



Original research article (Clinical)

Effect of integrated yoga module on personality of home guards in Bengaluru: A randomized control trial



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ARTICLE INFO

Article history:

Received 28 July 2015

Received in revised form

19 November 2015

Accepted 24 November 2015

Available online 24 May 2016

Keywords:

Guna

Home guards

Rajas

Sattva

Tamas

Yoga

ABSTRACT

Background: Home Guards Organization is an independent disciplined and uniformed body of volunteers. All categories of home guards (HGs), who work in the field, experience varied emotions and are required to cope with varied situations. Yoga practices may be helpful to master such emotions and should lead to improvement in personality.

Objective: To study the efficacy of integrated yoga module (IYM) on personality (*Gunās*) (yogic personality measure) of HGs.

Methods: Of 500 HGs who attended introductory lectures, 148 HGs of either gender, who satisfied the inclusion and exclusion criteria and who consented to participate in the study were randomly allocated to two groups. The yoga group (YG) practiced an IYM for 1 h daily, 6 days a week for 8 weeks along with their routine work. The control group (CG) remained on routine work. Personality was assessed before and after 8 weeks using the self-administered Vedic Personality Inventory.

Results: Baseline scores for all domains for both groups did not differ significantly ($P > 0.05$, Shapiro Wilk's test). *Sattva* score in YG significantly increased from 39.87 ± 2.02 to 47.14 ± 7.22 , where as it decreased significantly from 43.66 ± 4.39 to 37.74 ± 10.26 in CG. *Rajas* score in YG significantly decreased from 29.15 ± 0.98 to 27.46 ± 4.38 , where as it increased significantly from 28.60 ± 3.55 to 32.74 ± 5.37 in CG. *Tamas* score in YG significantly decreased from 30.98 ± 1.04 to 25.40 ± 5.11 , where as it significantly increased from 27.74 ± 4.43 to 30.51 ± 5.50 in CG.

Conclusions: Results indicate that IYM can profitably be suggested for HGs as a cost-effective means to help them cope with stressful situations.

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1. Introduction

Security and police personnel played very important roles in controlling law and order in society and protected the country even in ancient days. Today, the Home Guards Organization (HGO) shares the above duty with security and police personnel. The HGO is an independent, disciplined, and uniformed body of personnel constituted under Karnataka Home Guards (HGs) Act, 1962, under the Karnataka Home Department. HGs' services have become indispensable during fairs, festivals, sports, elections, and for daily traffic control.

Normally, HGs work in stressful situations; hence, facing the realities of life is tough for them. All categories of field working HGs, experience varied emotions and have to cope with various tough situations in their day to day duties.

Yoga has been gaining popularity as a tool for developing both physical and mental faculties and reducing stress. People around the globe recognize yoga's efficacy as a tool to develop body and mind during the last century; people in India have been practicing yoga for several centuries to promote positive health and well-being [1].

Yoga pacifies the restless mind and offers relief to the sick [2]. It can also be used to develop physical fitness for which even common folks hanker [3]. Many use yoga for developing memory, intelligence, and creativity [4]. With its manifold benefits, yoga is becoming a part of school education [5]. Specialists use it to unfold deeper layers of consciousness to attain spiritual perfection [6]. Growing scientific evidence, demonstrates that yoga is an

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Peer review under responsibility of Transdisciplinary University, Bangalore.

important promoter of physical and mental health and a behavior-modifying practice. Several studies have demonstrated its beneficial effects on health behavior for many lifestyle-related somatic (body-related) problems such as hypertension [7], bronchial asthma [8], diabetes [9], and few psychiatric conditions such as anxiety neurosis [10] and depressive illness [11].

The philosophy of yoga holds that somatic problems are manifestations of imbalance between the three *Gunas* (*Sattva*, *Rajas*, and *Tamas*) that manifest in the body-mind complex of an individual [12]. Further, the famous scriptural text, the *Bhagavad Gita* tells that *Gunas* indicate specific behavioral styles. Purity, wisdom, bliss, love of knowledge, spiritual excellence, and other noble and sublime qualities and serenity associated with *Sattva*. Egoism, activity, restlessness, and hankering after mundane things, such as wealth, power, valor, and comforts, symbolize *Rajas*. *Tamas* relates to qualities such as bias, heedlessness and inertia, perversion in taste, thought, and action [13]. Ill health occurs when *Rajas* or *Tamas* dominate *Sattva* and the individual habitually responds to them. Furthermore, after a detailed mind analysis, the *Bhagavad Gita* says that when the set of two *Gunas* dominate, the person loses mastery over the internal dialog and its speeded-up loops of sentences, which show up as upsurges of emotions and impulsive behavior. Humans in perfect health are completely free to respond to *Sattva*, *Rajas*, or *Tamas*. Hence, a tool that can grade the set three patterns of behavioral some a sures the degree of positive health [13]. The Vedic Personality Inventory (VPI) is a valid and reliable inventory that can measure the three patterns of behavior [14].

Many studies have been carried out on the role of integrated yoga module (IYM), but this study on personality and coping strategies in HGs is completely original.

2. Methods

2.1. Participants

The participants were selected from 500 fields working HGs from Bangalore rural district who attended motivational lectures given by deputed instructors. A total of 148 who volunteered to join the study were randomly divided into yoga group (YG) ($n = 75$) and control group (CG) ($n = 73$) using a random number calculators (internet), random number table was generated [15].

2.2. Inclusion criteria

(a) Men or woman, (b) normal healthy field working HGs, and (c) age between 20 and 45years.

2.3. Exclusion criteria

(a) Any ailment, (b) consuming alcohol and smoking, and (c) those already practicing yoga.

2.4. Informed consent

The Institutional Ethical Committee of S-Vyasa Yoga University approved the study proposal. Informed consent was taken from all participants before enrolling them in the study.

2.5. Study design

This was a prospective, randomized, single-blind, control study to measure and compare the personality (*Gunās*) of the HGs allotted to YG and CG. *Gruha Rakshaka Bhavan* (HG administrative office at Bengaluru, Karnataka) was the venue for yoga classes.

Both groups continued performing routine work such as maintaining law and order, managing traffic and the public in different government organizations. Both groups participated in weekly mandatory parades as per HG schedules.

In addition to normal routine work, the YG also did 1 h of IYM practices, 6 days a week for 8 weeks. Daily attendance was taken for all the participants; yoga trained experts taught yoga to YG. The CG only did their normal routine work, but its participants were given the option to join yoga classes after study completion.

2.6. Intervention

The YG HGs besides doing their normal routine work participated in IYM. The IYM was selected from the integrated set of yoga practices used in earlier studies on effects of IYM on positive health [16]. The basis of developing the integrated approach is ancient yoga texts [17] for total physical, mental, emotional, social, and spiritual levels developments [18]. Techniques include physical practices (*Kriyas* and *Asanas*), breathing practices with body movements and *Pranayama*, meditation, lectures on yoga, and stress management through notional corrections for blissful awareness under all circumstances (action in relaxation). Qualified yoga teachers taught IYM [Table 1] for 2 months, 60 min of practice daily, 6 day/week.

2.7. Masking

The invigilators coded and saved the answered questionnaires response sheets (QRS) for scoring latter. A psychologist not involved

Table 1
Details of the IYM practices.

Duration	Names
5 min	Breathing practices Hands in and out breathing Dog breathing Tiger breathing Straight legs raise breathing (alternative and both legs)
5 min	Loosening exercises Jogging Forward and backward bending Side bending Twisting Pavanamuktasana kriya
25 min	Asanas Standing Ardha chakrasana Padahasthasana Sitting Vajrasana Suptavajrasana Halasana or Mayurasana Prone posture Dhanurasana Supine postures Sarvangasana Matsyasana Ardha Sirsasana
5 min	Deep relaxation technique
10 min	Pranayama Vibhaga pranayama Nadi Suddhi pranayama Sethali, Seethkari, Sadantha Bhramari pranayama Nadhaanusandhana Kapalabhati. or Meditation Om meditation
10 min	Lectures

IYM = integrated yoga module.

in group formation or class supervision evaluated the coded QRSS. Another person blind to group membership decoded the QRSS only after noting the scores both before and after data was completed.

2.8. Assessments

The tests were administered by examiners before and after 8 weeks of IYM in a disturbance free quiet room. VPI developed by Wolf VPI in 1998 [17] assesses the Vedic concept of the three personality types or *Gunās*. It is a “psychological construct” to assess three personality patterns expounded in the *Vedas*—the ancient Indian scriptures; hence, the name VPI. It measures levels of the three *Gunās* viz., *Sattva*, *Rajas*, and *Tamas* using acceptable psychometric properties. The original 90 criteria were shortened to 56 in 1999 after a reliability and validity analysis [19]. It now contains 15 *Sattva*, 19 *Rajas*, and 22 *Tamas* (total 56) questions.

The 56 item VPI is adequate for group research and perhaps also for individual assessment. With regards to reliability, each item of the VPI contributes positively to the reliability of its subscale and also has a corrected item-total correlation with its subscale >0.50. These statistics suggest strong subscales, meaning that the elements of the subscales correlate strongly with each other [14].

The questionnaire was self-administered with a time of 30 min for answering. A 7-point Likert-type scale was chosen as a balance between convenience for the participant and researcher, and statistical power; also to minimize the chances of spurious outcomes, especially in factor analysis. *Gunā* scores were obtained by totaling scores of items' responses for each *Guna* and dividing it by the number of items for that *Guna*. For each subscale, a higher score indicated a greater predominance of that *Guna*. Minimum and maximum scores for each thus range from 1 to 7. The VPI has been used extensively during the past 15 years and is accepted as a valid and reliable tool. A variety of studies has shown it to be very effective in understanding personality.

2.9. Data extraction

The data were extracted as per the instructions in the VPI manual.

2.10. Statistical analysis

Data were analyzed using R Studio statistical software (R Foundation for Statistical Computing).

Based on a previous study [19], the effect size was calculated to be 0.8. With a power of 0.8 and alpha set to 0.05, the minimum sample size was found to be 164. This calculation was done using G power [20].

Data at baseline were assessed for normal distribution using Shapiro–Wilk's test for both the groups. The data were not normally distributed for *Sattva* ($P = 0.0001$), but it was so distributed for *Rajas* ($P = 0.0001$) and *Tamas* ($P = 0.0001$).

Independent sample *t*-test was performed to assess the significance of differences between the groups and paired samples *t*-test for within group changes.

3. Results

3.1. Demographic data

The 75 participants in YG and 73 participants in CG had age ranges between 20 and 50 years.

Between 20 and 30 years, 36 in YG and 41 in CG; between 30 and 40 years, 28 in YG and 20 in CG; above 40 years, 11 in YG and 12 in CG. In gender, 36 in YG were female and 31 in CG; 39 in YG were

male and 42 in CG. In marital status, 49 were married in both YG and CG; 26 in YG were unmarried, and 24 in CG. Participants' educational qualifications were upto SSLC, SSLC to PUC, and graduates. Forty-nine in YG and 37 in CG are SSLC, 20 in YG and 24 in CG are PUC, and 6 in YG and 12 in CG are degree.

3.2. Mean difference after integrated yoga module

Within group difference was significant for all three *Guna* in both the groups.

When data analysis was analyzed for various subsets (as *post-hoc* multiple comparisons) with gender, marital status, educational qualification, and age all categories, it showed similar trends as observed collectively for respective *Guna* in both the groups.

4. Discussion

This is a randomized controlled prospective study of normal HGs assessing the efficacy of an IYM for 8 weeks on 148 normal adults to change their personality (*Guna*) as assessed by VPI. Results showed that there was an increase in *Sattva* level ($P < 0.001$) in YG and decrease in CG. There were significant decreases in *Rajas* and *Tamas* in YG and increases in CG. When data analysis was subdivided by gender, educational qualification, and age all categories showed similar trends as expected according to the yogic literature.

A study by Das [21] conducted using the *Mahamantra* in a three-armed, randomized prospective, control study on 62 volunteers showed that the *Mahamantra* group increased *Sattva* and decreased *Tamas* with no significant change in *Rajas* scores on the VPI questionnaire after chanting of *Mahamantra*, 20 min daily for 4 weeks. However, in addition to increase in *Sattva* and decrease in *Tamas*, the present study observed a significant decrease in *Rajas* not observed after *Mahamantra*. This difference could be because of the addition of *Asanas* and *Pranayama* to the meditation technique used in this present study as compared to the *Mahamantra*.

The behavior of a human being is an expression of a combination of different *Gunās*. *Tamas* (meaning darkness) is the grossest aspect of our personality characterized by excessive sleep, laziness, depression, procrastination, a feeling of helplessness, impulsivity, anger, and arrogance (packed up with vital energy). When we reduce *Tamas* through mastery over the mind, we become dynamic, sensitive, and sharp to move toward *Rajas* (the shining one) characterized by intense activity, ambitiousness, competitiveness, high sense of self-importance, desire for sense gratification, little interest in spiritual elevation, dissatisfaction with one's position, envy of others, and a materialistic cleverness [22]. With further growth and mastery, one moves into *Sattva* dominance which includes the qualities of truthfulness, stability, discipline, sense of control, sharp intelligence, preference for vegetarianism, truthfulness, gravity, dutifulness, detachment, respect for superiors and staunch determination, and stability in the face of adversity and also conscious action. Thus, we can see that although both *Rajas* and *Tamas* have both positive and negative qualities; they are the manifestation of a violent state of mind in which a person lacks mastery over personality or the ability to improve components of general health. The IYM increased *Sattva*. Hence, IYM which is more related to traditional practices in India and is cost effective can be recommended for its additional benefits of promoting personality development.

Another study conducted by Deshpande et al. [19] compared the effects yoga and physical exercise (PE) on *Gunās* and general health. Yoga was observed to give better effects on the *Sattva* than PE, with a larger effective size, the main difference seemed to be in the effect on *Rajo guna*. Reduction in this *Guna* was significantly higher in PE

Guna	YG_pre	YG_post	CG_pre	CG_post	Between group	
					Unpaired t	P
<i>Sattva</i>	39.87 ± 2.02	47.14 ± 7.22	43.66 ± 4.39	37.74 ± 10.26	-6.4	0.001***
<i>Rajas</i>	29.15 ± 0.98	27.46 ± 4.38	28.60 ± 3.55	32.74 ± 5.37	5.3	0.001***
<i>Tamas</i>	30.98 ± 1.04	25.40 ± 5.11	27.74 ± 4.43	30.51 ± 5.50	5.8	0.001***

YG = yoga group, CG = control group. Significant level, * $p < 0.05$ and ** $p < 0.01$ *** $p < 0.001$.

group than Y group. Thus, it was concluded that both physical activity (to reduce *Rajas* and *Tamas*) and yoga (to improve *Sattva*) may be recommended for harmonious development of personality. However, the present study observed that giving IYM decreased *Rajas* significantly in YG as compared to CG.

The yogic techniques such as breathing practices, *Asanas*, *pranayama*, meditation, and lecture have helped the HGs to increase their level of confidence, and hence it has become easy for them to overcome *Tamas* and increase *Sattva*.

The other aspect of yoga is relaxation which might have given the ability to the HGs to face the situation in the field in a relaxed state of mind and perform duty in relaxed and effectiveness way, that means relaxation in action and efficiency in outcome.

Further studies can be done with various populations such as police, military, and other security-related agencies for increasing the level of confidence with yoga intervention.

The strength of our design is IYM for HGs. The HGs work in very stressful situations during elections, when managing traffic and in other crowded places. It is essential in the present day circumstances that they can manage their personalities (*Gunās*) and cope with stressful situations. Most of them succumb to smoking and drinking to overcome their stress. Hence, training them to calm their minds is an immediate need and to enable them to increase *Sattva* and decrease *Rajas* and *Tamas*. An interesting observation was that HGs in YG who were graduates showed increase in *Rajas*, where as all others in YG showed reductions. This may possibly be because only six people were in that category, and should be further studied with a larger number of HGs.

This study demonstrates the utility of the VPI as a tool for measuring the subtle dimensions of *Gunās* described in traditional texts of yoga as a measure of steps of individual growth.

Limitation of this study: we have taken only subjective parameter such as questionnaire, objective parameter such as blood pressure and electro cardiogram would have given more information.

5. Conclusion

The results have shown that IYM has improved the personality of HGs by increasing their *Sattva Guna* and reducing their *Rajas* and *Tamas*. Further, yoga is cost-effective and recommended to HGs. Hence, this study suggests a solution to train HGs to calm their mind and help them to increase their *Sattva Guna*. By this, their service to public will improve and in turn the image of the department will also go up.

Source of support

Nil.

Conflict of interest

No.

Acknowledgments

Our grateful acknowledgments for all those who helped us in this project. We are grateful to S-VYASA for supporting this study. We thank the volunteers, teachers, and supporters who participated in this study.

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