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EFFECT OF SIX MONTHS PRACTICE OF SURYANAMASKAR AND SELECTED ASANAS ON LIPID PROFILE OF JANGALMAHAL FEMALE TRIBAL STUDENTS.

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ABSTRACT Lipids are a group of fats and fat-like substances that are important constituents of cells and sources of energy. A lipid profile measures the level of specific lipids in the blood.
Aim: Effect of six months practice of Suryanamaskar and selected asanas on lipid profile of Jangalmahal female tribal students. For the purpose of the study 30 female tribal B.P.Ed students from Seva Bharati Mahavidyalaya, Kapgari were selected as subjects. Subjects were randomized divided into two equal groups such as experimental group (N=15) and control group (N=15).The experimental group undergo the practice of Suryanamaskar and Asanas for six months but the control group did not participate in any type of practice. The age ranged of the subjects was from 21 to 25 yrs. Pre and post test were conducted in order to identify the significance difference. The data was analyzed and compare with the help of statistical procedure in which arithmetic mean, standard deviation and't' test was used. The result of the study shows a significant improvement in the lipid profile (HDL) in the tribal B.P.Ed students of Seva Bharati Mahavidyalaya, Kapgari at 0.01 level of significance.

KEYWORDS : Suryanamaskar, asanas, lipid profile etc.

Introduction:

Yoga is a practical discipline incorporating a wide variety of practices whose goal is the development of a state of mental and physical health, well-being, inner harmony and ultimately "a union of the human individual with the universal and transcendent Existence". These practices are believed to have originated in early civilization on the Indian subcontinent and have been practiced historically in India and throughout East Asia. Yoga techniques include the practice of meditation, regulation of respiration with a variety of breathing exercises, and the practice of a number of physical exercises and postures, in which the focus is more on isometric exercise and stretching than on aerobic fitness. It seems that, yoga improves psychological conditions to manage stress, reduce anxiety and negative emotions, and increase positive emotions and to achieve emotional balance. Despite the popularity and positive physiological effects, still, Yoga is not widely introduced to prevent and treat chronic diseases such as diabetes. Mahajan et al. conducted a study on subjects with mild to moderate hypertension and reported that yoga can play an important role in risk modification for cardiovascular diseases. Another study had reported a better lipid profile in long and medium term meditators when compared to non meditators.

Yoga has potential for both prevention of diseases and promotion of health. This holistic approach of Yoga brings harmony in all walks of life and also influences one's day-today living. It brings suitable changes in behavioral pattern and attitude, which helps to improve interpersonal relationships at home and also in society. Therapeutic benefits of Yoga have also been revealed by many scientific researches carried out across the globe.

Today, Yoga has become popular because of its strengths in prevention and management of many lifestyle related disorders including physiological and psychosomatic disorders. The present era is characterized by technological advancement aimed at making life comfortable. However, faulty lifestyle, pollution, modern work culture has made life difficult and created havoc in all dimensions of life (physical, mental, intellectual, emotional, social and spiritual). The specialty of this system is that it can get along with any other drug systems of health care and this facilitates the practitioners of other systems of medicine, including modern medicine experts, to prescribe Yogic therapies to the patients.

Sun salutations, an ancient sequence of movements to express gratitude to the sun, are a key part of the vinyasa yoga practice. Suryanamaskar is one such form of yogic practice. Saraswati (1983) defines it as a series of 12 physical postures. Suryanamaskar includes various asanas like—*P*ranamasan, hasta utthanasan, padahastasan,

ashwasanchalanasan, ashtanaga namasakar, bhujangasan, and parvatasan. Datye states that Suryanamaskar is an *upasana* (worship) and *vyayam*(exercise) which are practiced in 10 counts. After reviewing all the definitions they can be combined to define Suryanamaskar as a series of *Yogasanas* (physical postures), along with breathing and *mantrocchar* (recitations). Out of the many existing types, the present research uses the version that has 10 poses (10 counts). Suryanamaskar as a traditional practice or a form of yogic exercise is well-known, but there are very few evidence based studies on the effects of Suryanamaskar on physiological changes and none that document Suryanamaskar and its psychological effects. The present research used theory of ABC relaxation to study the effects of Suryanamaskar on relaxation-Dispositions (R-dispositions) and stress dispositions. It is very difficult to define precisely what physical fitness means, but it is clear that we generally relate it to the accomplishment of a particular task assigned to a person. Physical fitness refers to the organic of the individual to perform the normal task of daily living without undue tired or fatigue having reserve of strength and energy available to meet satisfactorily any emergency demands suddenly placed upon him. A significant number of women in India are suffering from hypothyroidism. Hypothyroidism is characterized by elevated lipid profiles and thyroid stimulation hormone (TSH). It leads many comorbid conditions such as coronary artery disease, obesity, depression, osteoporosis, sleep apnea, and etc. Yoga is proven to be effective in reducing weight, dyslipidemia, depression and it brings the balance in autonomous nervous system.

Lipid profile or lipid panel is a panel of blood tests that serves as an initial broad medical screening tool for abnormalities in lipids, such as cholesterol and triglycerides. The results of this test can identify certain genetic diseases and can determine approximate risks for cardiovascular disease, certain forms of pancreatitis, and other diseases.

Experts recommend that men aged above 35 and women 45 be more frequently screened for lipid profile. The lipid profile includes LDL (low-density lipoprotein cholesterol, also called "bad" cholesterol), HDL (high-density lipoprotein cholesterol, also called "good" cholesterol), Triglycerides and Total cholesterol. LDL Cholesterol can build up on the walls of your arteries and increase chances of getting heart disease and is referred as "bad" cholesterol (Optimal Less than 100 mg/dl). HDL Cholesterol "good" cholesterol the higher the number, the lower your risk and it protects against heart disease by taking the "bad" cholesterol out of blood (Optimal above 60 mg/dl). Triglycerides Triglycerides are the chemical form in which most fat exists in food and the body. A high triglyceride level has been linked to higher risk of coronary artery disease (Optimal

less than 150 mg/dl). Total blood cholesterol is a measure of LDL cholesterol, HDL cholesterol, and other lipid components. Recommend total cholesterol level is below 200 mg/dl . Liver Enzymes Elevated liver enzymes may indicate damage to cells in the liver that may lead to Leak of liver enzymes in bloodstream, which can result in elevated liver enzymes on blood tests such as Alanine Aminotransferase(ALT), Aspartate Aminotransaminase (AST), Alkaline phosphatase (ALP) and Gamma glutamyl transpeptidase (GGT). ALT test measures the amount of this enzyme in the blood. ALT is found mainly in the liver, but also in smaller amounts in the kidneys , heart and muscles. ALT was formerly called serum glutamic pyruvic transaminase (SGPT). When the liver is damaged or diseased, it releases ALT into the bloodstream, which makes ALT levels go up.

Review of the literature: Saravanan, J.et al. (2010), studied the "Effect of Yogasana-s and Pranayama-s Exercises on Selected Biochemical and Physiological Variables". The study reveals that combined work of Asana-s and Pranayama-s significantly improves HDL (High Density Lipoprotein) concentration and decreases blood pressure, cholesterol, triglycerides and LDL (Low Density Lipoprotein) level. Yogaraj P, Ramaraj P and Elangovan R. (2010), studied the "Effect of Selected Yogic practices Physical Exercises on Bio-Chemical Variables among Women College Students". The Yogic practice group had significant improvement in body cholesterol and improved triglyceride, HDL and LDL. Yogaraj P, Ramaraj P and Elangovan R. (2010), studied the "Effects of selected Asana-s on serum cholesterol and functions of adrenal gland in college women" The study revealed that the Serum Cholesterol and Functions of Adrenal Gland were significantly improved due to influence of selected Asana-s practice. . Kasundra P.M., Thumar, P.B. and Mungra J.D. (2010), quoted the objective of the study was to assess the impact of Pranayama-s training on selected components of blood. This study revealed significant difference in pre-test and post-test of experimental groups of selected blood components i.e. cholesterol, blood glucose, hemoglobin, WBC, RBC, platelets. This shows that Pranayama-s training has an impact on selected components of blood. Mahajan A.S. et al. (1999), studied the effect of Yogic lifestyle on the lipid status in angina patients and normal subjects with risk factors of coronary artery disease. The parameters included the body weight, estimation of serum cholesterol, triglycerides, HDL, LDL and the cholesterol - HDL ratio. The conclusion of the study was the effect of Yogic lifestyle on some of the modifiable risk factors could probably explain the preventive and therapeutic beneficial effect observed in coronary artery disease.

Statement of the problem: The aim of the study was to investigate the Effect of six months practice of suryanamaskar and selected asanas on lipid profile of jangalmahal female tribal students.

Methodology:
In present study simple random sampling was adopted for selection of subjects. Thirty female tribal B.P.Ed students from Seva Bharati Mahavidyalaya, Kapgari were selected for the present study. Subjects were equally divided into two groups' i.e., Experimental group and Control group. Control grou[p did not participate in the practice programme. The ages ranged of the subjects were 21 to 25 yrs. Before the start of experimental treatment, all 30 subjects underwent baseline testing for assessment of their blood lipid profile (Total cholesterol, Triglycerides, Low-density lipoprotein, Very low-density lipoprotein, High-density lipoprotein). Final testing, which repeat of the baseline tests was conducted at the end of the 6 months yogic practice. Blood lipid analyses were performed at the Jhargram Pathological Laboratory.

Details of yogic Asanas practice:
Details of   Asanas practice: 1. Surya Namaskar 30 minutes   2. Yogamudra 3. Paschimatyasanas   4. Ardha Matsyendrasans 5. Bhadrasana 6. Bhujangasana 7. Shalabhasana 8. Dhanurasana 9. Nawkasana 10. Sethu Bandhasans 11. Shavasana 12. Matsyendrasana.13. Halaasana 14. Kanrapida asana. 15.sarvanga

Asana16. Viparitkarni asana 17. Pawanmukta Asans. 18. Tadaasana 19. Hastapada asana. 20. Akarnadanurasana

Result:
The results pertaining to the pre-test data and post test data of lipid profile of Experimental group have been represented below in table no.01.
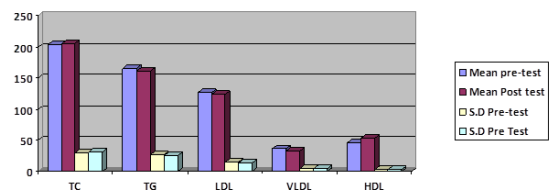
Table No-01

S.No	Lipid Profile	Mean (Pre Test)	S.D (Pre Test)	MEAN (Post Test)	S.D (Post Test)	Df	't' Value
1	TC	204.34	29.81	205.23	30.45	0.89	0.08
2	TG	165.83	26.92	161.44	24.31	4.41	0.47
3	LHL	126.46	14.08	124.02	13.23	2.44	0.48
4	VLDL	36.10	4.42	32.64	3.41	3.46	1.67
5	HDL	45.25	2.98	52.72	2.76	7.47	6.91

** Significant at 0.05 level

Table-1 indicates that there is no significant difference in the lipid profile of the subjects except HDL as the value obtain is (6.91) which is greater than tab. -t value (1.684) at 0.05 significant level.

Figure-No:01 Shows the score of mean and standard deviation of the pre and post test of Experimental Group.

The results pertaining to the pre-test data and post test data of lipid profile of control group have been represented below in the table no. 02.

TABLE NO 02

S.No	Lipid Profile	Mean (Pre Test)	S.D (Pre Test)	MEAN (Post Test)	S.D (Post Test)	Df	't' Value
1	TC	205.71	35.83	205.79	36.01	0.08	0.006
2	TG	157.50	22.32	158.62	22.44	1.12	0.013
3	LHL	126.65	16.24	126.24	16.12	0.41	0.06
4	VLDL	34.78	3.97	34.62	3.68	0.16	0.08
5	HDL	48.54	14.48	48.42	14.40	0.12	0.018

** Significant at 0.05 level

Table-2 indicates that there is no significant difference in the lipid profile of the subjects as the value obtain is lesser than tab. -t value (1.684) at 0.05 significant level.

Figure no.- 02 Shows the score of mean and standard deviation of the pre and post test of Control Group.
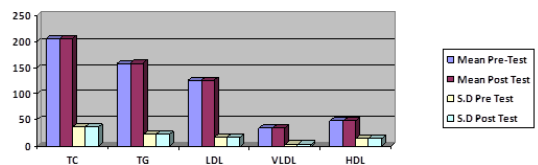
Conclusion: Based on our findings, it can be concluded that six weeks practice of Suryanamaskar and selected asanas has been found not useful in improving all lipid profile parameters except HDL.

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