Relationship between *Vedic* personality traits (*Sattva*, *Rajas,* and *Tamas*) with life satisfaction and perceived stress in healthy university students: A cross-sectional study

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Abstract

Introduction: *Trigunas* are three basic mental attributes of a personality according to Indian *Vedic* literature that explains the relationship between mental attributes and human behavior. The three attributes are *Tamas* (tendency toward lethargy and rigidity), *Rajas* (tendency toward ambition and activity) and *Sattva* (tendency toward selfless service), respectively. Satisfaction with life and perceived stress are the important determinants of one's quality of life. **Aim:** A cross-sectional study assessed the relationship between *Trigunas*, life satisfaction and perceived stress. **Materials and methods:** The study recruited 121 willing healthy university students (75 females) with general health questionnaire scores ≤3. All participants were assessed using standardized psychometric tools. **Results:** Spearman two-tailed correlation test revealed *Sattva* to have positive correlation with life satisfaction ($r = 0.503$) and negative correlation with perceived stress ($r = -0.302$) and other two *Gunas* (*Tamas*: $R = -0.77$; *Rajas*: $R = -0.75$), respectively. On the other hand, both *Rajas* and *Tamas* correlated positively with perceived stress (*Rajas*: $R = 0.183$; *Tamas*: $R = 0.321$) and negatively with life satisfaction (*Rajas*: $R = -0.40$; *Tamas*: $R = -0.36$). **Conclusion:** This cross-sectional study on university students in India suggests an association of *Vedic* personality traits (*Sattva, Rajas* and *Tamas Gunas*) with life satisfaction, and perceived stress.

Keywords: Healthy adults, life satisfaction, perceived stress, *Trigunas*, *Vedic* personality inventory

Introduction

Psychologists over the years have defined human personality using many models and theories. Vedic literature (*Sankhya Yoga)* and the Indian spiritual text "*Bhagwad Gita*" provide the basic framework for the concept of Indian psychology based on the relationship between yoga-based mental attributes (*Gunas)* and human behaviour. *Vedic* literature describes three *Gunas* - *Sattva, Rajas* and *Tamas,* representing illumination, activity, and inertia, respectively. These are the three fundamental qualities of human personality.[1] *Sattva* is the quality of intelligence that creates harmony, balance, and awakening[2] and generates tendencies toward selfless service, disinterested affection, purity of heart, control over senses, truthfulness and compassion toward other beings.[3] *Rajas* is the quality of action, passion, and change.[2] It brings forth the characteristics of ambition, restlessness, discontentment, envy and sensuousness along with positive qualities of constructivism, passion, industriousness and enthusiasm.[3] *Tamas* is the quality of dullness, ignorance, fear and inertia.[2] It brings a state of mental rigidity, apathy, delusion and destruction.[3] The three tendencies promote different temperaments, leading to the formation of personality based on the *Guna* dominance.[4]

In *Ayurveda, Trigunas* constitute the integral component of the mind just as *Tridoshas* (*Vata*, *Pitta* and *Kapha*) constitute the integral component of the human body. The two forms the

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physical and mental characteristics of an individual in health and disease, respectively. It has been stated in Ayurveda texts that vitiation of *Rajas* and *Tamas Gunas* lead to mental health problems which in turn influence physical health (Ch. Vi. 6.8).[5] Previous studies have observed that individuals with *Sattva Guna* predominance have better quality of life than those with *Rajas* or *Tamas* predominance.[6,7] Similar studies on healthy subjects have reported well-being to have positive correlation with *Sattva* and negative correlation with *Rajas* and *Tamas*.[8] Quality of life of an individual depends on many factors, of which psychological stress[9] and satisfaction with life[10] play an important role. Both these factors have also been identified as vital contributors in increasing morbidity and mortality due to common lifestyle-related disorders.[9] Still how stress and satisfaction with life is perceived by individuals with different *Vedic* personality traits is not known. Based on the descriptions in yogic literature (*BG*: 14),[3] we hypothesized that *Sattva* traits would correlate positively with life satisfaction and negatively with perceived stress, and that this relationship would be reversed for *Rajas* and *Tamas* traits, respectively. Understanding this is important, as traditional Indian texts provide ways and specific lifestyle regimen to enhance well-being and promote growth of personality through transformation of *Gunas* from *Tamas* to *Rajas* and *Rajas* to *Sattva*.[11] Thus, this study was planned with the objective to find out how "*Trigunas*" are related to life satisfaction and perception of psychological stress.

Materials and methods

Study design
The study followed cross-sectional design and convenient sampling for recruitment of subjects.

Settings and participant details including Sample size
The study was conducted at one university of South India. University students were invited to participate in study through the display of research study flyer in University campus. One hundred and fifty students willing to participate in the study were screened over a period of 2 months. Out of 150, 121 participants fulfilling the inclusion criteria were recruited. Only healthy participants in the age range of 18–45 years with a General Health Questionnaire score ≤3 were included and subjects with any comorbid psychiatric and physical illnesses or history of any kind of substance use were excluded from the study. Written informed consent was taken and institutional ethical clearance (IEC-MU/173/2019) was obtained.

Outcome measures
For assessment, standardized psychometric tools were used.

Vedic Personality Inventory for assessing Guna scores
Vedic Personality Inventory (VPI) is a validated and reliable tool extensively used for assessing *Trigunas*.[12] It is a self-reporting tool with 56 items with seven response to choose from (ranging from 1 - completely disagree to 7 - completely agree). It is freely available online (http://

www.vedicpersonality.org/questionnaire.php?name=) and it automatically calculates Standard *Guna* scores. This is calculated by dividing individual *Guna* scores with total score and multiplying it by 100. Thus, scores of *Sattva* (S), *Rajas* (R) and *Tamas* (T) for each individual are obtained in percentage in such a way that their total (S + R + T) is 100%.

Perceived stress scale for psychological stress
Perceived stress scale (PSS) assesses nonspecific perceived stress, i.e., the degree to which situations in one's life is appraised as stressful.[13] It is a 10-item tool to be filled by the subject. Its reliability and validity is established.

Satisfaction with life scale assesses life satisfaction
Satisfaction with life scale (SWLS) is a 5-item scale recorded on a 7-point scale and helps in determining the overall quality of one's life by cognitive judgement of global life satisfaction.[14]

Data sources
All the recruited participants were given the hand-outs of the three scales. For a single time-point, they self-rated the scales post recruitment. The data were then double entered in the Excel sheet.

Statistics
The scores obtained on the psychometric tools were not normally distributed; hence Spearman correlation test was used to assess the correlation with significance level set at 0.05. Data analysis was performed using the SPSS 24.0 (IBM India Pvt. Ltd., Bengaluru, Karnataka, India). Sub-group analysis was also performed with gender as covariate. The strength of association between two variables was labelled into three categories as strong ($r > 0.6$), moderate ($r = 0.4$–0.6), and weak ($r = 0.2$–0.4).

Results

Participant characteristic
One hundred and twenty-one participants (46 males and 75 females) with a mean age of 29.7 ± 7.4 years participated in the study. All participants belonged to either middle or upper middle socioeconomic strata with average education of 15 years. Table 1 provides descriptive statistics of the sample population. Figure 1 provides average *Guna* scores of the recruited participants.

Correlation analysis results
The results provided in Table 2 show a moderate positive correlation between scores of *Sattva* with life satisfaction ($r = 0.503$, $P < 0.001$) and weak negative correlation of the same with PSS ($r = -0.302$, $P < 0.001$). On the other hand, both *Rajas* and *Tamas* show moderate to weak negative correlation with life satisfaction (*Rajas*: $R = -0.40$, $P < 0.01$; *Tamas*: $R = -0.36$, $P < 0.001$) and weak positive correlation with perceived stress (*Rajas*: $R = 0.183$, $P < 0.05$; *Tamas*: $R = 0.321$, $P < 0.001$). Within VPI measures, it was observed that *Sattva* had a strong negative correlation

with *Rajas* (r = −0.751, P < 0.001) and *Tamas* (r = −0.775, P < 0.001), respectively. A weak positive correlation was found between *Rajas* and *Tamas* scores (r = 0.226, P < 0.01). In addition, a weak negative correlation was observed between SWLS and PSS scores (r = −0.254, P < 0.01). Figures 2 − 4 provide graphical representation of correlation results and figure 5 provides the graphical abstract image.

Sub-group analysis

Sub-group analysis based on gender revealed a slightly different association between *Guna* scores and psychometric tools and within the *Gunas*, respectively. The details of the sub-group analysis are provided in Tables 3 and 4 in the supplementary material. It was observed that in males (n = 46), the strength of association between *Gunas* and psychometric tools (r = −0.254, P < 0.01) and within *Gunas* did not differ from overall results. However, among females (n = 75), the results

were slightly different from the overall results. For example, in females, the PSS did not show significant correlation with *Sattva* and *Rajas* scores (*Sattva*: r = −0.191, P > 0.05; *Rajas*: r = 0.030 P > 0.05). However, weak positive correlation of PSS with *Tamas* scores remained in line with overall results. Similarly, the positive correlation observed between *Tamas* and *Rajas Gunas* in overall results as well as in male subjects was not observed in the female subjects (r = 0.093, P > 0.05).

Discussion

This is the first study to look at the association between *Trigunas* and perceived stress. We found a positive relationship between perceived stress and scores pertaining to *Rajas* and *Tamas* traits, respectively. On the other hand, *Sattva* traits showed negative relationship with PSS.

The finding of moderate correlation between *Tamas* traits and perceived stress is in line with ancient yogic texts where

Table 1: Descriptive statistics of the study population

Variables	Mean±SD
n (male: female)	121 (46: 75)
Age (years)	29.7±7.4
Education (years)	15.48±2.0
SSS	48.03±8.18
SRS	28.92±5.36
STS	23.06±5.08
SWLS	26.42±4.79
PSS	15.79±4.67
GHQ	1.30±0.77
SES	2.07±0.25

SSS: Standard *Sattva* score, SRS: Standard *Rajas* score, STS: Standard *Tamas* score, SWLS: Satisfaction with life scale, PSS: Perceived stress scale, GHQ: General Health Questionnaire, SES: Socioeconomic status, SD: Standard deviation
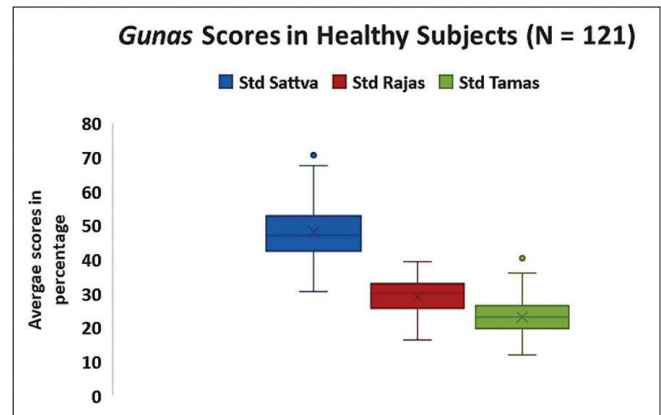
Figure 1: *Gunas* scores in healthy participants

Table 2: Correlation between *Trigunas*, satisfaction with life and perceived stress

Parameters	SSS	SRS	STS	SWLS	PSS
SSS	1.000	−0.751***	−0.775***	0.503***	−0.302***
SRS	−0.751***	1.000	0.226*	−0.400**	0.183*
STS	−0.775***	0.226*	1.000	−0.362***	0.321***
SWLS	0.503***	−0.400**	−0.362***	1.000	−0.254**
PSS	−0.302***	0.183*	0.321***	−0.254**	1.000

*P<0.05, **P<0.01, ***P<0.001. SSS: Standard *Sattva* score, SRS: Standard *Rajas* score, STS: Standard *Tamas* score, SWLS: Satisfaction with life scale, PSS: Perceived stress scale

Table 3: Correlation between *Trigunas*, satisfaction with life, and perceived stress in female gender

	Gender: Female				
Parameters	SSS	SRS	STS	SWLS	PSS
SSS	1.000	−0.704***	−0.724***	0.540***	−0.191
SRS	−0.704***	1.000	0.093	−0.404**	0.030
STS	−0.724***	0.093	1.000	−0.381***	0.310**
SWLS	0.540***	−0.404**	−0.381***	1.000	−0.151
PSS	−0.191	0.030	0.310**	−0.151	1.000

**P<0.01, ***P<0.001. SSS: Standard *Sattva* score, SRS: Standard *Rajas* score, STS: Standard *Tamas* score, SWLS: Satisfaction with life scale, PSS: Perceived Stress Scale
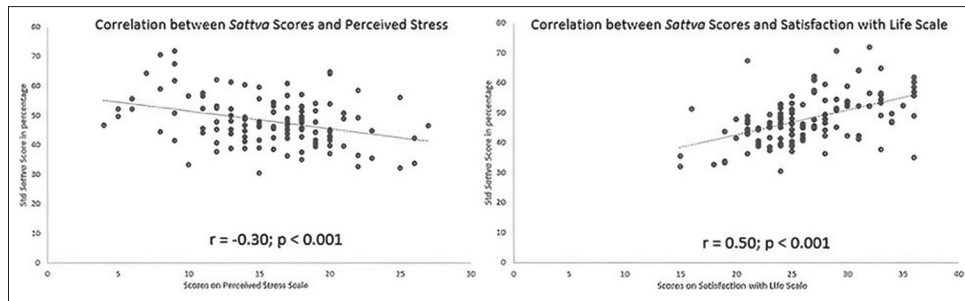
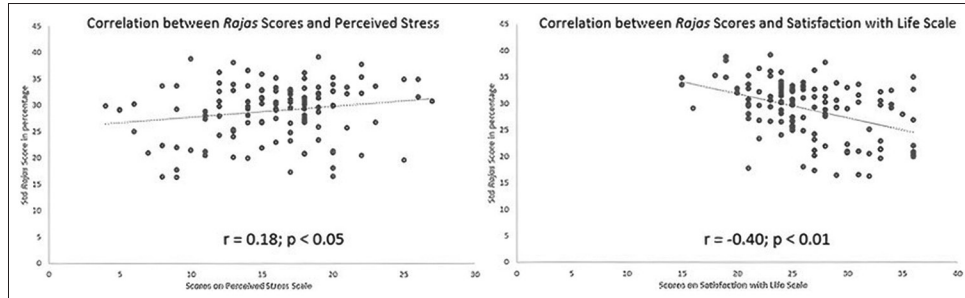**Figure 2:** Correlation results graphs for *Sattva* with perceived stress scale and satisfaction with life scale

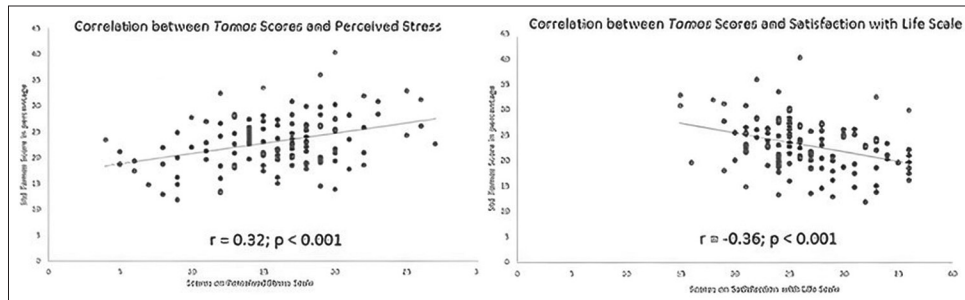**Figure 3:** Correlation results graphs for *Rajas* with perceived stress scale and satisfaction with life scale

Figure 4: Correlation results graphs for *Tamas* with perceived stress scale and satisfaction with life scale
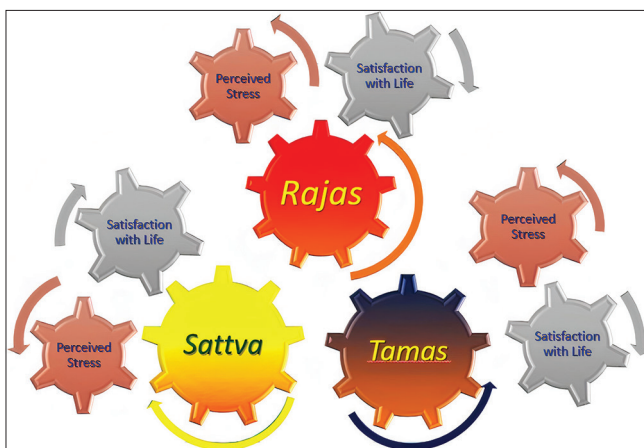

Figure 5: Graphical abstract image

individuals with high *Tamas Guna* have reported to perceive the situation as more stressful than reality. As per the *Bhagavad Gita*, *Sattva* relates to joy, positivity, surrender to higher principle, and knowledge resulting in overall satisfaction,

whereas *Rajas*, the originator of desire leads to attachment and frustration, and *Tamas* leads to ignorance and delusion. Both *(Rajas* and *Tamas*) result in bondage and lead away from happiness and satisfaction.[3] Previous works on *Triguna* theory have also emphasized the superiority of *Sattva* over *Rajas* and *Tamas* in terms of well-being[15] and effective work culture.[16]

Further findings from the study show moderately positive correlation of *Sattva Guna* with life satisfaction and strongly negative correlation of the same with *Rajas* and *Tamas,* respectively. The results of this study replicate the findings from previous studies where healthy students showed mild positive correlation of *Sattva* with life satisfaction and subjective happiness and well-being,[8] and negative correlation between *Sattva* and other two *Gunas* (*Rajas* and *Tamas*),[8,15] although the strength of the correlations in our study is stronger. Previous studies have also shown a negative association of *Rajas* and *Tamas* with well-being indicators.[8] The greater inverse relationship between *Rajas* and life satisfaction possibly be explained by the logic that people with high *Rajas* tend to have more expectations from their actions and have

Table 4: Correlation between *Trigunas*, satisfaction with life, and perceived stress in male gender

Parameters	Gender: Male				
	SSS	SRS	STS	SWLS	PSS
SSS	1.000	−0.826***	−0.819***	0.468***	−0.397**
SRS	−0.826***	1.000	0.436**	−0.403**	0.408**
STS	−0.819***	0.436**	1.000	−0.349*	0.304*
SWLS	0.468***	−0.403**	−0.349*	1.000	−0.398**
PSS	−0.397**	0.408**	0.304*	−0.398**	1.000

*$P<0.05$, **$P<0.01$, ***$P<0.001$. SSS: Standard *Sattva* score, SRS: Standard *Rajas* score, STS: Standard *Tamas* score, SWLS: Satisfaction with life scale, PSS: Perceived Stress Scale

better insight into their actions and sufferings than those with high *Tamas*. Thus, they feel less satisfied, whereas those with *Tamas* predominance may remain relatively passive and have less dissatisfaction.

The relationship between *Rajas* and *Tamas* is also in line with previous studies, although the correlation in our study is weaker than shown earlier.[8] This difference in the intensity of correlations between studies may be due to the differences in population characteristics such as age range, gender, education and habits or it may have occurred just by chance (due to random error). For example, the current study had almost twice the number of females than males (male–46 and females–75). Sub-group analysis revealed that males showed moderate positive correlation between *Rajas* and *Tamas Gunas*, but in female subjects, no such correlation was observed. Previous studies, on the other hand, had either equal distribution or more males.[8] Second, participants with substance use were excluded which was not so in the previous studies. In spite of these differences across studies among healthy participants (across genders), *Sattva Guna* has shown a consistent trend of negative correlation with *Tamas* and *Rajas Gunas*, and *Rajas* and *Tamas Gunas* have shown a positive correlation with each other. A *Shloka* in *Bhagavad Gita* describes that all three *Gunas* interact in such a way that when one becomes dominant, the other two get subdued,[3] for example, *Sattva* manifests by overpowering *Rajas* and *Tamas* and vice versa for other *Gunas* (*BG*: 14.10).[3]

This study could demonstrate the above verse in relation to *Sattva* with other two *Gunas* but not between *Rajas* and *Tamas*. Although a negative correlation was expected between *Tamas* and *Rajas* as per the ancient texts, instead a positive correlation was observed. This deviation can be explained by considering psychometric properties of the VPI tool: While generating normative data during standardization of VPI tool, Wolf *et al.* also observed a positive correlation between *Rajas* and *Tamas Gunas*.[12] The way these *Gunas* are measured through VPI and their interpretation as per the ancient texts may not match completely. A study with larger sample size and wider population coverage may bring more clarity. This needs further exploration in future studies.

As per *Ayurveda, Prakriti* (constitution) of an individual is determined at the time of the birth of an individual, but it also advocates the possibility of modification of the mental constitution (*Gunas*) by following certain traditional lifestyle practices. These practices involve the components of *Ahara* (diet), *Vihara* (recreation and sleep), *Vyavahara* (behavior) and *Vichara* (cognition) and targets the modification of a particular *guna*. Ancient yogic texts have defined a fourth mental attribute called "*Gunatita*" (beyond *Gunas*). This is a state of mind where an individual transcends all the three *Gunas*. Such a state has been described as a state of freedom from all sorts of sorrows related to birth, death, old age and is characterized by equanimity of mind in all sorts of dualities such as pain or pleasure, blame or praise, disgrace or honour (BG. 14.20-25).[3] The natural process of spiritual evolution and psychological transformation involves transcendence from *Tamas* to *Rajas,* from *Rajas to Sattva,* and finally transcending all the *Gunas* to reach the state of "*Gunatita*" (*BG* 14.8-10).[11] Similarly, traditional yogic texts describe behavioural tendencies that are promoted by different *gunas*. For example, *Bhagwad Gita* describes the dietary preferences of individuals based on the dominance of a particular *Guna* in their psyche. These tendencies may make an individual with a particular *Guna* dominance, more prone toward a particular lifestyle disorder. For example, an individual with dominant *Rajas Guna* may prefer food items that are more spicy and sour in taste. This may make them more prone for stress, anxiety, and physical illnesses such as stomatitis, heart burn, etc.[17] (BG 17.9). Thus, understanding the relationship between *Vedic* personality traits and determinants of well-being is important, as overall well-being may be achieved and disorders may be prevented by application of lifestyle regimen in accordance with the dominant *Guna* traits of an individual.

The present study has several limitations: (1) relatively smaller sample size, (2) only student population is included, although they came from diverse regions, (3) all participants were recruited from a single university in South India, so generalization of the findings to other population cannot be done, (4) female predominance, (5) despite the use of validated scales, measurement bias in the responses cannot be denied due to the involvement of subjective opinion.

Conclusion

This cross-sectional study on university students in India suggests an association between *Vedic* personality traits of

Sattva, Rajas, and *Tamas Gunas* and satisfaction with life and perceived stress. *Sattva* trait was associated with higher life satisfaction and lower perceived stress. Both *Rajasika* and *Tamasika* traits were associated with reduced life satisfaction and higher perceived stress. *Rajas* traits showed greater negative correlation with life satisfaction than *Tamas* traits, whereas *Tamas* traits showed greater positive correlation with perceived stress. Based on this understanding, future studies should focus on assessing the impact of *Guna*-based yogic lifestyle interventions on *Vedic* personality traits and associated lifestyle factors in health and disease.

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Conflicts of interest

There are no conflicts of interest.

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