



EFFICACY OF EXERCISE INTERVENTIONS IN PERCEIVED HEALTH-STATUS AMONG BANGLADESHI INDIVIDUALS WITH TYPE 2 DIABETES MELLITUS

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ABSTRACT

Background: Diabetes mellitus (DM), a lifestyle-related disease imposes an enormous social and economic impact on countries around the world. The prevalence of DM is growing in both rural and urban Bangladesh. The quality of life is getting hugely compromised due to the pervasiveness of this disease.

Aim: The purpose of the study is to make a comparison of aerobic and combined exercise intervention programs to understand the effects in the perceived health status of diabetic population

Method: This interventional study was carried out with 66 middle aged participants having Type 2 Diabetes Mellitus(T2DM) with middle income status residing in Dhaka, Bangladesh. There was 14 weeks of intervention sessions along with another 14 weeks of no intervention session to evaluate the sustainability of the intervention programs. The EuroQol 5D-5L questionnaire was used to measure the advancement in the perceived health status of the targeted population. Wilcoxon signed-rank test and Two-way repeated measures of ANOVA/ Mixed factorial ANOVA were used to analyse the data.

Results: After 14 weeks of aerobic exercise, significant improvement in the state of mobility ($p = 0.000$), maintaining self-care ($p = 0.001$) and the level of anxiety ($p = 0.000$) was observed. In case of combined exercise program, post-intervention improvements in perceived sense of mobility ($p = 0.010$) and anxiety ($p = 0.010$) were observed. In comparison between aerobic and combined exercise program ($p = 0.000$), significant difference observed at the post intervention phase with negative mean differences indicating higher values detected for combined group of participants.

Conclusions: It can be concluded that combined exercise program had shown the best outcome in enhancing the health status of the participants compared to aerobic and control group in this study.

1. INTRODUCTION

In the recent years Diabetes Mellitus (DM) has emerged as one of the four major non-communicable diseases (NCDs) which encompass the principal contribution to morbidity and mortality around the world¹. According to the World Health Organization (WHO)², about 422 million people worldwide are facing the complications of diabetes and the majority of them are residing in low-and middle-income countries. On top of those 1.6 million deaths are directly attributed to diabetes every year. The prevalence and the number of cases of diabetes have been gradually increasing over the past few decades. The global prevalence of diabetes increased from 4.7% in 1980 to 8.5% in 2014 among the adults aged from 18 years and above². In terms of premature mortality from diabetes, there was a 5% increase between the years 2000 and 2016 both in high-income and lower-middle income countries. Regrettably, more than 80% of deaths related to diabetes takes place in low- and middle-income countries around the world¹.

Bangladesh is a lower middle-income country with a considerable amount of burden of population of more than 160 million and is among the top ten countries with the highest number of adults with diabetes worldwide³. Similarly, like rest of the world, there is a significant rise in the prevalence of diabetes among the adults in Bangladesh. According to available statistics, there are about 7.1 million adults in Bangladesh who are affected by diabetes and this percentage is predicted to surge to 13.6 million by 2040⁴. There are also evidences that prevalence of type 2 diabetes mellitus (T2DM) is increasing in both rural and urban areas of Bangladesh⁵. A scoping review (1994-2013)¹ showed that the prevalence of T2DM in Bangladesh varied from 4.5% to 35.0%. This heavy burden of diabetes creates challenges in the health care management and expenditure which leads to economic burden on the healthcare systems and also on individual lifestyle. T2DM leads to certain acute and chronic complications like cardiovascular disease, blindness, kidney failure, and lower limb amputation in most of the cases⁴.