THE EFFECT OF PERFORMING REGULAR YOGA FOR ONE YEAR ON
THE PERSONALITY TRAIT OF FIRST YEAR NATUROPATHY AND
YOGA MEDICAL SCIENCES UNDERGRADUATE STUDENTS ACROSS
TAMIL NADU: A LONGITUDINAL STUDY

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Abstract: Introduction-Emotional Intelligence (EI) is a guide to help understand the way one’s personality changes with time and situation. This EI can be manipulated to help build a more positive personality of the individual by Yoga interventions.

Material and Methods-A pre and post intervention study of the effect of Yoga on first year students of Bachelors of Naturopathy and Yogic Sciences (BNYS) course across all the colleges in the state of Tamil Nadu, India was carried out. Baseline assessment was done using the TEIQue questionnaire and The Vedic Personality Inventory (VPI) scale. Post intervention assessment was done at the end of their academic session. The data was analysed using SPSS 20.0. All p-values <0.05 was considered to be statistically significant.

Results-There were total 245 participants in the study; 187 females and 58 males in the entire study with Yoga intervention. Among the comparative group; there were 103 females and 12 males in Ayurveda college; in the Homeopathy group; there were 90 females and 9 males whereas in the Siddha group; there were 80 females and 22 males. On intra group comparison of the baseline scores of the Naturopathy group no statistically significant change was observed. Post intervention; the Naturopathy students showed an overall improvement as compared to the other specialties. There was a weak positive correlation of Sattva with EI scores. We observed a weak negative correlation of Rajas and Tamas with the EI scores among both males as well as females at baseline (Pearson’s co-efficient correlation) in both the intervention as well as the comparison groups. On comparing the mean outcome for the VPI and EI scores of both the groups at the end of the study, there was no statistically significant change in the overall changes in the percentage with regards to the 3 gunas; even though the Tamas guna showed decrease in the Naturopathy group. But there was a positive impact on the emotional parameter of the

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**Conclusion**-Yoga intervention is an essential tool for irreversible and positive change in the personalities of the students in health care courses. It definitely helps to reduce negative traits and strengthen the EI, overall personality and suppresses the Tamas Guna of a person.

**Keywords**: Yoga, Guna, EI, IQ, Personality

## I. Introduction

Emotional intelligence (EI) is an essential aspect of overall maturity scale of any individual. Considering only the intelligence quotient (IQ) may not always serve the purpose while assessment of a person. Those with a high EI not only recognize their own emotions but are also sensitive to that of the others. This EI can be successfully used to guide, think and help discern between different things; by labelling them appropriately; so that adjusting and adapting to the given environmental condition becomes much less taxing.\(^1\) This term of EI became popular with the book by Daniel Goleman in 1995.\(^2\) He called it as a skill set which was responsible to drive an individual’s leadership performance. A recent Meta-analysis showed that EI has a significant impact on the academic performance of the students.\(^3\) According to Bowles and Gints; EI parameters like- attitude, motivation, personality traits, self-regulation, resilience, and social and emotional skills are also related to the academic performance.\(^4\)

As per Indian traditional understanding; one uses the philosophical traditions such as- Vedanta, Samkhya, Yoga, Jainism, and Buddhism among the various others to understand this concept of personality changes and its association with the EI.\(^5-16\) The psychological materials defining various concepts for human understanding are richly described in the Upanishads. The relationship of body and soul and its various interactions with the outer environment has been detailed across the centuries of rich Indian texts.\(^12\) The concept of Guna (behavior) has been first detailed in the Atharva Veda. It was later described in the Bhagwat Gita. This later became a part of the Sankhya Darsana. It describes personality behavior as Triguna- (sattva) stability; rajas (activation) and tamas (inertia). Manas (Mnaovritti manopraavritti) is associated with mental working and stability.\(^14-17\) The presence of the 3 gunas; determines the personality of an individual; exhibited by his/her behavior and working style; as mentioned in the table below.\(^18\)

<table>
<thead>
<tr>
<th>Guna</th>
<th>If dominant; then how is the person?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sattva</td>
<td>Inherent desire to be good and caring.</td>
</tr>
<tr>
<td></td>
<td>Person performs his/her work as a duty.</td>
</tr>
<tr>
<td></td>
<td>Understands the difference between right and wrong in the true sense.</td>
</tr>
<tr>
<td></td>
<td>Has more spiritual orientation.</td>
</tr>
<tr>
<td>Rajasic</td>
<td>Person is more greedy and restless</td>
</tr>
<tr>
<td></td>
<td>More dominant of personal gains</td>
</tr>
<tr>
<td></td>
<td>Shows enthusiasm, interest and hyperactive state.</td>
</tr>
<tr>
<td>Tamasic</td>
<td>More fantasies and ambiguity</td>
</tr>
<tr>
<td></td>
<td>Individual is more apprehensive and revengeful</td>
</tr>
<tr>
<td></td>
<td>People are more self-indulging and self-centered.</td>
</tr>
</tbody>
</table>

**Table 01**: Type of Guna and the effect on the personality trait of the individual

The entire theory of gunas is very relevant. One can relate it to day to day experiences every moment without failure. On the mental plane these three gunas create various tendencies which
can be classified into positive and negative categories. And most importantly the permutations of gunas which constitute nature; can be harmonized; there come yogic practices, tools and principles. The various yogic tools physical and non-physical help the individual to harness these subtle essential potencies of nature. All three gunas are contrary and yet complementary to each other.

A paradigm shift in the guna of a person from Tamasic or Rajasic to Sattva is a long process and requires certain skill sets to be taught to overcome the negative traits and to control the overflow of unwanted emotions. Yoga is a long standing answer that brings about irreversible changes in a person for a more positive approach. As a discipline, it helps an individual not only physically; but also to grow emotionally. It affects the general health holistically when practiced on a daily basis. Studies show that EI is positively correlated with Sattva and negatively with Tamas, suggesting that a Sattvic personality indicates better self-control and by improving Guna personality. Thus long-term yoga practice may stabilize EI. However the studies which have revealed positive impact of yoga practices upon the variables EI and Guna (personality) shifting towards Sattva Guna were conducted on subjects who volunteered themselves for yoga intervention. No previous study has evaluated the effect of obligatory Yoga on EI and change in personality in healthy medical student volunteers as well as consistency of correlations between these variables before and after a yoga intervention and hence this study was proposed. The aim of the study was to see for the changes in the Guna/ shift in personality of the Bachelors in Naturopathy and Yogic Sciences (BNYS) students after receiving Yoga and the corresponding rise in EI scores.

II. Material and Methods:

Ethical clearance was obtained from the Institutional Ethics Committee of Government Yoga and Naturopathy Medical College, Tamil Nadu, India before the start of the study (letter number-RES/IEC/GYNMC/2016/016).

Yoga is a compulsory daily routine practise across these institutions on daily basis. The first year curriculum of Yoga offered in BNYS course under Tamil Nadu Dr. MGR Medical University includes the practice of yogasanas, pranayama, meditation, kriyas and lectures on yoga philosophy for a span of twelve months. Lecture topics on Philosophy of Yoga include History of Yoga, Pathanjal’s astanga yoga and yoga evolution apart from the theoretical aspects of yogasanas, pranayama, meditation and kriyas. Candidates were required to put in minimum 90 % attendance in both theory and practical separately, in the subject before admission to the university examination. Each 60 min session of practical yoga was taught by qualified instructors and teachers in all the colleges, throughout the year which is a uniform protocol. All students across these four registered Naturopathy and Yoga colleges were included in the study for the intervention. There were total 245 participants in this group of which 187 were females and 58 were males.

Among the comparative group; there were 103 females and 12 males in Ayurveda college; in the Homeopathy group; there were 90 females and 9 males whereas in the Siddha group; there were 80 females and 22 males. All these colleges were approached and permission was sought to conduct the study.

Permission was obtained from the heads of all the institutions and a written informed consent for the study was taken from all the students. A baseline assessment was done before the beginning of their academic sessions; to record the personality based on TEIQue questionnaire and The Vedic Personality Inventory (VPI) scale. The scales were tested for content and construct
validity before the final study. A pilot was also carried out among 50 students for assessment of the study. A before and after assessment was done using the same tools; at the end of their curriculum for comparison. The data was collected and entered in Microsoft excel 2013 after coding. The calculation of the personality classifications was done as per the standard tool guide for calculation. The data was checked first for normality of distribution based on the Shapiro Wilk test. Paired t-test was applied for before and after comparison of the mean scores. Comparison amongst male and female was also done using the independent t-test. Statistical Package for Social Software (SPSS 20); IBM Analytics, New York, U.S.A was used to carry out the analysis. All p-values <0.05 was considered to be statistically significant.

III. Results:

Table 01 shows the overall mean percentage scores of VPI and the mean of the TEIQue-SF scales at baseline for the Naturopathy group:

<table>
<thead>
<tr>
<th></th>
<th>Sattva</th>
<th>Rajas</th>
<th>Tamas</th>
<th>Well being</th>
<th>Self-Control</th>
<th>Emotionality</th>
<th>Sociability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>38.75</td>
<td>31.91</td>
<td>29.30</td>
<td>4.71(±0.93)</td>
<td>4.10(±0.77)</td>
<td>4.38(±0.81)</td>
<td>3.99(±0.86)</td>
</tr>
<tr>
<td>Female</td>
<td>42.79</td>
<td>30.16</td>
<td>27.10</td>
<td>4.86(±0.96)</td>
<td>4.25(±0.83)</td>
<td>4.53(±0.89)</td>
<td>4.18(±0.93)</td>
</tr>
<tr>
<td>Total</td>
<td>41.82</td>
<td>30.58</td>
<td>27.61</td>
<td>4.83(±0.95)</td>
<td>4.20(±0.82)</td>
<td>4.50(±0.87)</td>
<td>4.14(±0.91)</td>
</tr>
</tbody>
</table>

Table 01: Overall mean percentage scores of VPI and the mean of the TEIQue-SF scales at baseline of all the study participants in the Naturopathy group.

Table 02 shows the overall mean percentage scores of VPI and the mean of the TEIQue-SF scales at baseline for the comparison group (Ayurveda, Homeopathy and Siddha).

<table>
<thead>
<tr>
<th></th>
<th>Sattva</th>
<th>Rajas</th>
<th>Tamas</th>
<th>Well being</th>
<th>Self-Control</th>
<th>Emotionality</th>
<th>Sociability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>39.78</td>
<td>30.92</td>
<td>30.01</td>
<td>4.73(±0.92)</td>
<td>4.11(±0.72)</td>
<td>4.37(±0.79)</td>
<td>3.99(±0.89)</td>
</tr>
<tr>
<td>Female</td>
<td>43.77</td>
<td>31.35</td>
<td>27.19</td>
<td>4.89(±0.95)</td>
<td>4.26(±0.81)</td>
<td>4.43(±0.79)</td>
<td>4.19(±0.93)</td>
</tr>
<tr>
<td>Total</td>
<td>42.86</td>
<td>31.59</td>
<td>28.62</td>
<td>4.81(±0.94)</td>
<td>4.20(±0.79)</td>
<td>4.40(±0.81)</td>
<td>4.14(±0.92)</td>
</tr>
</tbody>
</table>

Table 02: Overall mean percentage scores of VPI and the mean of the TEIQue-SF scales at baseline for the comparison group (Ayurveda, Homeopathy and Siddha).

There was a weak positive correlation of Sattva with EI scores. We observed a weak negative correlation of Rajas and Tamas with the EI scores among both males as well as females at baseline (Pearson’s co-efficient correlation) in both the intervention as well as the comparison groups (Table 03 and 04).

<table>
<thead>
<tr>
<th></th>
<th>Sattva</th>
<th>Rajas</th>
<th>Tamas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Well being</td>
<td>Self-Control</td>
<td>Emotionality</td>
</tr>
<tr>
<td>Male</td>
<td>0.44 3</td>
<td>0.29</td>
<td>0.341</td>
</tr>
<tr>
<td>Female</td>
<td>0.44 9</td>
<td>0.289</td>
<td>0.356</td>
</tr>
<tr>
<td>Total</td>
<td>0.44 9</td>
<td>0.288</td>
<td>0.356</td>
</tr>
</tbody>
</table>

Table 03: Correlation of VPI scale scores with EI at baseline assessment (Naturopathy group)
There was no statistical difference seen in between the baseline scores of the EI scores between the two groups.

Table 05 shows the overall mean percentage scores of VPI and the mean of the TEIQue-SF scales post intervention in the Naturopathy group.

<table>
<thead>
<tr>
<th>Sattva</th>
<th>Rajas</th>
<th>Tamas</th>
<th>Well being</th>
<th>Self-Control</th>
<th>Emotionality</th>
<th>Sociability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>38.73</td>
<td>32.05</td>
<td>29.22</td>
<td>4.76(±1.00)</td>
<td>4.19(±0.80)</td>
<td>4.49(±0.81)</td>
</tr>
<tr>
<td>Female</td>
<td>43.06</td>
<td>30.27</td>
<td>26.13</td>
<td>4.88(±0.97)</td>
<td>4.28(±0.83)</td>
<td>4.55(±0.83)</td>
</tr>
<tr>
<td>Total</td>
<td>42.49</td>
<td>30.68</td>
<td>26.83</td>
<td>4.88(±0.97)</td>
<td>4.28(±0.82)</td>
<td>4.55(±0.83)</td>
</tr>
</tbody>
</table>

Table 04: Correlation of VPI scale scores with EI at baseline assessment (Comparison group)

There was no change in the overall mean percentage scores of VPI and the mean of the TEIQue-SF scales at baseline for the comparison group (Ayurveda, Homeopathy and Siddha). Table 06 shows the correlation of the VPI with the EI scores post intervention for the Naturopathy group. There was a weak positive correlation of Sattva with EI scores. We observed a weak negative correlation of Rajas and Tamas with the EI scores among both males as well as females post intervention (Pearson’s co-efficient correlation). The Tamas and the Rajas were more negatively co related to the mean EI scores in both the males as well as the females. But on comparing the scores pre and post intervention; the negative association was higher especially for Tamas in the end result. On comparing the baseline and post intervention scores of the group for both the scales; no significant change was observed at the end of the year comparison. The overall Tamas score showed a slight decrease post intervention but it was not found to be statistically significant. The females showed a slight increase in the Sattva Guna as compared to baseline; but again the difference was not statistically significant. Overall the intervention was successful in increasing the Sattva Guna and in turn the 4 dimensions associated with it; but the change observed was not statistically significant.
The pleasure studies improve Thangarajathi that study; Rajas another showed control present which and in Right comparison emotionality But regards Fem a

table

Table 06: The overall correlation of the VPI with the EI scores post intervention for the Naturopathy group.

On comparing the mean outcome for the VPI and EI scores of both the groups at the end of the study, there was no statistically significant change in the overall changes in the percentage with regards to the 3 gunas; even though the Tamas guna showed decrease in the Naturopathy group. But there was a positive impact on the emotional parameter of the TEIQQue-SF scale. The emotionality scores were significantly raised in the Naturopathy group as compared to the comparison group.

IV. Discussion:

Right from the training stage itself for BNYS program; it is a compulsion to perform yoga daily and hence the long term positive effects are evident across the practitioners of Yoga; who have themselves experienced the benefits of this discipline. In the present study; there was a decrease in the Tamas and Rajas Gunas post intervention. The correlation was negative across both males and females groups after one year of Yoga. The Sattva and Rajas showed slight improvement; which was not statistically significant. An upward shift in the Sattva and decrease Tamas Guna was demonstrated in a clinical trial after 8 weeks of Yoga by Deshpande (2009); similar to the present study findings. The practice of breathing exercises and pranayama increases self-esteem, resulting in positive reinforcement. At the same time it helps to alleviate the mood and is a self-control technique in order to improve and stabilize affective state. A 2004 study in Australia; showed that exercise improved both the mental state as well as quality of life of the adults. In another Indian study; Sattva score significantly increased from 39.87 ± 2.02 to 47.14 ± 7.22, Rajas score significantly decreased from 29.15 ± 0.98 to 27.46 ± 4.38, Tamas score significantly decreased from 30.98 ± 1.04 to 25.40 ± 5.11. Such a significant change was not seen in our study; may be because the groups were different and more experienced in life than the students that we had enrolled. Another study by Das et al (2016) on 210 school children (11-16 years) where 10 days of Yoga program was administered; reported of improved cognitive and psychomotor skills along with higher self-efficacy and performance. Tamilselvi and Thangarajathi (2017) concluded from their 5 days of in-house Yoga training that it helped to improve the personality trait scores of 30 adult participants post the intervention. None of the studies have compared any direct link to the EI changes in any of the groups. Yogic practices inhibit the areas responsible for fear, aggressiveness and rage, and stimulate the rewarding pleasure centers in the median forebrain and other areas leading to a state of bliss and pleasure. The practice of yoga generates balanced energy and reduces the inflammatory markers which are
vital to the function of the immune system. Yogic practices inhibit the areas responsible for fear, aggressiveness and rage, and stimulate the rewarding pleasure centers in the median forebrain and other areas leading to a state of bliss and pleasure.\textsuperscript{38,39} According to another study by Shashikala and Lakshmi; a significant increase in emotional sensitivity, emotional maturity, emotional competency, and total emotional quotient after undergoing yoga and meditation training for 2 weeks was observed in the adult participants. This indicates the necessity of yoga and meditation in one’s daily life.

A study in 2010 among managers in India reported that there was significant enhancement of EI score among the managers in the yoga-practicing group compared to the control group who practiced physical exercise.\textsuperscript{40} A 2011 study which assessed emotional intelligent quotient in managers undergoing yoga-based self-management of excessive tension (SMET) program, found that 72.02\% significant increase in emotional quotient and may have implications in “executive efficiency.”\textsuperscript{41} Another study also reported that Yoga enhances the physical health, psychological health, and EI.\textsuperscript{42} EI was also found to be significantly improved among managers who practiced SMET program previously.\textsuperscript{43} Sresh et al (2014);\textsuperscript{44} concluded that a balance between the sympathetic and parasympathetic system is brought about by Yoga. The meditation brings about a sense of normal and raises alertness. This causes an increase in the emotional aspect; ultimately increasing the tolerance towards others. Bar-On underlined that EI differs from cognitive intelligence and that it undergoes change throughout one’s life. This means it can undergo improvisation through training and it correlates to the potential for success in achieving one’s aims. Such a conceptualization is strongly associated with the ability, competency, and skill to recognize, to understand, to express, to manage, to control, to change, and to help adapt personal and interpersonal emotions and feelings; using which one can understand to generate positive effects and self-motivation.\textsuperscript{45} Hence Yoga can serve definitely to conceptualize this into reality as shown in our study results. Three gunas- sattva (quality of effulgence, balance), rajas (quality of transformation/movement/dynamism) and tamas (quality of maintaining status quo/staticity/passivity), are the essential principles which are the constituents of nature and are instrumental in differentiation. The main intention of Yoga is to get a control over the Tamas Guna; which increases the negative personality traits in an individual. None of the Indian studies have been reported of the effects of Yoga intervention for over a year; as the present study. Also Yoga is a compulsion in the academic curriculum of the BNYS graduate program; hence its justification for improved performance and personality development overall is emphasized in terms of EI.

This is the first study to report and justify empirically the use of this intervention as a daily routine practice among the BNYS graduates; and not just to ensure their expertise over the different Yogic techniques for clinical practice. The main strength of the study is that; all the students in the state of Tamil Nadu with BNYS course were involved in the study. There were no drop outs. Also the study was done for an entire year; unlike other cases; where the Yoga intervention was only for a few day’s time. So the time duration is also an added advantage. Even if the student does Yoga as a compulsion; the negative traits are decreased as seen in the study. So an obligation of Yoga intervention (with or without interest) is nevertheless successful. The present study had all those students who were freshly inducted into the course; so the negative traits may not have been explicit enough; in these young candidates; as it would have been the cases in other older experienced individuals. This could be a reason for the lack of any significant statistical difference post the intervention. A further long term intervention and comparison with control group perhaps would underline the necessity of Yoga practice on daily
basis. The only limitation of the study was that we had not recorded the students’ performance in the examination; at regular intervals and any change in the student’s behavior pattern which could have altered after Yoga sessions. This data is a baseline to support the practice of Yoga as a full time intervention across professional academic courses; in order to ensure better performances; less stress and increased positive personality traits. This can be extended across all the health care specialization branches in order to strengthen the mental as well as emotional competency of the future health practitioners.

Conclusion:
The study proved that Yoga intervention is an essential tool for irreversible and positive change in the personalities of the students in health care courses. It definitely helps to reduce negative traits and strengthen the EI, overall personality and suppresses the Tamas Guna of a person. Hence early intervention can be useful on a long term basis for all young adults.

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Conflict of interest- Nil.

References

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