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Effect of Yogic Practices on High-Density Lipoprotein and Adjustment Among Perimenopausal Women

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Abstract: This randomised controlled experiment sought to investigate whether or not menopausal women who engaged in Yogic practises had improved levels of high-density lipoprotein and psychological well-being. Compared to a control group, perimenopausal women who engaged in Yogic practises were predicted to show statistically significant differences in high-density lipoprotein and adjustment. Thirty women in their 40s and 50s were recruited for the study, and using a random sample group design, they were divided into two groups (A and B) of 15 patients each. There was a pre-test on the chosen dependent variable for both Groups A and B before the training programme began. Group A received the Yogic practises, whereas Group B (the Control Group) received no treatment other than active rest. Each group (A and B) was evaluated again with the same dependent variable after an initial eight-week research period. There was a tally of alterations and HDL concentrations. Both paired and unpaired t tests were used to identify statistically significant differences between the experimental and control groups. The level of statistical significance used for this experiment was 0.05. The HDL levels and adjustment scores of perimenopausal women were shown to improve with yogic practises. As a result, we may accept the idea with 95% confidence.

Keywords: High-density lipoprotein, Adjustment, Yogic practices, Perimenopausal women

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Introduction

Both men and women may benefit from practising yoga. In many ways, the duties placed upon women by nature make them even better yoga practitioners than males. It is no secret that modern women excel in many industries. The horizons of her brain and imagination are

expansive. On life's stage, a woman is able to unleash her full creative potential. As a daughter, sister, mother, and friend, she has been juggling numerous responsibilities. So far, she has been the most effective in every one of these parts. Samkhya-yoga likens a woman to Prakriti, the

personification of Nature. If a woman has maintained her active lifestyle, her home and life are likely to be happy and fulfilling.

During perimenopause, a woman's body goes through hormonal changes and her ovaries generate less oestrogen than they did before menopause. This change may begin years before menopause, and its symptoms may be quite different for each woman. Hot flashes, nocturnal sweats, vaginal dryness, insomnia, and mood swings are all frequent perimenopause symptoms.

Perimenopause, the period leading up to menopause, usually begins in a woman's forties, but may occur earlier. As oestrogen levels drop, menopausal symptoms may set in. The average duration is 4 years, although it may be as short as a few months or as long as 10 years. When a woman passes 12 months without a menstruation, she is considered to have ended menopause and she has entered the postmenopausal phase of her life.. Menopause symptoms are common in middle-aged women.

The symptoms of perimenopause can vary greatly between individuals, but some common symptoms include – (i) Irregular periods- Perimenopause is characterized by fluctuations in hormone levels, which can cause the menstrual cycle to become irregular. This means that the length of time between periods may become shorter or longer, and the flow of the period may become lighter or heavier; (ii) Hot flashes- These are sudden feelings of intense heat that can cause sweating, rapid heartbeat, and a flushed or red face; (iii) Night sweats- Some women may experience hot flashes that occur at night, causing sweating that can disrupt sleep; (iv) Vaginal dryness- The decline in estrogen production during perimenopause can cause vaginal dryness, itching, and burning; (v) Mood changes- Hormonal changes can also affect a woman's emotional well-being, leading to feelings of irritability, anxiety, or depression; (vi) Fatigue and trouble sleeping- Many women find that they feel more tired than usual and have difficulty

sleeping during perimenopause; (vii) Headaches- some women may have headaches during perimenopause, more often than it was before; and (viii) Joint and muscle aches, Incontinence, Weight and metabolism change.

Perimenopause is caused by a decline in the production of estrogen and progesterone by the ovaries. As a woman ages, the number of follicles (the small sacs in the ovaries that contain eggs) decreases, and the ovaries produce less of these hormones. This decline in hormone production causes the menstrual cycle to become irregular and eventually leads to menopause, which is defined as the absence of menstrual periods for 12 consecutive months.

There are a variety of factors that can impact the timing of perimenopause and menopause, including genetics, medical conditions, and lifestyle factors such as smoking, stress, and weight. Certain medical treatments, such as chemotherapy and radiation therapy, can also trigger an early onset of perimenopause. It is worth mentioning that not all women experience perimenopause, some have a more sudden menopause transition.

Mann *et al.* (2012) conducted a survey to investigate the psychosocial adjustment of women who went through premature menopause. Prior research has shown that these women often encounter difficulties such as fertility problems, symptoms associated with menopause, and negative experiences with medical services. The sample for the study consisted of 136 women. The findings revealed that the psychosocial functioning of women with premature menopause was worse compared to those who went through menopause at a typical age. The results suggest that interventions that aim to improve psychosocial functioning and quality of life, including enhancing patient experiences and effectively managing menopause symptoms, would be beneficial for women with premature menopause. They also found that assumptions about treatment needs should not be based solely on patient characteristics,

indicating that personalized treatments may be more effective.

Soto Rodríguez *et al.* (2018) conducted study on Educational intervention on cardiovascular parameters in perimenopausal women with a cardiovascular risk factor. 320 healthy women between the ages of 45 and 60 with hypertension, diabetes mellitus, and/or dyslipidaemia participated in the research. Improvements in systolic blood pressure and frequency were seen among intervention group women compared to control group women. Compared to the experimental group, the glucose and gamma-glutamyl transpeptidase levels in the control group's women rose considerably. Postmenopausal women who suffer from hypertension, diabetes, and/or dyslipidaemia may benefit from an educational intervention to lower risk factors for cardiovascular disease.

This study aimed to determine whether or not perimenopausal women who regularly practised yoga saw improvements in their high-density lipoprotein levels and coping mechanisms. The goal of the research was to determine whether or not perimenopausal women who regularly practise yoga had changes in their levels of high-density lipoprotein and whether or not these changes are a result of yoga.

Materials and Methods

Eligibility criteria of the participants:

Inclusion criteria:

Women age group, 40 to 50 years, Women in pre-menopause and peri-menopause were included, Women residing in Chennai city only, independent variables are yogic practices only, Dependent variables are High-density lipoprotein and adjustment only.

Exclusion criteria:

Women who regularly practise yoga or another sort of physical activity. For women with severe orthopaedic issues or cancer, Women who have problems with their balance or neurological function, Medically-treated women, Women with

severe illnesses or mental retardation, as well as women who for any reason do not want to provide permission for data gathering, An injury to or recent surgery on the spine, hip, knee, ankle, shoulder, elbow, Spondylolisthesis Fibroids, tumours, etc., of the uterus. Spinal disc herniation, SI joint dysfunction, radiculopathy, stroke, and renal pathology. There was no oversight of the individuals' diets or medication regimens.

Thirty peri-menopausal women between the ages of 40 and 50 were chosen at random from a pool of eighty who volunteered for the research from the city of Chennai. Fifty women were examined for eligibility. Fifteen participants were randomly assigned to one of two groups, A and B. The two groups (A and B) were given a preliminary test on Adjustment and High-density lipoprotein before the training began. Group A was given Yogic practises; the Dyadic Adjustment Scale (in scores) questionnaire was utilised for adjustment, and high density lipoprotein lab test data were obtained from a standardised laboratory. Group B served as the Control group, receiving no formal instruction and continuing on with business as usual.

Adjustment was given and results were recorded again on the same High-density lipoprotein for both Groups A and B after the eight-week study period. It was determined whether or not there were statistically significant differences between the experimental and control groups using a paired t test and an independent t test. The significance threshold of the test was set at 0.05.

The following Practices (five days a week for the maximum of an hour in the morning for 8 weeks) (Table 1) were given to Experimental (Yogic Practices) group subjects.

- Loosening Exercises (Pawan muktasana Series I-Anti-Rheumatic Series)
- Suryanamaskar
- Selected Asanas: Padma Hasthasana, Supta Badha Konasana, Marichyasana, Upavishtha

Table 1: Yogic Practices schedule for yogic practices group

S. No.	Yogic Practices	Time Duration	
		I Four Weeks	II Four Weeks
		50 Minutes	60 Minutes
1	Pawanmuktasana Series I- Anti-Rheumatic Series)	7 Minutes	8 Minutes
2	Suryanamaskar	10 Minutes	10 Minutes
3	Selective Asana	18 Minutes	25 Minutes
4	Selective Pranayamas	5 Minutes	7 Minutes
5	Yoga Nidra	10 Minutes	10 Minutes

Konasana, Parivritta Janu Sirsasana, Navasana, Salabhasana, Dhanurasana Shavasan,

- Selected Pranayama: Kapalabathi, ujjayi pranayama, Nadisodhana
- Meditation practices for perimenopausal women: Yoga Nidra

The individuals in the experimental group (Yogic practises) were given yogic practises, while those in the control group (no training) were allowed to continue with their usual daily activities. Standardized lab equipment was used to measure high density lipoprotein levels, and an adjustment questionnaire was administered as a pre-test.

Both groups were retested on the identical set of dependent variables eight weeks later. Both HDL and Adjustment scores were determined. The significant differences between the experimental group and the control group were determined using the Independent Sample T test. The level of significance is at 0.05%.

Results and Discussion

The Adjustment scores for pre test in between yogic practices group (117.27 ± 5.24) and control group (116.73 ± 4.37) showed that t-value is 0.30271 (Table 2, Fig. 1). The p-value is 0.382174. The result is not significant. After the yogic practices given for eight week to the yogic practices group the post test results showed values in yogic practices group as 136.20 ± 9.81

and in control group as 119.07 ± 5.21 . The t-value is 5.97052. The p-value is < 0.00001 . Hence, it is proved that yogic practices improved adjustment scores among perimenopausal women which is in line with the study conducted by Mann *et al.* (2012) on Psychosocial adjustment in women with premature menopause.

The High-density Lipoprotein scores for pre-test in between yogic practices group (50.13 ± 6.88) and control group (51 ± 6.31) showed that t-value is 0.36 (Fig. 2). The result is not significant. After the yogic practices given for eight week to the yogic practices group the post test results showed values in yogic practices group as 62.07 ± 3.53) and in control group as 50.33 ± 6.45 . The t-value is 6.71 ($p < 0.00001$). Hence, it is proved that yogic practices improved High density lipoprotein among perimenopausal women which is in line with the study conducted by Soto Rodríguez *et al.* (2018) on educational intervention on cardiovascular parameters in perimenopausal women with a cardiovascular risk factor.

The Adjustment scores for yogic practices group on pre-test and post test results on the paired-t test the value of t is 8.031815 (Table 3). The value of p is < 0.00001 . Whereas the control groups pre- and post-test results showed that the value of t is 2.176596. The value of p is 0.04712. The result is significant. When comparing yogic practices group with that of control group the t value is statistically significant hence, it is proved

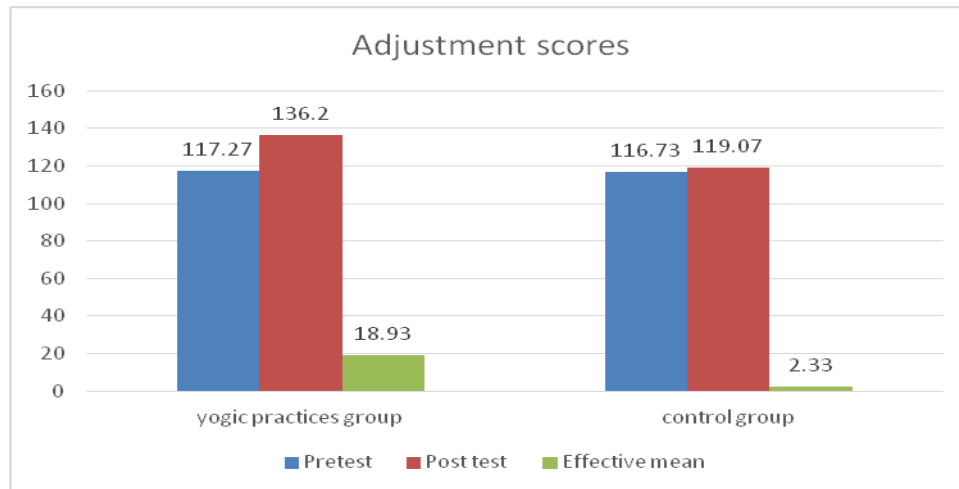


Fig. 1: Effects of yogic practices on Adjustment scores.

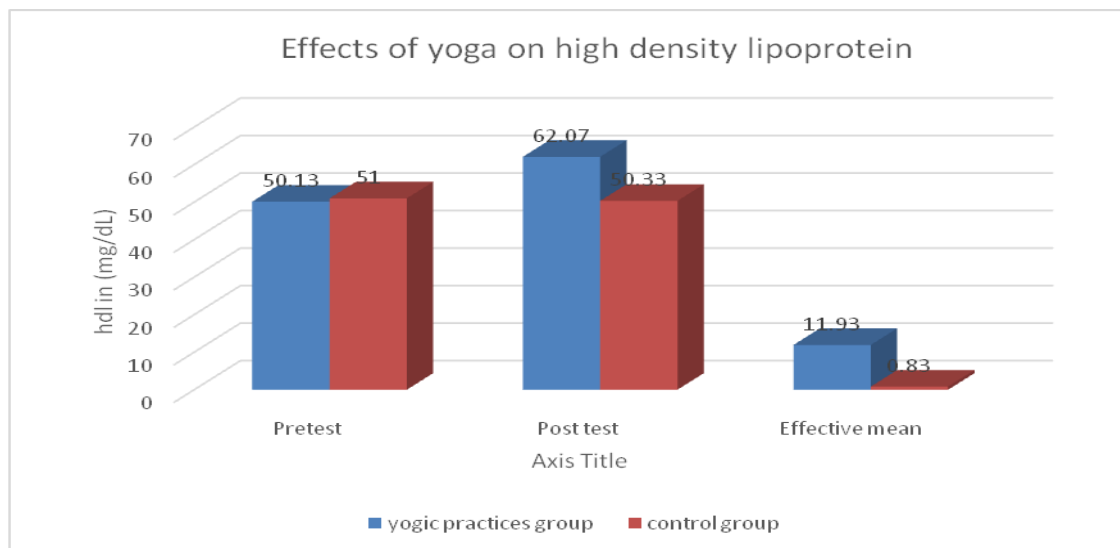


Fig. 2: Effects of yogic practices on high density lipoprotein.

Table 2: Comparison of Means between yogic practices Group and Control Group by Independent t test

Variables	Pre test			Post test		
	Yogic practices group	Control group	Independent t test	Yogic practices group	Control group	Independent t test
	Mean $\pm$ SD	Mean $\pm$ SD	P value	Mean $\pm$ SD	Mean $\pm$ SD	P value
Adjustment in scores	117.27 $\pm$ 5.24	116.73 $\pm$ 4.37	T=0.302 P=0.382	136.2 $\pm$ 9.81	119.07 $\pm$ 5.21	T = 5.97 P<0.001
High density lipoprotein (mg/dl)	50.13 $\pm$ 6.88	51.00 $\pm$ 6.31	T = -0.36 P=0.36	62.07 $\pm$ 3.53	50.33 $\pm$ 6.45	T=6.71 P< 0.05

Table 3: Effective mean of yogic practices group and control group

Variables	Yogic practices group		Control group	
	Effective mean+SD	Paired t test t value P value	Effective mean +SD	Paired t test t value P value
Adjustment	18.93 +9.13	8.03 P<0.001	2.33 +4.15	2.18
High density lipoprotein (mg/dl)	11.93+4.25)	10.87P<0.001	-0.83+3.10	-0.83; P=0.42

that yogic practices improved adjustment scores among perimenopausal women.

The High-density Lipoprotein scores for yogic practices group on pre-test and post-test results the value of t is 10.873476 (Table 3). The value of p is < 0.00001. The result is significant. Whereas the control groups pre- and post-test results showed that the value of t is -0.830455. The value of p is 0.42022. The result is not significant. Hence, it is proved that yogic practices improved high density lipoprotein among perimenopausal women.

Conclusion

According to the findings of this study, yogic practises were related with large alterations in high density lipoprotein and adjustment among perimenopausal women. This was in comparison to the Control Group. After reaching a level of confidence of 5%, it was decided to go forward and accept the hypothesis. Therefore, it is possible to draw the conclusion that perimenopausal women might potentially benefit from yogic practises in order to maintain a healthy lifestyle and an improved quality of life.

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