishna Kore – Lecturer, Medical Statistics, CARC.
3. Dr. Sangita More – Associate Professor, Samhita Siddhant, CARC.
4. Dr. Shweta More – Associate Professor, Kriya Sharir, CARC.

Suggestions provided by the experts were considered and incorporated into the questionnaire before finalization.

Scoring and Interpretation

The maximum attainable marks differ across the three Guna domains in proportion to the number and weighting of items: Sattva = 28 marks, Rajas = 22 marks, and Tamas = 20 marks.

For each respondent, the raw score obtained in each domain is converted to a percentage of the maximum attainable marks for that domain.

The three domain percentages are then arranged in descending order:

- 1) Guna with the highest percentage is labelled Uttama (predominant),
- 2) Guna with the intermediate percentage is labelled Madhyama,
- 3) Guna with the lowest percentage is labelled Hina,

Guna	Number of items	Maximum marks
Sattva	14	28
Rajas	11	22
Tamas	10	20

DISCUSSION

The Triguna Assessment Scale developed in this study operationalises the classical Ayurvedic description of Sattva, Rajas and Tamas into a structured, item-based format

suitable for administration in young-adult populations. By anchoring every item to a specific, lexicographically defined classical quality — for example, Buddhi (decision-making) and Dhruti (patience/firmness) under Sattva, Krodha (anger) and Ahankara (ego) under Rajas, and Nidralu (excessive sleep inclination) and Akarmashilata (aversion to work) under Tamas — the scale seeks to preserve fidelity to classical Ayurvedic psychology while enabling quantitative scoring and comparison across individuals.

The content validation process, involving structured relevance rating by five domain experts and calculation is a widely recommended first step in the development of any new psychometric instrument, ensuring that items adequately represent the construct domain before reliability and construct-validity testing are undertaken.

The choice of a student population aged 18–30 years is relevant because this age range represents a period of significant academic, occupational and lifestyle transition during which psychological constitution may influence stress resilience, decision-making, and health behaviour.

Strengths

- Every item is explicitly traceable to a classical source and standard Sanskrit lexicon, improving construct fidelity.
- The scoring and Uttama–Madhyama–Hina interpretation framework allows straightforward classification of Guna predominance.

Limitations

- Content validity does not establish reliability (internal consistency, test–retest stability) or construct validity; these require separate psychometric evaluation.
- The expert panel size ($n = 5$), while meeting minimum recommended standards, is relatively small and may not capture full diversity of expert opinion.
- The pilot sample was drawn from a single institution which may limit generalisability to the broader 18–30-year population.
- Self-report assessment of classical qualities may be subject to social-desirability bias.
- Cronbach's alpha test was not used for the validation. It was based on expert opinion only.

CONCLUSION

A 35-item Triguna Assessment Scale, comprising 14 Sattva, 11 Rajas and 10 Tamas items derived from classical Ayurvedic sources, was developed and subjected to content validation by a five-member expert panel.

The scale offers a classically grounded and quantifiable approach to assessing Guna predominance in young adults and may serve as a foundation for further reliability and validity testing, as well as for exploring associations between Manas Gunas and health, academic, and lifestyle outcomes in student populations.

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Annexures

1) Sattva Guna Assessment

1) Single words - Mango (आम), Night (रात), Key (कुंजी), Car (गाड़ी), House (घर) Paired words - Day-Night (दिन-रात), Sister-Brother (बहन-भैया), Joy-Sorrow (खुशी-दुःख), Up-Down (ऊपर-नीचे), Black-White (काला-सफ़ेद) Single words - Coconut (काजू), Lock (लाकड़), Train (ट्रेन), Fort (किला), River (नदी) Paired words - Red-Yellow (लाल-पीला), Land-Sky (भूमि-आकाश), Sun-Moon (सूर्य-चंद्रमा), King-Queen (राजा-रानी)	After 5 minutes, for short-term memory - Single words and paired words together - 1-3 single/paired words - 4-7 single or paired words - 7-10 single/paired words - If he/she is able to recite 4 or 5 words and 3 or more pairs after 60 minutes, he/she is supposed to have good and long-term memory (Smritimaan), alpasmriti Madhyama Smriti c) smritiman.
2) What do you do to completely understand something taught in class or something you have read?	a) I face difficulty in understanding; even after a lot of effort, I understand only a little. b) After practicing/revising it 2-3 times, I remember it permanently. c) Whatever is taught or read once, I remember it right away
3) If you have an exam but your favorite movie is showing, what would you do in that situation?	a) I will watch the movie. b) If the subject is difficult I will study, otherwise I will watch the movie. / I will watch the movie and then stay up and study

	afterward. c) I will only study.
4) Do you ever change your decision depending on the situation?	a) I always change it. b) I change it sometimes. c) I always stay firm on my decision.
5) Do you help others without expecting anything in return?	a) I help only while expecting something in return. b) I don't help unless asked / I only help if that person has helped me before. c) I help without expecting anything in return.
6) Do you forgive everyone who asks for forgiveness?	a) Never. b) I forgive depending on the person. c) I forgive if the person is apologizing sincerely
7) Do you ever help even a stranger?	a) I never help. b) I don't help unless asked. c) I always help.
8) If a teacher holds your friend responsible for a mistake that is actually yours, what would you do?	a) I will not admit the mistake myself, and I will not let anyone else say it's my mistake either. b) I will admit the mistake only if I feel I won't be punished for it. c) I will admit that it is my mistake and accept whatever punishment I get.
9) When there is a fight or a disagreement, what do you do while putting forward your side?	a) I raise my voice while speaking, and hands get raised (to hit). b) If I get very angry, sometimes swear words come out. c) I calmly explain / I ignore it.
10) Before making any important decision, or on an important day, do you start that task by bowing to God first?	a) I start important work even without bowing to God. b) I bow to God only sometimes, if I'm stressed. c) On every important day, when making a decision, I do not start the work without bowing to God first.
11) Do you know what you are capable of and what you are not capable of? (Abilities and limitations)	a) I am unsure about both. b) I know about some of it. c) I know what I am capable of and what I am not capable of.
12) Do you let others use your own belongings, do you share them?	a) I don't like giving my things to people. b) I give it only if I don't need that thing. c) I always give/share.
13) Do you regularly and enthusiastically do things like waking up in the morning, bathing, and eating a balanced meal on time?	a) I feel lazy/bored about it. b) I do it most of the time. c) I like doing these things on time.
14) Do you feel it is necessary to do yoga asanas and meditation for mental peace?	a) Never. b) Sometimes.

c) I do it regularly.

Rajas Guna assessment

1) If you get a holiday, what do you usually do?	a) I stay at home. b) I go out sometimes. c) I prefer going out over staying at home. / I go out even if I don't get a holiday.
2) Do you feel that you should have the best things, full marks, and all such things?	a) I am content with what I have. b) Sometimes I try to get the best things for myself. c) I always like having the best things for myself; I am ready to do anything for that.
3) Do you ever change your decision depending on the situation?	a) I stay firm on my decision. b) My decision sometimes changes depending on the situation. c) My decision always changes.
4) If an elder scolds you for some reason, what do you do?	a) I calmly try to understand what they are saying. b) Sometimes I state my side clearly / I answer back rudely. c) I always criticize them harshly.
5) If people oppose your decision, what do you do?	a) I always try to understand the reason for the opposition. If the reason is right, I change my decision. b) If someone requests me, I change my decision. c) I cannot bear being opposed at all, and I get extremely angry.
6) If a sad event occurs, what is your reaction?	a) I feel bad, but I recover from it and try to stay calm. b) For a few days I don't feel like talking to anyone, I want to be alone. c) I cry a lot, become very sad, and feel like I may not be able to come out of it.
7) If a teacher holds your friend responsible for a mistake that is actually yours, what would you do?	a) I will admit that it is my mistake and accept whatever punishment I get. b) I will admit the mistake only if I feel I won't be punished for it. c) I will not admit the mistake myself, and I will not let anyone else say it's my mistake either.
8) Do you ever help even a stranger?	a) I always help. b) I don't help unless asked. c) I never help.
9) Do you take your anger out on others?	a) I usually don't take my anger out on anyone. b) If it's someone I dislike, I take my

	anger out on them. c) Often I can't control my anger.
10) What do you feel about praising yourself?	a) I don't like praising myself. b) If I am very happy, I praise myself. c) I tell everyone about my happiness and my achievements.
11) What do you feel about your success?	a) I feel that I still have a lot more success to achieve. b) I feel that not just me, but many other people have achieved this same success too. c) I feel extremely proud that I did this.

Tamas Guna Assessment

1) Do you like doing effort such as going for long walks and exercising, or do you like lying around/sleeping?	a) I always like going for long walks and exercising. b) I exercise sometimes, as needed. c) I prefer lying around more, I feel lazy about exercising.
2) How do you feel if you don't get something you really wanted?	a) I think about why I didn't get it and try again. b) I feel a little disappointed, and I can't keep trying consistently / I give up midway. c) I feel extremely disappointed, I blame myself, but I don't do anything about it.
3) Do you get confused while making a decision? Do you feel torn/conflicted?	a) I think it through from every angle and make my own decision. b) It takes me time to decide, and I take help from others. c) Even after taking help from others and thinking a lot, I am unable to make a decision.
4) Before making any important decision, or on an important day, do you start that task by bowing to God first?	a) On every important day, when making a decision, I do not start the work without bowing to God first. b) I bow to God only sometimes, if I'm stressed. c) I start important work even without bowing to God.
5) Do you know what you are capable of and what you are not capable of?	a) I know what I am capable of and what I am not capable of. b) I know about some of it. c) I am unsure about both.
6) If one of your decisions is going to trouble others, do you still stick with that same decision?	a) I change my decision after considering others' opinions. b) If it's going to trouble people close to me, I change my decision. c) I don't change my decision, thinking everyone will understand later.

7) When there is a fight or a disagreement, what do you do while putting forward your side?	a) I calmly explain / I ignore it. b) If I get very angry, swear words sometimes come out. c) I raise my voice while speaking, swear words come out.
8) Do you feel it is necessary to do yoga asanas and meditation for mental peace?	a) I do it regularly. b) I do it sometimes. c) I don't feel the need for it.
9) Do you regularly and enthusiastically do things like waking up in the morning, bathing, and eating a balanced meal on time?	a) I like doing these things on time. b) I do it most of the time. c) I feel lazy/bored about it.
10) Even if you had a proper night's sleep, do you still feel very sleepy during the day?	a) I only get sleepy at night. b) If I haven't slept properly at night, I feel sleepy during the day. c) I feel sleepy even while just sitting during the day.

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