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Assessment on the Role of Yoga in Healing Autoimmune Diseases

Rosily J. Gnalian
Shri Venkateshwara University, Gajraula, Uttar Pradesh Uttar Pradesh, India

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Abstract; Autoimmune diseases have chronic inflammation as the most prevalent symptom, which has a detrimental impact on one's quality of life. This disease has both genetic and environmental factors contribute to the susceptibility to this condition. The release of a variety of inflammatory cytokines, cytotoxic and immune regulatory factors is responsible for the disease's severity and progression. The objective of the study is to assess the role of yoga in healing autoimmune diseases. Data collection is in accordance with autoimmune disease, the samples were able to provide responses and exchange information. Total 50 depressed, anxious and stressed participants having autoimmune disease joined. The collected data was analyzed using statistical software SPSS version 22.0. Results depicted the percentage of participants in the severe stress category was 14% at the beginning, which reduced to 0% after 12 months of yoga intervention. Stress in severe category of participants were 14% and completely reduced to 0% in 12 months; 14% moderate participants were reduced to 2% after complete yoga treatment. Yoga facilitates the management of autoimmune conditions by fostering relaxation, reducing inflammation, and fostering overall health. Gentle poses, deep breathing, restorative yoga, mindfulness meditation, and personalized therapy are all effective methods for reducing tension and bolstering the immune system.
Keywords: *Autoimmune diseases; Yoga; Training; Stress; Depressed; Anxiety; Intervention.*

INTRODUCTION

Yoga is not only the most important factor in growth, but it also directs the ideas below as restoration of injuries and psychological and also provides restoration treatment for various missions [1]. Yoga is the perfect form of one who really needs to rely on with respect to health. Here it is important to take the method of using yoga to affect physical and mental health; and social development for mankind [2].

Due to today's way of life a person is experiencing postural mutilations diagnostics, autoimmune diseases and diseases such as Obesity, Hypertension, Diabetes, Migraine, Nervousness, Backaches, Depression, Concern, Cancer, Awareness, Extermination, Diarrhea, Diarrhea Spirituality, Illness, Illness and Heartache [3]. Various postural diversity such as Cyphosis, lordosis, scoosis, knees, and so on can be found in the people involved [4]. Due to these natural complexes, however, taking a person's life-style tries to try again for more reason [5]. Many takes residence and drive the largest part of the Khyposis and that is how the cervix oral spondolitis occurs. Yogasanas like Banjanasana, Matasasasana, Chakarasana and so forth provide excellent results, but during the course of sukshamYog diseases it helps as muscles are too weak, making it difficult to endure anxieties of asanas [6]. Power, wearing high heels, extending the back weight and periodic pregnancy to fulfill Lordosis. These many people suffer from severe side effects of depression especially in the lumbar area [7]. Lordosis, Scoliosis and bombing, paying for the small personality that is present or natural, Yoga offers a great deal of the game [8]. In modern science, human muscles are suffering from decay because of the lack of strong action [9]. This results in completion, disturbances and disorders with regard to arthritis of arteries. Changing weight loss agrees to stop and other abortion-related abnormalities. The general practice about yoga is killing them until the end of time [10].

In India Yoga is practiced since ancient times and has its roots in Hindu religion. The term “yoga” comes from the Sanskrit “yuj,” referred for “yoke” or “union.” It is believed that the aim of “yoga” is uniting the mind, body, and spirit [11]. Yoga includes three components namely: asanas (postures), pranayama (breathing exercises), and dhyana (meditation). Awareness of health and fitness has significantly increased the interest in yoga in the western world [12].

Autoimmune diseases can be triggered by a variety of factors, to name a few are the infection, genetic tendency and the emotional status of the patient [2]. In the busy and stressful modern-day life, health maintenance is always at risk. The stress is found to be the root cause of all noncommunicative diseases [3]. The aim of the study is to effect of yoga on sychological changes (depression, anxiety) of people suffering from autoimmune diseases.

MATERIAL AND METHOD

All 150 participants with different health issues and altered homeostasis enrolled for all three different studies were given different types of yoga training. The changes in yoga exercises were based on earlier studies as well as based on our pilot experiments. Effect of yoga intervention on depression, anxiety, stress level is the screened participants depending on inclusion and exclusion criteria of the study.

Inclusion criteria included individuals of both sexes and between ages 35-45 years, having autoimmune disease, nonsmoker, non-athlete and non-pregnant with the willingness and capability to perform different yoga exercises throughout whole year.

Exclusion criteria included rebuttal or unwillingness to complete yoga course, simultaneous exercise, and receiving medication for mental disorders, hypertension, diabetes mellitus, high cholesterol, respiratory problems, cardiovascular diseases and active nicotine abuse.

Yoga training: All participants (50) having autoimmune disease were subjected to yoga practices (Pranayama, yoga postures and meditation) for 60 min and 6 days per week by an expert yoga teacher for the various intervals (3, 6, 9, and 12 months) of 1 year. All participants were taught 10 min pranayama, 15 min meditation, 10 min flexibility, 15 min yoga postures and 10 min sun salutation with relaxation. Detailed yoga intervention module is explained.

Total 50 participants having autoimmune disease were included in the present study who were depressed, anxious and stressed. Duly filled questionnaire of DASS-42 was collected from every participant at the intervals of 0, 3, 6, 9 and 12 months.

With both the individuals, a good rapport had already been established before the survey. The participants were made aware of the real study goals, and both a verbal and nonverbal ethical approval was acquired from them. The investigator made continuous efforts to collect reliable and correct information from the samples.

The collected data was analysed using statistical software SPSS version 22.0. Data are represented as mean ± standard error mean. Statistical analysis was done using ANOVA followed by Turkey's test and student's t-test for paired samples. P values less than 0.05 accepted as a statistically significant difference.

RESULT AND DISCUSSION

Total 150 participants having autoimmune disease were registered for study. The mean age of participants was 40.4 year. In study both the number of male and female participants were equal i.e. 50% in each. The maximum numbers of participants were married (78%), whereas unmarried were 22%. participants who registered for yoga were 76%, whereas participants were 24%. In education, 34% participants were graduate and majority (66%) were postgraduate. The detailed demographic characteristics are shown in Table 1.

Table 1. Demographic data

Variables		Participants (150)	Number of participants in percentage
Age	Age (years) (Mean ± SE)	40.42 ± 1.69	-
Gender	Male	75	50%
	Female	75	50%
Marital status	Married	117	78%
	Unmarried	33	22%
Employment	Employed	114	76%
	Unemployed	36	24%
Education	Graduation	51	34%
	Post-Graduation	99	66%

Effect of yoga intervention on depression, anxiety, stress and blood glucose level.

DASS scale was used to evaluate prevalence of depression, anxiety and stress at the intervals of 0, 3, 6, 9 and 12 months. Duly filled questionnaire of DASS-42 was collected from every participant. The results obtained are shown in Table 2-4.

Table 2. Showing effect of yoga intervention on depression in participants

Duration (months)	Depression (DASS score/number of participants)				
	Normal (0-9)	**Mild (10-13)**	**Moderate (14-20)**	**Severe (21-27)**	**Extremely Severe (28+)**
0	1.86 ± 0.59 (15)	11.2 ± 0.20a (5)	16.0 ± 0.04a (11)	23.9 ± 0.51a -1	37.55 ± 0.95a (18)
3	3.31 ± 0.80b (19)	10.5 ± 0.50a (2)	18.62 ± 0.41a (8)	23.57 ± 1.02a (7)	34.92 ± 0.59a, b (14)
6	2.35 ± 0.64b (20)	10.0 ± 0.40a (1)	16.07 ± 0.60a (14)	23.12 ± 0.74a (8)	33.57 ± 0.94a, b (7)
9	2.92 ± 0.65b (25)	11.71 ± 0.26a (14)	16.5 ± 1.32a (4)	22.71 ± 0.28a (7)	-
12	4.17 ± 0.53b (47)	10.50 ± 0.50a (2)	15.0 ± 0.45a (1)	-	-

Values are expressed as mean ± standard error mean, n=50

Level of Significance:

ap<0.05 as compared to normal at same time interval.
bp<0.05 as compared to 0 month in same group (ANOVA followed by Turkey's test) Values shown in parenthesis indicate number of participants.

Result shown in Table 2 clearly indicates that yoga exercises significantly reduce depression in time-dependent manner in participants. This might be due to overall improvement in health with biochemical as well as cardio-respiratory functions. At initial stage extremely severe 36% participants were reduced to 28% at 3 months, 14% at 6 months and none were at 9 and 12 months. Similarly in severe category number of participants were 2% initially were reduced gradually and not a single participant were present after 12 months yoga treatment. 22% moderate participants were there at 0 months, which decreased to least 2% after 12 months. Same way 10 % mild depression participants were fall down to 4% after complete treatment. After 12 months maximum 94% participants were in normal category which were initially only 30%. With yoga intervention there was significant time-dependent change from extremely severe to normal (extremely severe- severe-

moderate- mild- normal). ANOVA followed by Turkey's test showed that the level of significance ($p<0.05$) in different categories at same interval as well as differences at different intervals of 3, 6, 9 and 12 months (Fig.1).

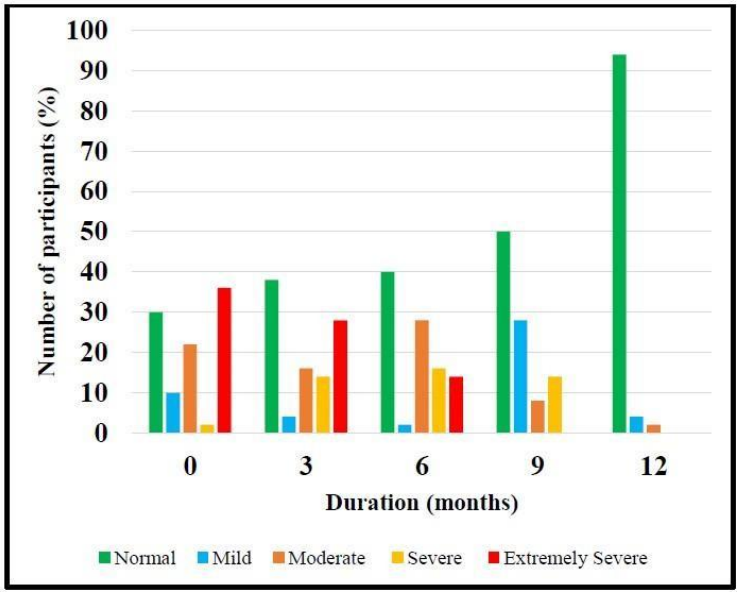

Figure 1. Showing time dependent effect of yoga on depression

Table 3. Effect of yoga intervention on anxiety in participants

Duration (months)	Anxiety (Dass Score/number of participants)				
	Normal (0-7)	**Mild (8-9)**	**Moderate (1014)**	**Severe (15-19)**	**Extremely Severe (20+)**
0	2.23 ± 0.48 (13)	8.50 ± 0.50a (2)	12.83 ± 0.74a (6)	16.50 ± 0.50a (2)	31.62 ± 1.20a (27)
3	2.31 ± 0.58 (16)	8.75 ± 0.25a (4)	10.33 ± 0.33a (3)	18.12 ± 0.39a (8)	29.84 ± 1.16a (19)
6	2.23 ± 0.58 (17)	8.50 ± 0.22a (6)	13.44 ± 0.17a (9)	18.00 ± 0.70a (4)	26.42 ± 1.67a, b (14)
9	3.32 ± 0.57b (25)	8.18 ± 0.12a (11)	11.83 ± 0.60a (6)	15.50 ± 0.50a (2)	24.33 ± 0.88a, b (6)
12	4.02 ± 0.45b (41)	8.25 ± 0.16a (8)	11.00 ± 0.35a (1)	-	-

Values are expressed as mean ± standard error mean, n=50

Level of Significance:

ap<0.05 as compared to normal at same time interval.
bp<0.05 as compared to 0 month in same group (ANOVA followed by Turkey's test). Values shown in parenthesis indicate number of participants.

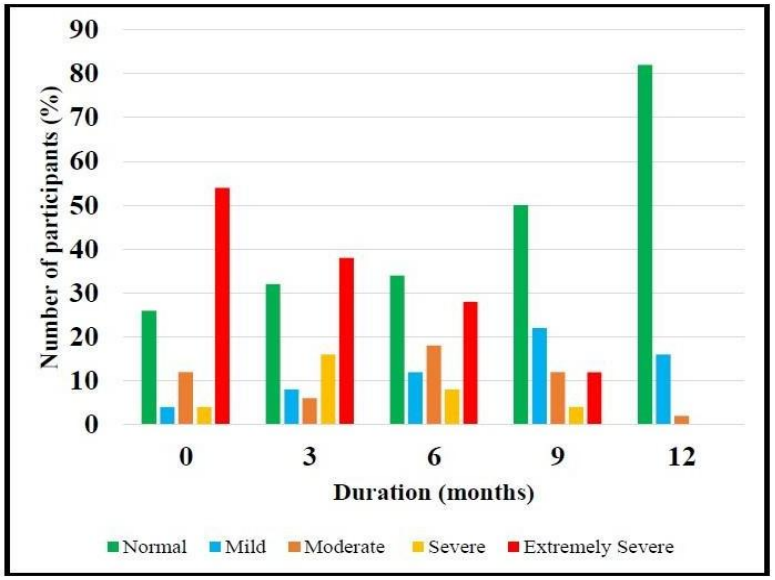

Figure 2. Showing time dependent effect of yoga on anxiety.

Table 3 shows the effect of yoga intervention on level of anxiety in participants. It was observed that at beginning (0 month) maximum among all (54%) of participants fall into extremely severe category which declined to 38% at 3 months, 28% at 6 months, 12% at 9 months and not any at 12 months. At the end of 12 months, all the participants from severe to extremely severe category became normal. ANOVA followed by Turkey's test shows that the level of significance ($p<0.05$) in different categories at same interval as well as differences at different intervals of 3, 6, 9 and 12 months (Fig.2).

Table 4. Effect of yoga intervention on stress in participants

Duration (months)		**Stress ((DASS score/number of participants)**			
Normal (0-14)		**Mild (15-18)**	**Moderate (19-25)**	**Severe (26-33)**	**Extremely Severe (34+)**
0	2.76 ± 0.82 (17)	17.00 ± 0.33a (3)	20.42 ± 0.42a (7)	29.71 ± 0.83a (7)	38.06 ± 0.61a (16)
3	2.58 ± 0.76 (17)	16.62 ± 0.49a (8)	23.16 ± 1.19a, b (6)	30.11 ± 0.73a (9)	37.1 ± 0.45a (10)
6	3.11 ± 0.91 (18)	16.10 ± 0.37a (10)	23.11 ± 0.56a, b (9)	27.25 ± 0.68a (9)	37.0 ± 0.25a (4)
9	6.78 ± 0.94b (32)	15.25 ± 0.25a (4)	22.66 ± 0.66a (9)	26.0 ± 0.20a, b (5)	-
12	5.87 ± 0.82b (41)	17.25 ± 0.31a (8)	20.00 ± 0.42a (1)	-	-

Values are expressed as mean ± standard error mean, n=50

Level of Significance:

ap<0.05 as compared to normal at same time interval.
bp<0.05 as compared to 0 month in same group (ANOVA followed by Turkey's test). Values shown in parenthesis indicate number of participants

Table 4 indicates the reduction in number of stressed participants at the end of 12 months of yoga treatment. It was observed that at beginning (0 month) all 32% of participants fall into extremely severe category were declined to 20% at 3 months, 8% at 6 months and 0% at 9 and 12 months. Lastly normal 34% participants in initial month with regular practice at 3, 6, 9 and 12 months increased to 92 % participants. With yoga intervention there is significant time-dependent change from extremely severe to normal (extremely severe- severe- moderate- mild- normal). At the end of 12 months, all the participants from severe to extremely severe category became normal. Yoga makes breathing movements smooth. By

CONCLUSION

An autoimmune disease is developed when our immune system, which is overactive, mistakenly attacks the tissues in our bodies. The number of participants having autoimmune disease in severe category was 4% which completely reduced to 0% in 12 months, followed by 12% moderate participants were reduced to 2% after complete treatment. With yoga intervention there was significant time-dependant change from extremely severe to normal (extremely severe- severe moderate- mild normal).

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