International Journal of Yoga, Physiotherapy and Physical Education
www.sportsjournal.in
ISSN: 2456-5067
Received: 26-09-2025, Accepted: 26-10-2025, Published: 10-11-2025
Volume 10, Issue 4, 2025, Page No. 47-48

Influence of Pranayama training on selected Hematological Variables

Dr. M Uma Kamalavathi, Dr. S Sumathi
Assistant Professor, Sri Sarada College of Physical Education for Women, Salem, Tamil Nadu, India

Abstract
The purpose of the study was to find out the influence of Pranayama Training on selected hematological variables among diabetic peoples. To achieve the purpose of this study, twenty-four diabetic patients were selected as subjects from Tirunelveli District, Tamilnadu. The age of each subject was ranged from 30 to 45 years. The selected subjects were divided into two equal groups randomly. Group I was considered as experimental group and group II acted as control group. Group I undergone six weeks of pranayama training. During the training period the subjects are assessed to do the simple pranayama exercises such as ujjayi, suryabhadana, nadisudhi, sitali, sheetkri and bhastrika. The hematological variables such as the blood glucose and hemoglobin count were selected as independent variable for this study. All the subjects were tested on selected criterion variables prior to and immediately after the training period. The collected data were statistically analysed by using dependent "t" test and analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 levels for all the cases. It was concluded that, the experimental group had significant improvement on blood glucose and hemoglobin count due to the pranayama practice.

Keywords: Pranayama training, hematological variables, blood glucose, hemoglobin count, diabetic patients, yoga therapy, breathing exercises

Introduction

Pranayama is an exact science. It is the fourth Anga or limb of Ashtanga Yoga. Tasmin Sati Svasa prasvasayorgativicchedah Pranayamah Regulation of breath or the control of Prana is the stoppage of inhalation and exhalation, which follows after securing that steadiness of posture or seat, Asana. Thus, is Pranayama defined in Patanjali Yoga Sutras, it is one of the five basic principals of yoga. It refers to the practice of breathing fully and correctly. It is a Sanskrit word. It is comprised of two parts - "prana" which means "life force" and "yama" means "control." It is very effective to beat stress and anxiety, lower blood pressure and boost energy (Park, K, 2005 & Fagot *et al*, 2000) [1, 2].

Diabetes mellitus (DM) comprises a group of metabolic disorders that share the common phenotype of hyperglycemia, polydipsia, polyuria and hyperphagia. Added metabolic dysregulation in the form of deranged lipid profile, impaired insulin secretion and insulin resistance is a feature of type 2 diabetes. Most patients are obese when they develop diabetes and the obesity is becoming a major health hazard worldwide. The incidence of type 2 diabetes is also increasing with the increase in age, physical inactivity and sedentary lifestyle (Singh *et al*, 2004) [4]. Its strong familial predisposition makes the situation even worse with the result that children and adolescents now present with juvenile diabetes (Dabelea *et al*, 1998) [3].

Methodology

The purpose of the study was to find out the influence of Pranayama Training on selected hematological variables among diabetic peoples. To achieve the purpose of this study, twenty-four diabetic patients were selected as subjects from Tirunelveli District, Tamilnadu. The age of each subject was ranged from 30 to 45 years. The selected subjects were divided into two equal groups randomly. Group I was considered as experimental group and group II acted as control group. Group I undergone six weeks of pranayama training. During the training period the subjects are assessed to do the simple pranayama exercises such as ujjayi, suryabhadana, nadisudhi, sitali, sheetkri and bhastrika. The hematological variables such as the blood glucose and hemoglobin count were selected as independent variable for this study. All the subjects were tested on selected criterion variables prior to and immediately after the training period. The collected data were statistically analysed by using dependent "t" test and analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 levels for all the cases.

Analysis of Data

The collected data were statistically analyzed and the obtained results are presented in the following tables.

Table 1: Summary of Pre And Post Test Mean and Dependent 'T' Test on Selected Hematological Variables of Experimental and Control Groups

Criterion Variables	Mean and t-test	Experimental Group	Control Group
Blood Glucose	Pre-test	100.00	100.00
	Post test	97.50	99.50
	t-test	3.16*	0.98
Hemoglobin Count	Pre-test	10.44	10.37
	Post test	11.12	10.41
	t-test	2.86*	0.26

*Significant at .05 level.

Table 2: Analysis of covariance on criterion variables of experimental and control group

Criterion Variables	Adjusted Post Test Means		F-ratio
	Experimental Group	Control Group	
Blood Glucose	16.29	15.41	4.12
Hemoglobin Count	11.10	10.43	7.33

*significant at .05 level of confidence. (The table value required for significance at .05 level is 4.32)

Discussion

From table I, the dependent t-test values of blood glucose and hemoglobin count between pre-ant post means of experimental group were greater than the table value at 0.05 level of confidence, since it was concluded that experimental group had significant improvement on blood glucose and hemoglobin count due to pranayama exercises. However, control group had no significant improvement on selected variables.

From table II, obtained F-ratio blood glucose and hemoglobin count for adjusted post test mean were more than the table value of 4.32 for significant at .05 level of confidence. Therefore, the result of the study indicated that there is a significant difference among the adjusted post test means of experimental group on blood glucose and hemoglobin count. It may be concluded that experimental group had better improvement on selected variables.

Conclusion

When compared to the control group, the experimental group had significant improvement on blood glucose and hemoglobin count due to the pranayama practice.

References

1. Park K. Park' s Textbook of Preventive and Social Med. 18th edition. Banarsidas Banot Publishers, Jabalpur India, 2005, 311-15.
2. Fagot A, Pettitt DJ, Engelgau MM, Burrows NR, Geiss LS, Valdez R, *et al*. Type 2 diabetes among North American children and adolescents: an epidemiologic review and a public health perspective. J Pediatr,2000:136(5):664-72.
3. Dabelea D, Hanson RL, Bennett PH. Increasing prevalence of type 2 diabetes in American Indian children. Diabetologica,1998:41:904-10.
4. Singh S, Malhotra V, Singh KP, Madhu SV, Tandon OP. Role of yoga in modifying certain cardiovascular functions in type 2 diabetic patients. J Assoc Physicians India,2004:52:203-06.