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Effect of specific aerobic training on glycemic control, BMI and selected Physiologic parameters among type 2 diabetes patients attending Ayder comprehensive specialized hospital, Mekelle city, Ethiopia

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Introduction: Type II diabetes mellitus is a chronic metabolic disorder characterized by hyperglycemia and impaired insulin action and/or insulin secretion. Physical exercise is associated with decreased risk of morbidity and mortality in people with diabetes. However, recent studies suggest that the effect of physical exercise on glycemic control, Body Mass Index and physiologic parameter remain often under investigated and therefore not appropriately addressed among people with diabetes.

Objective: was to evaluate the effect of specific aerobic training on glycemic control, BMI and selected physiological parameters among type2 diabetes patient attending Ayder comprehensive specialized hospital Mekelle.

Methods: A total of 20 male type II diabetes patients were selected as subjects. All participants of the study were there age ranges between 35 to 45 years. The subjects those fulfilled the inclusion and exclusion criteria were selected and randomly divided in to two groups of ten (n=10) in each groups. Group I intervention group (n=10) in which 12 weeks specific aerobic training were given and group II control group (n=10) did not received any special training. Hemoglobin A1C for Glycemic control, Weight/(Height)² for Body Mass Index, counting at radial arteries for resting heart rate, counting number of inspiration for respiratory rate, Queens college step test for maximum oxygen consumption (VO₂max), and Nose clip for breath holding time test type or tool were used for this study to check the effect of the training. The data were analyzed using descriptive statistical SPSS version 20 software. Paired “t” test were used to compare pre and posttest result of within experimental and control groups and independent “t” test were used to compare pre and posttest between experiment and control groups with confident interval at the significant level of 0.05. Results were elaborated with tests, tables and figures in relation to the variables.

Result: Significant improvement in Glycemic control, Body Mass Index, and selected physiological parameters was observed in intervention group. Statistically significant change in terms of decrease in Hemoglobin A1C, BMI, resting heart rate, respiratory rate, and increase in VO₂max, and Breath holding time were seen in experiment group individuals whereas as the control groups no change was seen. Generally, the results obtained through this study proved independent “t” test comparison between experiment and control groups were shown positive effect on experimental group. After twelve week specific aerobic training experimental group showed better improvements on Glycemic control, Body Mass Index, and selected physiological parameters compare with control group at 0.05 levels confident.

Key words: Diabetes; Obesity; Body Mass Index, Glycemic control.

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Biography

Kalayou Kidanu received MSc degree in Adult health nursing from Addis Ababa University, Addis Ababa City, Ethiopia, in 2012 and got rank of Associate professor from Mekelle University in 2018. Currently he enrolled as PhD (PhD in nursing) student in a joint program of Muhimbili University of health and allied sciences (MUHAS) and Mekelle University. Since September 2009, he has been with the school of nursing, Mekelle university college of health sciences, where he was a graduate assistant lecturer I ,II and Lecturer, became an associate prof. in adult health nursing from Mekelle University in 2018 because of intensive research work he did. His current research interests include diabetes mellitus, Palliative care, Nursing administration and leadership, and nursing education, member of Ethiopian Nursing Association and national nurses' league. He participate in drafting and revision of nursing curriculums (e.g. ophthalmic nursing, operating theater nursing) which was organized by ministry of health. He had the chance to participate as poster presenter of research findings in the BUSINET DIABETES SYMPOSIUM and VLIR-UOS Sweet care conference at Thomas More University College, Belgium, 2017 and to work with Belgian training institutes through VLIR-UOS collaboration projects in having staff & student exchange aiming to strengthen hospitals health care services of the region and nursing education programs of our university via capacity building. So far kalayou did more than four diabetes related research projects as principal or Co-investigator and 27 published research articles in scientific journals.

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