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Educational Reform on Psycho-Physiological Effects of Yoga in Ingenious Universities

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Abstract Psychophysiological stress can impact students' intellectual responses to skills and innovativeness. It challenges mental stress among students, faculty and non-teaching employees. The surging technical/nontechnical students at Centurion University, Bhubaneswar, have augmented the potential to improve the university's intellectual and psychophysiological apathy. Various sports, cultural activities and daily exercises are regularly practised effectively. Besides these physical practices, Yoga is a well-thought-out alternative mind-body exercise that can ensure psychological health stability. The present study attempts to test the hypothesis that Yoga significantly positively impacts the psychophysiological health of students and employees in a university environment. The statistical analysis (questionnaire method) covered 507 sample survey respondents, including students, teachers and non-teaching staff, who were the population. The Hopkins Symptom Checklist (HSCL-25), a popular and widely accepted scale, was used. The hypothesis testing methodology, along with the parametric Z test, was implemented to draw inferences. The research revealed a significant positive effect of Yoga on the mental or psychological health of the respondents. Suggestions constituted that all forms of educational institutions/universities, with all fragments from students to top management, should practise flexible and readily available support for their mental or psychological health through Yoga practices. Yoga reduces psychological distress, especially among young adults in a university. Yoga positively advances physical and mental health in young groups, which can satisfy the sustainable development goal (SDG-3), i.e., good health and well-being and SDG-1 (No poverty) by optimising simple living and contentment with minimum.

Key Words HSCL-25, student mental health, stress management, universal well-being, yoga

INTRODUCTION

'Yoga' is one of the most ancient disciplines of holistic living. It has evidence that the practice of Yoga was introduced with the ages when Homosapiens settled India and hunter gathers transferred to have permanent settlement during pre-vedic ages. Yoga ensembles health, happiness and harmony. It can balance an individual's physical, psychological, mental and spiritual levels during one's life cycle. Yoga includes activities such as kriyas (detoxification), asanas (postures), pranayama (breathing techniques) and dhyana (meditation) practices that rejuvenate the state of one's consciousness. Among these, the asanas, which stand for physical postures and exercises, enhance flexibility, improve coordination among body parts and strengthen one's stamina [1-3]. Pranayama, which stands for meditation practices for deep physical/mental status of the body, diminishes anxiety and ultimately leads to an improved quality of life. Additionally, in the aggregate, Yoga reduces distress and balances heartbeat and blood pressure (BP), resulting in the resilience of an individual's improvement, mood and metabolism [4,5]. Some researchers have also validated that Yoga down-regulates the hypothalamic pituitary adrenal axis (HPA) and the sympathetic nervous system (SNS), [6-8]. Ultimately, Yoga minimises anxiety and stress and is considered a stress reduction technique (SRT) in today's world [9,10].

However, let us go deeply through the literature on ethnobotany/Unani. Little importance is given to primaeval Yoga, which is gradually becoming popular among the youths

of the present educational institutions [11,12]. Yoga can influence extant stress responses, inducing depression and anxiety, mostly among students, which can be ameliorated with the help of Yoga [13,14]. Apart from stress and anxiety, Yoga is also a gadget for controlling depression, as reported in many relevant studies. Also, experiments on emotionally distressed women proved to be managed by Yogic practices [15-14].

Yoga has a positive impact on patients who are schizophrenic, rendering antipsychotic treatment. In their study, they analysed the effects of asanas and pranayama of Yoga on schizophrenic patients. Regular Yoga practitioners in those schizophrenic patients practise seated/standing asanas, walking, jogging and relaxation, had shown improved results. The results revealed that the patients practising yoga improved significantly faster, improving their mental health, compared to those undergoing random physical exercises. In addition to mental health augmentation, Yoga proved to be effective in improving the physical health of an individual. Yogic practices are as effective as any other medical therapy in controlling blood pressure and hypertension [13,17,18].

Proper systolic and diastolic pressure and hypertension management can be regulated significantly by practising Yoga regularly [3,19-21]. They reported that Yoga can reduce cholesterol and triglyceride levels. The Yogic practices are recommended for patients with diseases related to coronary artery problems, regulating their body weight. Similar results have been found in the study conducted by other practitioners, in which they found that Yoga significantly improves the required body weight and density level. Hence, Yoga can be recommended, especially for managing obesity, which is one of the primary reasons for hypertension and heart disease [22].

Raub [23] discovered in his study that cardiovascular endurance improves with the implementation of Yoga training among people. Moreover, according to Innes *et al.* [24], Yoga shows significantly better results in cardiopulmonary endurance than other physical fitness exercises. Roland *et al.* [25] Based on his results, they found a promising finding in this study that Yoga has a high degree of favourable effect on body flexibility, balance, weight loss, body strength and body stamina. Hence, Yoga can be considered a better alternative for managing patients suffering from various diseases, including heart disease, cancer and diabetes. A study showed that Yoga is extremely helpful in managing insomnia, stress and fatigue among patients suffering from acute diseases. Lin *et al.* [26] and Bower *et al.* [27] also proved in a study that Yoga helps manage the psychological health of cancer patients. Ajasir *et al.* [28], in their studies, have brought into the picture that Yoga can be taken into account as a tool to control the blood sugar level in human beings.

From the review of extant literature, it is perceived that the Yoga was introduced in Gurukulas, other than the practices of acrobat for self-defence. It is also apparent that the Yogic practices in Gurukulas Ashrams. The young children were inculcating a peaceful and spiritual environment along with regular traditional value-based life. Yoga has a favourable effect on the mental health of people practising it in general and it can be unquestionably considered as a psychological treatment for those who are suffering from stress and anxiety. In the field of higher education, especially in a university setup, since it is the responsibility of the authority to offer alternatives to keep the mental health of the stakeholders, including students and teachers, in check, there are many activities, including sports, cultural activities, outings, etc., are offered. In this context, Yoga can be a better option than sports, cultural activities, or outings for the students and other people in a university set-up. In some universities, ensuring nutrition, health and wellness is a part of their corporate social responsibility. It improves their brand image and is well-studied by researchers [29-31].

Till now, in almost every study, we have found a comparison between a control group and an intervention group. However, we could not get any before-after analysis in a university setup. Hence, to fill these research gaps, the present study attempts to adopt a before-and-after comparative analysis of pre and post-assessment of societal values on Yogic practices.

Yoga education can benefit students and university working groups in terms of physical, mental and emotional health. Yoga practices can cultivate stress resilience, self-discipline and social development to develop life skills, social bonding and academic performance. A few decades back, Yoga was practised in ashrams and old conventional schools. Literature needs to be reported about Yoga as a curriculum in universities and educational institutions.

Objectives

Introducing yoga into the university curriculum can help develop a high degree of good health and self-consciousness. mental hygiene, spiritual integrity and productive life. In an university atmosphere when the students are adult, it is thought to practise Yogic habits rather than getting questions and answers. The questionnaire attended by the participants were used for the present study by using HSCL-25 to investigates as follows:

- The impact of university Yoga practices on academic, social, or physical health.
- Assessing results on Yoga practices in swelling attention in studies, working atmosphere in coordination with sports and gymnastics.

MATERIALS AND METHODS

The overall objective of the present study is to gauge the effects of Yoga on its practitioners on a before and after basis. In other words, the present study attempts to map the impact

on the respondents before and after practising Yoga as busy hectic life in rigorous study; perturbed their mental state and transferm to mental wellbeing to lead a stress free life. Before proceeding to Yoga practices among the university goers, the different erratic variables like diet, sleep, or prior Yoga experience should become mandatory for the students to maintain proper mental and physical health.

The Hopkins Symptom Checklist (HSCL) taken as an indegeneous inventory that deals with psychological distress. The clinical screening, research alongwith epidemiological studies are done by this software that measures Anxiety, Depression, sensitivity by measuring clinical change and assessing interventions to monitor mental health.

Selection and description of participants

The geographic area in which the study was conducted is Bhubaneswar, the capital city of Odisha, a state in India. Bhubaneswar is the first smart city declared by India's Government; traditionally, it has been famous as an education hub. Since we are focused on discovering whether Yoga can be fruitful as a psychological treatment for maintaining mental health stability among students and staff members in a university setup, we have chosen 'Centurion University of Technology and Management, Odisha' to conduct our study. It is a private state-declared university accredited with an A+ rating by the National Accreditation and Approval Committee (NAAC), Government of India and the university places a high amount of emphasis on the nutrition and wellness of its students and staff members. Once the geographic area is selected, the next step is to select a sampling procedure.

For this purpose, the sampling procedure adopted is 'quota sampling.' Adopting quota sampling is a non-probability sampling method and relies on a non-random selection of population units to be included in the sample. In this sense, the present study differs from other studies on random trials. To define the population, we have considered the Yoga Centre of Centurion University of Technology and Management, the only skill university in the state that strictly nurtures its students and employees with lessons including Yoga. Based on the population, the control characteristics are gender, occupation and education. The task was to identify the predetermined number sample size or proportion of units to be collected from the population. These are otherwise called 'quotas' in quota sampling. Hence, we have adopted a proportional quota sampling in the present study. Here, we have divided the population into strata, which are mutually exclusive subgroups and these are based on control characteristics like gender, occupation and age. Then, we recruited sample units till we reached the quota. The advantage of employing this procedure is that it replicates the accurate composition of the population we identified, which may not have been possible by implementing random control trials.

Data collection and measurements

Implementation of quota sampling has helped us obtain a sample that is as representative as possible of the identified population. About 507 respondents have agreed to be a part of our study and this sample size is almost twenty times higher than the number of parameters used by us in the research instrument in the form of a quantitative structured questionnaire. The following table describes the demographic profile of the sample (Table 1).

As discussed earlier, the present study is based on a before and after analysis, so we have taken only the starters of Yoga from the population. We have used the Hopkins Symptom Checklist (HSCL-25) to measure the before and after effects of practising Yoga (Strand and Anderson). The HSCL-25 is a well-known and well-accepted research instrument that consists of 25 items that represent 25 different parameters for measuring the effects of activities, including Yoga [30-32]. It includes parameters like anxiety, depression, rapid heartbeat, shivering, suicidal thoughts and feelings of hopefulness. Since there are 25 items in the questionnaire, which represents 25 different parameters as a rule of thumb, we were required to take a sample that is at least ten times more than it. We have achieved a sample size that is more than twenty times more than it, which is why we can say that we have maintained the sample adequacy [33-36].

Further, since researchers in similar studies already use the scales and are well accepted, the reliability score is bound to be more than the acceptable level. However, we have conducted a reliability analysis and found the reliability coefficient in the form of Cronbach's Alpha to be equal to 0.91, which is more than the lenient cut-off. The 25 items or questions in the HSCL-25 instrument are rated on a 1 to 4 scale where one stands for 'not at all' while four stands for 'very much' and is in a Likert scale. Hence, the mean score of the 25 items or questions in the HSCL-25 must vary between 1 and 4, where a higher score indicates more psychological distress.

Statistics

Since we have collected a significantly large sample in an aggregate as well as at the sub-group level, the sample size is to be significant; as per the central limit theorem, assuming a normal distribution assumed and in consultation with some statistical experts it has been decided to conduct parametric

Table 1: Demographic profile of the samples by grouping gender, occupation and education

Control characteristics/sub groups	Count	Percentage
Gender		
Male	262	52
Female	245	48
Occupation		
Students	457	90
Working	50	10
Education		
Matric/+2	83	16
Graduate	324	64
PG	93	18
MPhil/Ph.D	7	2

Source: Primary data, (n = 507)

Z-test to achieve the research objectives. A two-sample Z-test for proportions tests a hypothesis that uses a standard normal distribution and identifies whether the proportions in two large samples are equal or significantly different. Here, the null hypothesis is that the proportions of the two samples are equal. In contrast, the alternative hypothesis is that the proportions in the two samples are significantly different. We have considered the top box scores for comparison. The top box score represents the responses with the numerica1. The formulae for Z-test is given as:

$$Z-\text{score}=\frac{\bar{x}-\mu}{\sigma}$$

Where:

$\bar{x}$: Mean of the sample
μ : Mean of the population
σ : Standard deviation of population

RESULTS

The following table gives an impression of the overall survey result conducted among 507 respondents selected for the study. In this table, 'before' stands for the responses before practising Yoga, while 'after' stands for the responses after practising Yoga. As discussed, the responses have been captured on a' 1' to '4' standard scale as prescribed in the HSCL-25 set of items or parameters.

The result in Table 2 indicates that in each of the items or parameters, the proportion of respondents who practised yoga before and after practising it changed. However, if we consider the top box that includes responses with the numeric value '1', which stands for 'not at all', then there is a significant change. The null hypothesis is that the proportions before and after are not significantly different, while the alternative hypothesis is that there is a significant difference in proportions before and after practising Yoga. The hypotheses have been tested here, assuming a Z distribution. So, as per the hypotheses tested for significance based on all 25 parameters, people have witnessed a significant change after practising Yoga. Hence, we can conclude here that Yoga is capable of impacting significantly people who are scared for no reason, fearful, faint, nervous, have heart racing, trembling, tense, have headaches, panic, restless, feeling low in energy, blaming themselves, crying easily, losing sexual interest, feeling lonely, feeling hopeless, feeling blue, thinking on ending one's life, feeling trapped, worrying too much, feeling no interest, feeling that everything is an effort, having worthless feeling, having poor appetite and having sleep disturbances. From this analysis, the objective of the present study to gauge the effects of Yoga on its practitioners on a before and after basis has been satisfied and it has been found that Yoga has a significant favourable impact on the practitioners on their mental or psychological health.

The mental or psychological health of whether it be students or working professionals, male or female and people with any education level is a public health issue throughout the world. This issue needs immediate intervention, which should be practical and scalable. The results of the present study show that Yoga is an attractive option for people from any occupational background, gender and educational qualifications to significantly upgrade their mental or psychological health. It should be considered by institutions, organisations and the Government as an effective and scalable alternative.

The Yoga practices among universities students showed minimal change due to controlled life style, eternal longevity for possessiveness of fragile happiness as the bodily enjoyment is not the ultimate.

Table 2: Key Findings of the observations before and after Yogic practices

	Before				After			
Items	1	2	3	4	1	2	3	4
Being scared for no reason	0%	56%	35%	8%	56%*	35%	7%	1%
Feeling fearful	0%	55%	9%	36%	55%*	36%	6%	3%
Faintness	0%	57%	32%	10%	57%*	32%	8%	3%
Nervousness	0%	43%	44%	13%	43%*	44%	9%	4%
Heart racing	0%	50%	37%	13%	50%*	37%	8%	5%
Trembling	0%	62%	30%	8%	61%*	30%	6%	3%
Feeling tense	0%	37%	43%	19%	37%*	43%	13%	7%
Headache	0%	36%	45%	19%	36%*	45%	13%	6%
Feeling panic	0%	60%	28%	12%	60%*	28%	8%	4%
Feeling restless	0%	42%	41%	17%	41%*	41%	10%	7%
Feeling low in energy	0%	38%	47%	16%	38%*	47%	10%	6%
Blaming oneself	0%	61%	28%	11%	60%*	28%	7%	4%
Crying easily	0%	55%	34%	10%	55%*	34%	4%	7%
Losing sexual interest	0%	71%	20%	9%	70%*	20%	6%	4%
Feeling lonely	0%	52%	33%	15%	52%*	33%	8%	7%
Feeling hopeless	0%	58%	30%	12%	57%*	30%	6%	6%
Feeling blue	0%	66%	26%	8%	66%*	26%	5%	3%
Thinking on ending one's life	0%	72%	22%	6%	71%*	22%	3%	3%
Feeling trapped	0%	63%	29%	8%	63%*	29%	6%	2%
Worrying too much	0%	36%	50%	14%	35%*	50%	9%	5%
Feeling no interest	0%	50%	38%	12%	50%*	38%	7%	5%
Feeling that everything is an effort	0%	40%	42%	18%	40%*	42%	11%	8%
Worthless feeling	0%	57%	32%	11%	57%*	32%	8%	3%
Poor appetite	0%	55%	34%	12%	54%*	34%	9%	3%
Sleep disturbances	0%	44%	38%	18%	44%*	38%	9%	9%

Primary Data, (n = 507), Note: '1': 'Not at all', '2': 'A little', '3': 'Quite a bit', '4': 'Extremely' and '*': Hypothesis testified at 0.05 level of significance

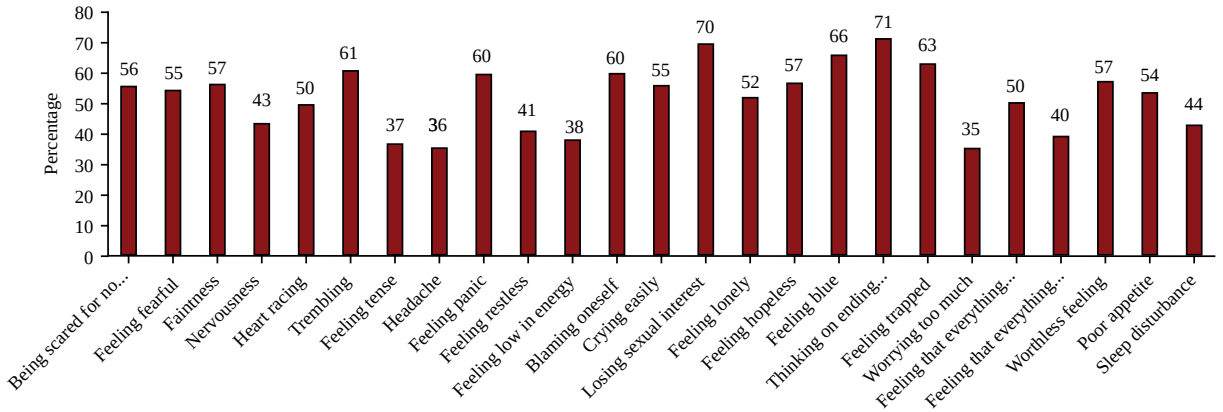

Figure 1: The percentage of the sample test improved after practising Yoga in the university

DISCUSSION

The present study investigates whether practising Yoga affects people's mental or psychological health. The pre and post-analysis approach was conducted by comparing the respondents' feedback before and after practising Yoga to satisfy this objective,. The parameters chosen to gauge the mental or psychological health of the respondents have been taken from the Hopkins Symptom Checklist (HSCL-25), one of the best research instruments in the form of a questionnaire used throughout the world in similar studies. The results of the study show that there is a significant favourable effect of Yoga on the mental or psychological health of the respondents and that is why Suggesion for all groups of people from the university who are really in need of flexible and readily available support for their mental or psychological health can opt for Yoga as an appealing and attractive alternative. It has been found from the study that Yoga reduces psychological distress by affecting favourably on various components of psychological problems.

A questionnaire was prepared for a study of a sample size of 507 respondents who had undergone Yoga practices daily for one hour and five days a week for 90 days. The physical/mental status of the practitioner's pre-practice and post-Yoga periods at the end of these ninety days were taken in the research period. The feedback from the practitioners was recorded. Surprisingly, each one of them reported improvements in scores on depression. by 50%, anxiety by 30% and overall well-being by 65%. Yoga positively influenced, especially, the perceived depression, stress, energy, anxiety, fatigue and overall well-being. Additionally, complaints of poor sleep quality, headaches and back pains considerably declined after Yoga was adopted as a treatment [37-39].

Yoga practices are pertinent to Sustainable Development Goals (SDGs-3) that emphasise Good Health and Well-being. Results show that Yoga can improve physical health, remove/ameliorate mental distress and improve general well-being. The World Health Organization (WHO) supports research on Yoga and its paybacks to achieve Universal Health Coverage (UHC) (Figure 1).

Yoga adds to balance and vitality by emphasising energy conservation of the body's energy flow, mainly among the fickle-minded younger group. Sustainable living adds to energy conservation and the use of renewable resources [40]. Yoga encourages a sustainable/straightforward lifestyle that cultivates better synchronisation between people and other living beings. Yoga promotes simplicity, serenity and self-sufficiency. Joge can promote simplicity, self-sufficiency and contentment (SDG-1: no poverty), SDG-4 and SDG-17 [37]. The students practising yoga satisfy themselves with minimum needs. The student wants are minimum. So, students will develop physical health and mental stability, reducing their unlimited desire for modern amenities. That shall help alleviate poverty among mentally stable students [41].

In Present Scenario, the students of universities in India are loaded with task, study curriculum, computer-oriented subjects and submission of assignments of various skill courses which shallows their lion’s share of daily routine, encroaching personal time even.

Gradually they become lethargic due to full of stressed and anxiety. They are under-stress and the whole university lacking general public health which is disheartening and back dragging the entire educational systems.

CONCLUSION

The results of the present study indicate that Yoga can be an effective intervention in alleviating mental distress in students and staff members at a university biome. The limitation of the present study is that it has yet to consider the effect of the demographic characteristics of respondents on the overall impact of Yoga, which needs redressal in future research. It has been observed that the psychological stability and paralally the lifestyle of the students gradually changed with maintaining austerities. The present restlessness mind shall be stabilized through practicing of Yoga. To reform the students current lifestyle, there is huge pot-wholes in the road of Yogic practices that demands inclusion of Yoga as a curriculum at every University level.

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Conflict of Interests

The authors declare zero conflicts of interest concerning this article's research, authorship and publication.

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