

## Effects of Gym-Based and Audio-Visual Guided Home-Based Exercise Programmes on Some Anthropometric and Cardiovascular Parameters Among Overweight and Obese College Students

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**Abstract :** This study investigated and compared the effects of gym-based exercise programme (GBEP) and audio-visual guided home-based exercise programme (AVGHBEP) on selected Anthropometric variables (Weight (W), Body Mass Index (BMI), Waist Circumference (WC), Hip Circumference (HC), Thigh Circumference (TC), Waist-Hip-Ratio (WHR), Waist-Height-Ratio (WHtR), Waist-Thigh-Ratio (WTR), Biceps Skinfold Thickness (BSFT), Triceps Skinfold Thickness (TSFT), Suprailiac Skinfold Thickness (SISFT), Subscapular Skinfold Thickness (SSSFT) and Percent Body Fat (PBF)); and Cardiovascular variables (Systolic Blood Pressure (SBP), Diastolic Blood Pressure (DBP) and Heart Rate (HR)) of overweight and obese students of Federal College of Education (Special), Oyo, Oyo State, Nigeria, with a view to providing information and evidence for GBEP and AVGHBEP in reducing overweight and obesity for promoting cardiovascular fitness. Eighty overweight and obese students ( $BMI \geq 25 \text{ Kg/m}^2$ ) were involved in this pretest-posttest quasi experimental study. Participants were randomly assigned into GBEP ( $n = 40$ ) and AVGHBEP ( $n = 40$ ) groups. Anthropometric and cardiovascular variables were measured using a weighing scale, height meter, tape measure, skinfold caliper and electronic sphygmomanometer following standard protocols. GBEP and AVGHBEP were implemented following a circuit training (aerobic and resistance training) pattern with a duration of 40-60 minutes, thrice weekly for twelve weeks. GBEP consisted of gymnasium supervised exercise programme while AVGHBEP is a Visual Display guided exercise programme conducted at the home setting. Data were analyzed by Descriptive and Inferential Statistics. The mean ages of the participants were  $22.55 \pm 2.55$  and  $23.65 \pm 2.89$  years for the GBEP group and AVGHBEP group, respectively. Findings showed that in the GBEP group, there were significant reductions in anthropometric variables and adiposity measures of Weight, BMI, BSFT, TSFT, SISFT, SSSFT, WC, HC, TC, WHtR, and PBF at week 12 of the study. Similarly, in the AVGHBEP group, there were significant reductions in Weight, BMI, BSFT, TSFT, SISFT, SSSFT, WC, HC, TC, WHtR and PBF at the 12th week of intervention. Comparison of the effects of GBEP and AVGHBEP on anthropometric variables and measures of adiposity showed that there was no significant difference between the two groups in weight, BMI, BSFT, TSFT, SISFT, SSSFT, WC, HC, TC, WHR, WHtR, WTR and PBF between the two groups at week 12 of the study. Furthermore, findings on the effects of exercise on programmes on cardiovascular variables revealed that significant reductions occurred in SBP in GBEP group and AVGHBEP group respectively. Comparison of the effects of GBEP and AVGHBEP on cardiovascular variables showed that there was no significant difference in SBP, DBP and HR between the two groups at week 12 of the study. It was concluded that the Audio-Visual Guided Home-based Exercise Programme was as effective as the Gym-Based Exercise Programme in causing a significant reduction in anthropometric variables and body fat among college students who are overweight and obese over a period of twelve weeks. Both Gymnasium-Based Exercise Programme and Audio-Visual Guided Home-Based Exercise Programme led to significant reduction in Systolic Blood Pressure over a period of weeks. Audio-Visual Guided Home-Based Exercise Programme can, therefore, be used as an alternative therapy in the non-pharmacological management of people who are overweight and obese.

**Keywords :** gym-based exercises, audio-visual guided home-based exercises, anthropometric parameters, cardiovascular parameters, overweight students, obese students

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