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The Effect of Yoga Therapy on Stress Management During Menopause

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Abstract: Menopause is a significant life event for women and is accompanied by physical and psychological changes. The aim is to study the effect of yoga therapy on stress management of menopausal women. In methodology, the study was conducted through the Department of Yoga therapy, Kasturba Hospital, Delhi in the year 2022-2023. 216 menopausal-symptomatic women between the ages of 40 and 60 were tested yoga treatment (n=111) and the control group (n=105) for three months. Anthropometric measures, hormonal markers, and perimenopause symptom profile were assessed in both groups after the intervention. Results stated that 37.5% women complained of vasomotor symptoms, 42.6% women psychological symptoms, 0.6% women physical symptoms, 27.9% women sexual symptoms and 42.2% women reported the other three symptoms. Three months of yoga intervention dramatically reduced all sixteen symptoms, demonstrating its high effectiveness in treating menopausal symptoms. Pains in the back of the neck or head, low back, muscles and joints were greatly decreased. In conclusion, studies suggests that yoga could serve as a main intervention for at-risk menopausal women. by promoting psychological well-being and prevention of chronic diseases.
Keywords: Yoga Therapy; Menopause; Symptoms; Women.

INTRODUCTION

Menopause is described as the natural end of your menstrual cycle, which occurs 12 months following your last menstrual period [1]. It is a crucial moment of change in a woman's life and presents a challenge for women to provide supportive counselling, critical appraisal, and assistance [2]. Ovarian ageing and the associated drop in oestrogen and progesterone are symptoms of menopause [3] Changes in the uterus, breasts, urethra, vagina, skin, bone, muscles, blood vessels, and brain occur along with this hormonal drop [4].

Among the symptoms include irregular menstruation, changes in sexual desire, hot flashes, vaginal dryness, and urinary issues, as well as changes in appearance, mood swings, sleep disturbances, palpitations, backaches, anxiety, and sadness, as well as a reduction in daily activity [5]. Menopause may start at any age between 40 and 50, although in the United States, the average age is 51 [6]. The average age of menopause in Indian women over the age of 45 is 48 years, according to study by the Indian Menopause Society [7]. Menopausal health is thus considerably more important in India since it has an impact on women's health and feeling of wellbeing [8]. Some women have one or more menopausal issues and postmenopausal symptoms [9].

At the stage of menopause, as the ovaries stop functioning the other glands, namely the thyroids there is an imbalance of hormones as it shows effect on women suffer from physiological, psychological and emotional problem such as hot flashes, headaches, joint pain, back pain, muscles pain, anxiety, depression, fear, disturbance in sleep, loss of interest in the most things, loss of feeling in hands or feet, nervousness, and sweating at night, urinary problem etc [10]. Yogic exercises such as asana, pranayama and suddhi kriya help in menopause to ease hormonal imbalance and bring stability to delicate systems managing menopausal symptoms without negative side effects [2]. The objective of this study is to incorporate Yoga as intervention on stress management for menopausal women.

LITERATURE REVIEW

According to Bhave et al. (2018) [1] menopause, oestrogen level fall and the body is less able to control cortisol levels than it used to, which makes stress more likely to occur. Yoga is a kind of mind-body exercise that combines physical movement with a conscious interior concentration on awareness of the self, the breath, and energy.

Swain et al. (2021), [11] yoga practise decreases menopausal symptoms, enhances overall quality of life, and hormonal changes in menopausal women [11]. Oates (2017) clarified the available research on yoga's potential to treat menstruation problems. His study suggesting reduced symptoms of menstrual distress following a yoga intervention [9]. According to Shanthi, (2019), studied the effects of yoga treatment on menopausal symptoms. It may be stated that the yoga intervention was successful in lowering menopausal symptoms since there was a substantial decrease in menopausal symptoms among postmenopausal women in the experimental group [10].

MATERIAL AND METHOD

In this study the term menopause to include all those women aged between 40 to 60 years having clinical symptoms of menopause, associated with regular, irregular or no menstrual cycles.

A total of 216 women experiencing menopausal symptoms satisfying the inclusion criteria of (a) aged between 40 to 60 years (b) who were willing and were able to practice yoga or exercise protocols. (c) who were having menopausal symptoms, were included in this study. Exclusion criteria were (a) women who were already practicing yoga for a month or more, (b) women with surgical menopause and receiving any kind of hormone therapy (c) women who had any active psychological disorders or any other medical disorders.

The study was conducted through the Department of Yoga therapy, Kasturba Hospital, Delhi in the year 2022-2023.

An awareness program was conducted including a lecture on important and basic aspects of perimenopause, the various physical, psychological and other health related problems which can arise during this phase of life. Then the base line assessment was done by self-administering standardized questionnaires. All the pre intervention data were collected by the investigator herself by giving proper instructions to the subject to fill the questionnaires by themselves.

Menopausal specific quality of life questionnaire [MENQOL] is a self administered ‘scaled’ survey questionnaires, designed to describe quality of life in menopausal women and which measures the extent to which an individual is affected by menopausal symptoms.

Statistical analysis of data-The collected data were analyzed using statistical soft-wares SPSS Version 15 for a level of statistical significance of 5% at $p<0.05$.

RESULT AND DISCUSSION

In Total 37.5% women complained of vasomotor symptoms, 42.6% women psychological symptoms, 0.6% women physical symptoms, 27.9% women sexual symptoms and 42.2% women reported the other three symptoms. The prevalence of symptoms related to psycological domain were most predominant (42.6%) followed by other three symptoms (42.2 %) vasomotor symptoms (37.5%) and sexual domain symptoms (27.9%). The least prevalent were thephysical domain symptoms (0.6%). The domain wise prevalence of menopausal symptoms is summarized in Table 1.

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.

Tab. 1. The summary of the prevalence of the menopausal symptoms in each domain

Domain	Value	%
Vasomotor	243	37.5
Psychological	645	42.6
Physical	1625	0.6
Sexual	181	27.9
Other three symptoms	274	42.2

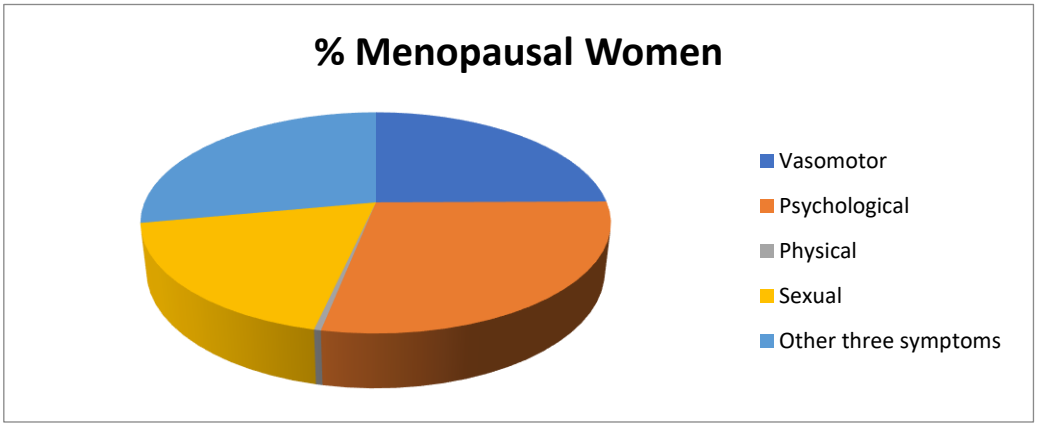

Fig. 1. The summary of the prevalence of the menopausal symptoms in each domain in pie chart form

Here after the group wise prevalence of menopausal symptoms of each domain along with their base line comparisons between the groups is shown.

Vasomotor Domain

The prevalence of vasomotor symptoms in both groups is shown in the Table 2. In this domain sweating was the most predominant disturbing symptom complained by women in both the groups followed by hot flushes and night sweats. There was no significant difference between the groups ($p>0.05$).

Tab. 2. The prevalence and base line comparison of vasomotor symptoms in both the groups

Vasomotor domain	Yoga (n=111)	%	Control (n=105)	%	P value
1. Hot flashes or flushes	43	38.7	36	34.2	0.50
2. Night sweats	29	26.1	32	30.5	1.00
3. Sweating	50	45.0	53	50.4	0.52

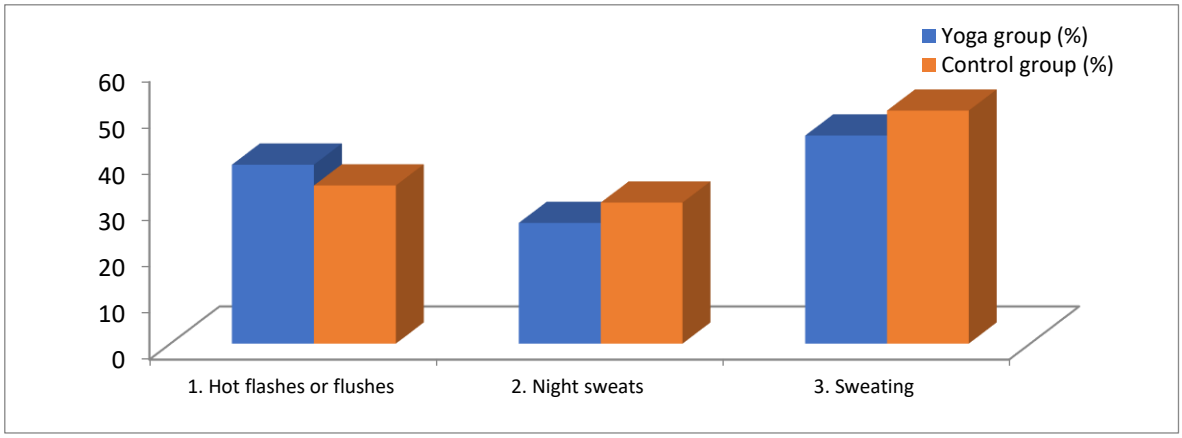

Fig. 2. The prevalence and base line comparison of vasomotor symptoms in both the groups

Psychological Domain

The prevalence of Psychological symptoms in both groups is shown in the Table 3. In this domain, large number of women from both groups (72 to 79%) complained experiencing poor memory as the most prevalent symptom followed by feeling of anxiety, loneliness, depression and impatience.

Tab. 3. The prevalence and the base line comparison of Psychological symptoms in both the groups

Psychological domain	Yoga (n=111)	%	Control (n=105)	%	P value
4. Being dissatisfied with my personal life	18	16.2	46	40.9	0.001
5. Feeling anxious or nervous	42	37.8	43	41.5	0.66
6. Experiencing poor memory	80	72.1	83	79.0	0.56
7. Accomplishing less than I used to	73	65.8	39	43.2	0.001
8. Feeling depressed down or blue	48	43.2	35	33.3	0.20
9. Being impatient with other people	35	31.5	33	31.4	0.77
10.Feeling wanting to be alone	30	27.0	40	38.1	0.26

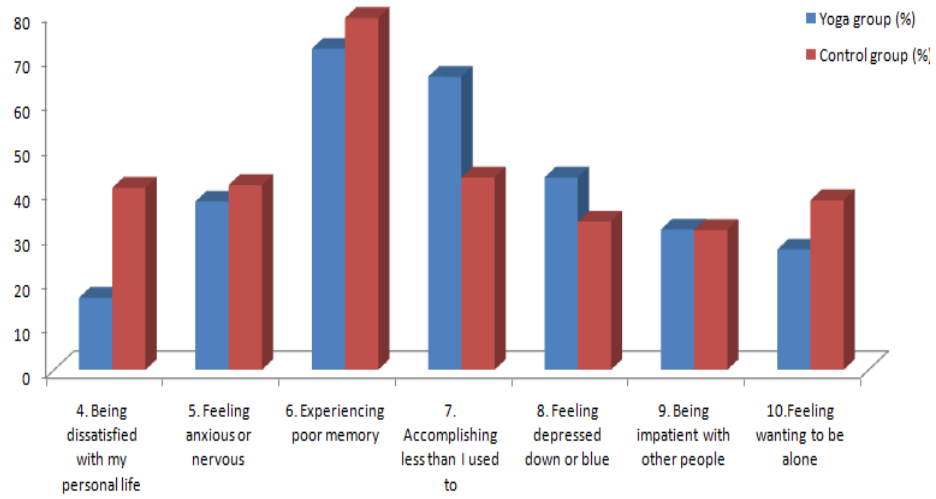

Fig. 3. The prevalence and the base line comparison of Psychological symptoms in both the groups

Physical Domain

In this domain predominant symptoms documented in both groups were feeling tired (66.7% vs. 73.3%), decrease in physical strength (62.2% vs. 71.4%), decrease in stamina (61.3% vs. 70.5%) and low back ache (55.9% vs. 52.4%). All the symptoms in the physical domain except for flatulence and muscles and joint pains were comparable in both groups without any significant difference. Flatulence (64.0% vs. 46.7%) and aching muscles and joints (72.1% vs. 45.7%) were found to be reported more significantly by the menopausal women in yoga group compared to the control group (p0.05). The prevalence of physical symptoms in both groups is shown in the Table 4.

Tab. 4. The prevalence and base line comparison of physical symptoms in both the groups.

Physical domain	Yoga (n=111)	%	Control (n=105)	%	P value
11. Flatulence (wind) or gas pain	71	64.0	49	46.7	0.001
12. Aching in muscles and joints	80	72.1	48	45.7	0.001
13. Feeling tired or worn out	74	66.7	77	73.3	0.89
14. Difficulty sleeping	55	49.5	47	44.8	0.49
15. Aches in back of neck or head	62	55.9	57	54.3	0.50
16. Decrease in physical strength	69	62.2	75	71.4	0.48
17. Decrease in stamina	68	61.3	74	70.5	0.42
18. Feeling of lack of energy	56	50.5	56	53.3	0.42
19. Drying skin	34	30.6	41	39.0	0.16
20. Weight gain	42	37.8	52	49.5	0.50
21. Increased facial hair	10	9.0	15	14.3	0.23
22. Changes in skin texture or tone	20	18.0	28	26.7	0.37
23. Feeling bloated	41	36.9	50	47.6	0.58
24. Low back ache	62	55.9	55	52.4	0.50
25. Frequent urination	30	27.0	36	34.3	0.48
26. Involuntary urination	39	44.1	42	40.0	0.35

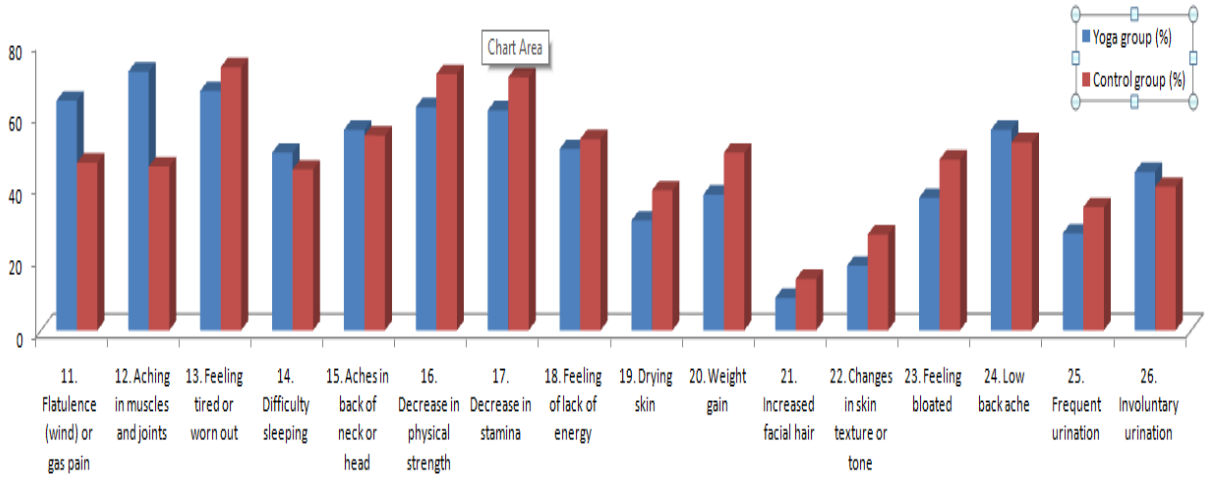

Fig. 4. The prevalence and base line comparison of physical symptoms in both the groups.

Sexual Domain

Response to the sexual domain were found to be least reported compared to the other domains. Only 33.3% women from yoga and 26.7% women from control group complained of changes in sexual desire followed by avoiding intimacy and complaint of vaginal dryness. There was no significant difference between the two groups ($p>0.05$). The result is summarized in the Table 5.

Tab. 5. The prevalence and base line comparison of sexual symptoms in both the group

Sexual Domain	Yoga (n=111)	%	Control (n=105)	%	P value
27. Changes in sexual desire	37	33.3	28	26.7	0.16
28. Vaginal dryness	27	24.3	29	27.6	0.55
29. Avoiding intimacy	33	29.7	30	28.6	0.60

Tab. 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.

Tab. 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).

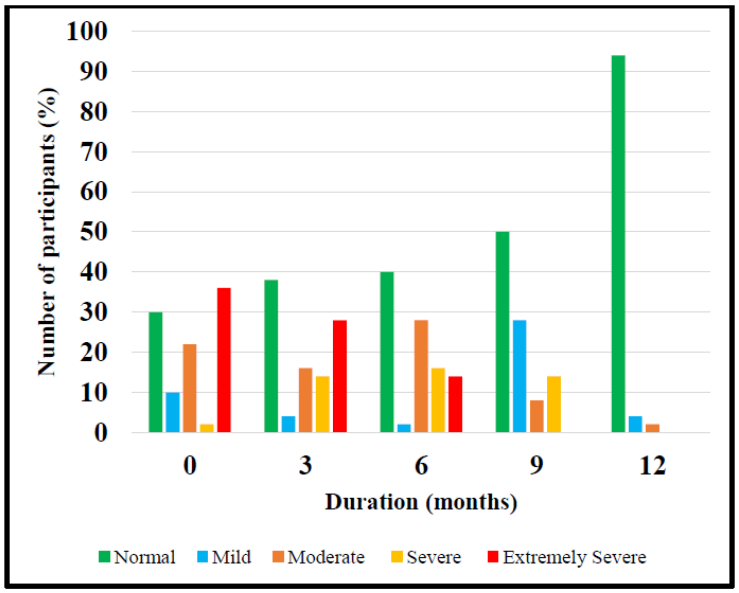

Fig. 1. Showing time dependent effect of yoga on depression

Tab. 3: Effect of yoga intervention on anxiety in participants

Duration (months)	Anxiety (Dass Score/number of participants)				
	Normal (0-7)	**Mild (8-9)**	**Moderate (10-14)**	**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.

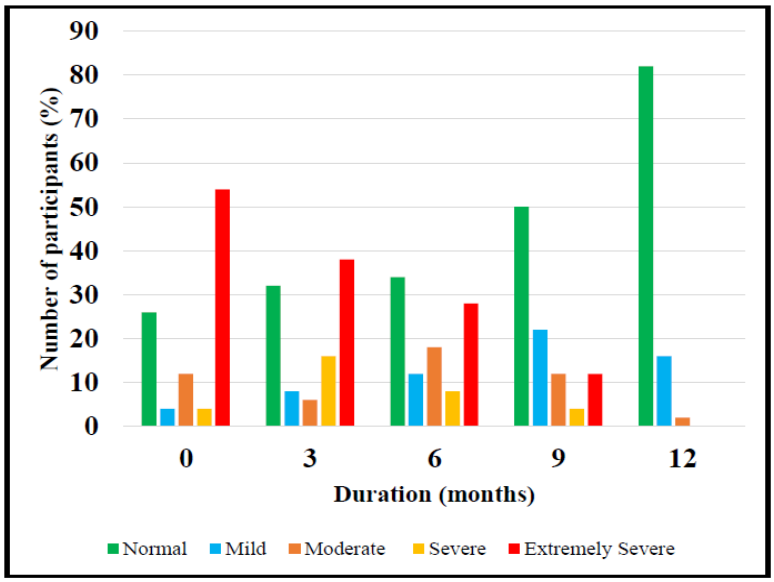

Fig. 2. Showing time dependent effect of yoga on anxiety.

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).

Tab. 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

taking deep breath during yoga, the body gets stress free. With yoga, blood circulation is smooth and harmful toxins come out from the body. Yoga posture, meditation and yoga brings relief from stress by the special actions of respirationby stabilizing the mind [2]. 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. 3).

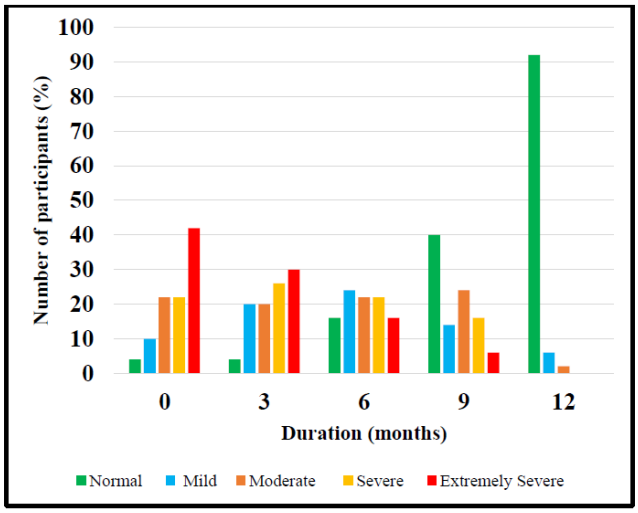

Fig. 3. Showing time dependent effect of yoga on stress

All the studies suggest that reducing stress in the autoimmune disease is a key component of a successful treatment program. The yogic practices relax the mind and body, calmness impact brain and immunity in a positive way, therefore considered as the most favorable and safe approach to manage stress and stress-related diseases [5].

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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