



Belief of Indian population on traditional yoga system during COVID-19 crisis

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Received 20 August 2020 ; revised 17 September 2020

Today, the world is suffering with various psychological diseases due to the ongoing COVID-19 pandemic. According to Arogya Setu statistic still date, the overall death caused by COVID pandemic is approx. 5.9 lakhs with approximately 2.01 Crore affected people globally¹. In the meantime, we the Yoga therapists are also gathering knowledge about this virus. Though we are neither medical professionals nor we have much understanding about the viruses, but still we have an idea that none of the bacteria, virus or fungus can affect a person with higher immunity. On the other hands, due to the uncertainty created by the COVID-19 pandemic, the world is suffering with stress and anxiety. Therefore, in order to know the perception of common population of Gautam Buddha Nagar towards the Yogic practices, we had conducted a study during this pandemic in which total 350 participants of both genders (165 professionals and 185 students) took part and collected the data regarding their perception about Yogic Practices. Under the umbrella of evidences, it can be stated that younger people have more belief and interest in Yogic Practices than elderly people. The result has a significant difference at 0.05 level of confidence. Thus, the hypothesis is accepted that Yoga has a potential to buffer the overall management of health and immunity.

Keywords: COVID-19 Crisis, Immunity, Stress, Yoga

IPC Code: Int. Cl.²⁰: A63B 26/00, G16H 20/70

In the modern society everybody is facing a lot of stress, tension, physical as well as mental fatigue, pressure etc. due to uncertainty in life, work load, lack of coordination, different views among family members and society. Throughout life everyone encounters both good and bad changes that produce stress. It differs from person to person in what they perceive as stressful and how they cope with stress producing situations. It is important for each person to find ways to manage stress effectively, because constant stress or overseers may lead to disease or illness^{2,3}. The body does not differentiate between physiological and psychological stress. Instead, the immediate response of the body to any stress is generalized that prepares the body to fight or fly from potentially threatening situations. Stress may be due to a variety of reasons⁴⁻⁸.

What is Stress?

Stress is the natural ability of an internal experience which creates a psychological and physiological imbalance in an individual. The ability differs from one

individual to another. Every individual features a threshold of stress up to which, they will bear stress and deal with the stress of their external environment. This type of personality, individual temperament and emotional stability determine the stress threshold. When external stress exceeds the edge of the individual, then they succumb to over stress. In such a scenario, the body and mind of that person attempt to reduce, avoid or withdraw from that stress-creating situation. However, if the excessive stress persists and/or increases, the body and mind suffer. This in turn leads to physical maladies and mental pathologies. Insomnia, asthma, coronary troubles, hypertension, cancer, sexual inadequacies, diabetes, mental breakdown, neurotic behavior etc. are numerous disorders that result from excessive stress.

White blood cells are the main type of immune cells. There are two types of white blood cells – lymphocytes and phagocytes. When we're stressed, the immune system's ability to repel antigens is reduced. That is why we are more susceptible to infections.

The stress hormone corticosteroid can suppress the effectiveness of the immune system (e.g. lowers the number of lymphocytes; Figure 1^(ref. 9)). Stress can also

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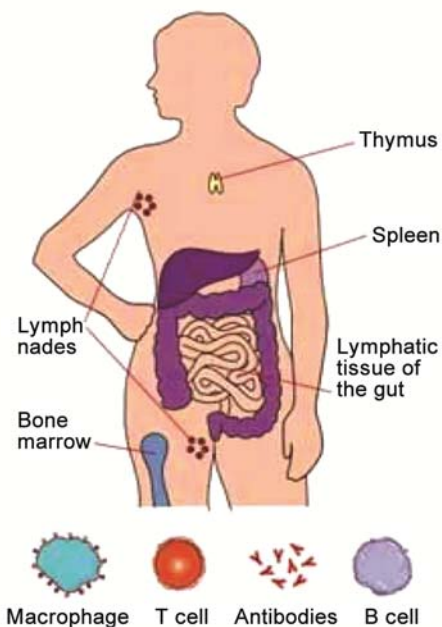


Fig. 1 — Stress affects our Immune systems

have an indirect effect on the immune system as a person may use unhealthy behavioral coping strategies to reduce their stress, such as drinking and smoking.

Good and painful stress

Stress may be good or painful. Good stress is the pressure or emotional condition that inspires one, motivates one to be active, to maintain a positive attitude, to work hard, and to benefit from happy relationship and successes. Painful stress is that emotional condition when one has to deal with unsettling, frustrating, or harmful situations. It is a disturbing sense of helplessness, perhaps a sense of futility that one feels when there are number of problems to solve. It is quite uncomfortable.

Causes, symptoms and effects of stress

Various environmental factors such as age, sex, marital status, family circumstances, childhood experiences, dietetic factors, nature and amount of daily work load etc. play an important role in the onset of stress. It leads to a series of changes in the body so as to make the person adapt himself efficiently to the changed environment. If proper adaptation leading to full recovery does not take place, then he starts getting the manifestations of psychosomatic changes one by one. At first, he/she will experience psychic changes such as irritability,

nervousness, sleeplessness etc. If the process is not recognized and checked in time, he/she experiences some additional manifestation, palpitation, increased pulse rate, rise of blood pressure etc. As these changes continue, he ultimately becomes a victim of one of the psychosomatic stress disorders, i.e., hypertension, ischemic heart disease, peptic ulcer, diabetic mellitus, ulcerative colitis, bronchial asthma, thyrotoxicosis, migraine, rheumatoid arthritis etc. Stress affects emotions and people indulge in destructive behavior—mood swings, erratic behavior, isolate colleagues/friends and family. It decreases the confidence of persons and leads to more emotional problems, i.e., depression.

Main causes of stress

1. Social problem
2. Family problem
3. Personal problem
4. Overloaded work
5. Job insecurity
6. High expectations
7. Lack of sufficient rest/sleep
8. Excess responsibilities
9. Lack of self-control
10. Sexual abuse
11. Disabilities
12. Drug/alcohol/addiction
13. Lack of presence of mind
14. Lack of balanced diet.

Main Symptoms and effects of stress

1. High/Low blood pressure
2. Heart rate increases
3. Breathing become faster
4. Muscular tense happens
5. Perspiration increases
6. Indigestion
7. More blood sugar and fat
8. Hemorrhage mechanism flow to the muscle and brain
9. Senses are lightened, started up
10. Extra thinking or dull thinking
11. Irritability
12. Lethargic performance
13. Interrupted sleep
14. Negativity
15. Poor quality performance
16. Chronic fatigue after decreased motivation
17. Decreased creativity
18. Social withdrawal

Physiology of Stress - "Stress is an altered state of body and mind from normal homeostatic conditions that is caused due to extrinsic or intrinsic factors". This disturbance is due to an unusual burden on an organism leading to a state of tension and pressure which threatens to damage and impair the functioning capacity of the organism. Stress has both a positive and negative dimension. The positive dimension of stress brings out creativity and the best in us by goal setting and improved performance *via* the optional arousal of body and mind. On the other hand, the negative dimension of stress through exaggerated arousal of body and mind leads to, decreased performance and ill health. It is like a parabola curve, which initially leads to betterment of performance but later when stress increases, performance suffers drastically¹⁰. Stress increases O₂ consumption, blood pressure and electrical skin resistance (E.S.R.)¹¹, hypers the sympathetic nervous system, increases heartbeat, fasts brain rhythm, increases production of lactic acid and anxiety level¹².

Scientific role/impact/ effect of Yoga on stress

Yogic asanas, Pranayama, concentration and meditation practices etc., if practiced according to established methods endows of perfect health: i.e., physical, mental, moral and spiritual. Yoga not only keeps body fit but also act as both sedative and positive. Yoga has therapeutic value on digestive system, circulatory system, nervous system, metabolism and process of autoimmunization. Certain asanas balance metabolic activity of the body and secretion of endocrine glands. A few has a positive effect on the immune system and the Cardio-vascular system.

Yogic Practices helps one to establish the harmonious balance in physiological process systematically and scientifically. Every person should follow the eight progressive steps of Ashtanga Yoga i.e., Yama, Niyama, Asana, Pranayama, Pratyahara, Dharna, Dhyana and Samadhi. These techniques are ideal for the preventive, promotive, curative and the rehabilitative aspects of health^{3,13}.

Yogic mudras are psycho-physiological and neuromuscular control practices. It directly affects the working of certain changes in the endocrinal balance and thus the state of mind¹⁴.

Yogic concentration helps the individual to increase his/her meditative capacity. It purifies and calms the surging emotions, strengthens the current of thoughts, and clarifies ideas. Meditative concentration kills pains, suffering fever, *Klesha* or sorrows, desires

and miseries. It controls our mind and Senses. It helps one enjoy the wave of bliss and peace¹⁵.

Material and Methods

The study was conducted post Lockdown to analyze the beliefs of Indian people in the ancient Yoga system. In order to analyze, we had created a brief questionnaire having unidirectional (positive) question related to the Yoga System having two option either YES or NO. For every YES, we gave 1 mark and 0 for every NO. By doing this we found the numbers which were exactly showing the personal attitude of the participants towards traditional Yoga system. We created a team of five Yoga experts and went to five different societies situated in different locations of Gautam Buddha Nagar, UP. In order to select people, we used the random selection technique keeping inclusion and exclusion criteria in our mind. The inclusion and exclusion criteria are as follows:

1. Included people with uncertainty about their jobs and career.
2. Included people with stress and other mental issues.
3. Included those who were interested in Yoga.
4. Included those who were not infected with COVID-19
5. Included who were having Arogya-Setu app in their phone.
6. Excluded those who were taking medicine for their chronic diseases.
7. Excluded the retired persons and above age of 60 years.

The retired personals or persons above 60, who weren't suffering from any chronic illness could have joined the Yoga Sessions, but were not included in our study.

The methodology which has been used to conduct this study is "Single-blind randomized controlled

Brief schedule of Yogic practices

Recitation of Aum	11 Rounds	05 mins
Yogic Shatkarma	02 Rounds	10 mins
Joint loosening practices (warming up exercises)	03 Rounds	05 mins
10 selected Asana (2 standing pose, 2 sitting pose, 2 supine Pose, 2 prone pose & 2 balancing poses)	02 Rounds	15 mins
Yogic pranayama Any three	02 Rounds	10 mins
Meditation any one	01 Rounds	05 mins
Yoga Nidra/ Shavasana	01 Rounds	05 mins
Shanti path	01 Rounds	02 mins
	Total	57 Mins.

Research Trial". A total of 400 subjects (Males and females) were chosen by the team, out of which 165 professionals (137 Male and 28 Females) and 185 students (111 from professional courses and 74 from non-Professional courses) took part and stands at last day of the sessions (From 15th June to 18 July 2020). The questionnaire was filled by 350 participants and the collected data stored in computer system. Age of participants ranged from 22 years to 56 years including male and female working professional and student participants. The Yogic module is mentioned below and the duration for the entire practice was 48 days. The overall attendance of the participants was 97.93% which is drastically high. Based on this much attendance despite a paid Yoga session, researchers concluded the attitude of participants towards Yogic practices.

Results

This study showed significant attendance at 95% level of confidence, which signifies that the Professional people, residing in Gautam Buddha Nagar City (UP) had a more favorable attitude towards Yoga after feeling enthusiastic in their day to day life with a 57 minutes session (Table 1). The sessions were conducted early in the morning from 6:30 to 7:30 A.M. on a regular basis excluding Sundays in a small group with social distancing and security measures.

Students in the Gautam Buddha Nagar (UP) were sincere towards Yoga and had much favorable mindsets towards it. The statistical calculation showed that the students had a significantly different attitude than the professionals towards the Yogic practices (Table 2). The professionals showed their attitude

Table 1 — Attendance of participants in Yoga sessions

One-Sample Statistics						
	N	Mean	Std. Deviation	Std. Error Mean		
Attendance Male Professionals	137	47.0073	1.26314	.10792		
Attendance Female Professionals	28	46.8571	1.20844	.22837		
Attendance Male Students	111	46.9730	1.36488	.12955		
Attendance Female Students	74	47.2297	1.17680	.13680		
One-Sample Test						
Test Value = 46						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Attendance Male Professionals	9.334	136	.000	1.00730	.7939	1.2207
Attendance Female Professionals	3.753	27	.001	.85714	.3886	1.3257
Attendance Male Students	7.510	110	.000	.97297	.7162	1.2297
Attendance Female Students	8.989	73	.000	1.22973	.9571	1.5024

Table 2 — Attitude of participants towards Yoga practices

One-Sample Statistics						
	N	Mean	Std. Deviation	Std. Error Mean		
Attitude Male Professional	137	8.2847	1.34465	.11488		
Attitude Female Professionals	28	8.7500	1.37773	.26037		
Attitude Male Students	111	8.6757	1.23702	.11741		
Attitude Female Students	74	8.7973	1.27117	.14777		
One-Sample Test						
Test Value = 9						
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Attitude Male Professional	2.478	136	.014	.28467	.0575	.5119
Attitude Female Professionals	2.881	27	.008	.75000	.2158	1.2842
Attitude Male Students	5.755	110	.000	.67568	.4430	.9084
Attitude Female Students	5.395	73	.000	.79730	.5028	1.0918

Table 3 — Comparative study of Attendance of the participants

		Group Statistics								
		VAR00014	N	Mean	Std. Deviation	Std. Error Mean				
Attitude of Professionals and students		1.00	165	8.3636	1.35741	.10567				
		2.00	185	8.7243	1.24878	.09181				
Attendance of Professionals and students		1.00	165	46.9818	1.25170	.09744				
		2.00	185	47.0757	1.29577	.09527				
		Independent Samples Test								
		Levene's Test for Equality of Variances			t-test for Equality of Means					
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Attitude of Professionals and students	Equal variances assumed	1.002	.317	-2.589	348	.010	-.36069	.13932	-.63471	-.08667
	Equal variances not assumed			-2.577	334.93	.010	-.36069	.13999	-.63605	-.08532
Attendance of Professionals and students	Equal variances assumed	.287	.593	-.687	348	.492	-.09386	.13655	-.36242	.17470
	Equal variances not assumed			-.689	345.77	.491	-.09386	.13628	-.36189	.17418

towards yoga was significant at 0.01 level of confidence but student's attitude was higher than the professionals. Therefore, it can be stated that younger people have more belief in yoga than elderly people.

In this comparative chart for altitude and attendance between professionals and student group of independent sample t-test, Levene's Test for Equality of Variances, it can be clearly observed that the $F = 1.002$ between the attitude of professionals and students, and P-value 0.317, which is statistically not significant (Table 3). On the other hand, the $F = 0.287$ for the attendance of participants and P value 0.593 which is again statically not significant but it is too low which indicates that the difference is very close to the 0.05 level of confidence. Thus, we can conclude that both the groups have almost equivalent mindset and enthusiasm towards the practice of Yoga as well as the belief on the traditional Yoga System during the COVID-19 pandemic.

Due to the tremendous increase in stress in people's lives in urban areas there is an increasing inclination of people towards Yoga. It is really encouraging to see the increasing interest of students towards Yoga. Most of the people of Gautam Buddha Nagar city (about 72%) who practice Yoga have an interest to keep fit only through Yoga and about 20% of people do yogic Practices to cure certain diseases, e.g. blood pressure, diabetes as well as to alleviate natural immunity of an individual etc.

Conclusion

It can therefore, be stated that younger peoples have more belief and shown their interest in Yogic Practices than elderly people. Perhaps both the groups took part and get benefited with overall health (physical and mental both). The result has a significant difference at .05 level of confidence. Thus, the hypothesis is accepted that Yoga has a potential to buffer the overall management of health and immunity in adults and elderly people.

Acknowledgment

The entire project was self-financed to evaluate the attitude of the Indian population towards Yogic Practices during this global Pandemic of COVID-19. I would like to thank all the participants and the team who gave us support to evaluate the entire study.

Conflict of Interest

Authors declared that he has no conflict of interest.

Authors Contribution Statement

The design of intervention, data collection and data analysis was done by SV. Background and discussion of the study was done by KM, and review of literature and reference writing was done by RM.

References

- 1 World statistics through Arogya Setu App, Issued by Ministry of health and family welfare, Government of India as of 1st Aug.2020

- 2 Selye H, *The stress of life*. New York: McGraw-Hill, (1956) 57-9.
- 3 Barid J P & Sancheti S S, *Yoga: a boon for Health*, world Health Forum 15, 1994 61-62.
- 4 Benson H, *The relaxation response*, New York: Morrow, 1975 27-8.
- 5 Jenkins C D, Rosenman R H & Zyzanski S J, Prediction of clinical coronary heart disease by a test for the coronary-prone behavior pattern, *New Eng J Med*, 290, (1974) 1271-5.
- 6 Curtis J D, Detert R A, Schindler J, *et al.*, *Teaching stress management and relaxation skill: instructor's guide*. LaCrosse, WI: Coulee Press, 1985 87-88.
- 7 Verma J P, A study of stress assessment and its behavior, *Research Biannual for Movement*, 22 (1) 2005.
- 8 Kumari C, Kumar S & Gauraha M, *Impact of Yoga on stress published in psychotherapy, Yoga & spirituality*, Jagdamba Publishing Co. New Delhi, 2005, p. 247-51,
- 9 Figure: <https://in.pinterest.com/jamie2080/chapter-5-health/?autologin=true>
- 10 Bera T K, Gore M M & Oak J P, Recovery from stress in two different posture and in Shavasana - A yogic relaxation posture, *India J Physio-Pharma*, 42 (4) (1988) 473-8.
- 11 Joyner M J & Casey D P, Regulation of increased blood flow (hyperemia) to muscles during exercise: a hierarchy of competing physiological needs, *Physiol Rev* 95 (2) (2015) 549-601.
- 12 Bhavanani A B, *A yogic approach to stress*, Divyanand creations, Iyyanar Nagar, Pondicherry, 2008, p. 29.
- 13 Verma S & Kumar K, Formulation of Yoga and Ayurveda, *Int J Sci Con*, 4 (3) (2018) 65-73.
- 14 Bhavanani A B, *Combating Techno Stress Through Yoga*, Proceedings in National Yoga week 2010, 210-4.
- 15 Sinha P, *Yogic cure for common diseases*, Orient paper books, New Delhi, 1994.
- 16 Verma S, Kumar K, & Meena R, Evidenced based study on general wellbeing through Yoga, *Int J Sci Con*, Vol 3 (4) (2017) 78-83,
- 17 Verma S & Kumar K, Evidence-based comparative study of group and individual consciousness on life satisfaction among adults, *Yoga Mimansa*, 52 (1) (2020) 34-7.