Statistical Analysis Plan

Participants with attendance rates below 60% in the intervention sessions will not be included in the analyses.

The analyses will be conducted using Stata statistical software (SE/ 14.0, StataCorp, College Station, TX, USA. Variables will be expressed using descriptive analysis (means and SD). The baseline information for both comparison and intervention groups will be statistically compared regarding all influencing factors at baseline and end line (12 weeks). The chi-square test will analyse for differences in categorical outcomes, including baseline study characteristics, metabolic risk factors (waist circumference (WC), blood pressure (BP), triglycerides, fasting blood sugar(FBS), and high-density lipoprotein (HDL) Cholesterol), and other factors including dietary habits such as fruits and vegetable intake, and food groups consumed. Behaviours, including smoking, alcohol intake, and physical activity, will also be analysed.

The Student T test for independent samples and variance analysis (ANOVA) will compare cardio-metabolic parameters (and their variations - to find any differences between findings) between the intervention group and the comparison group at the baseline and end of the intervention (after-before).

A 2 factor (2 x 2; group x time) repeated measures analysis of variance (ANOVA) will be performed for each dependent variable and a 1-way ANOVA will be used to assess the significance of differences between groups on the dependent variables assessed. Tukey's post hoc analysis will be performed if there is a significant finding. The T test for paired data will be applied to investigate within –group variable variations (after-before). Statistical significance will be set at $p < 0.05$.

Linear relationships will be estimated using Pearson correlation (crude model) to examine the associations between changes in variables, expressed as percentage of change ((endpoint - baseline value)/baseline value × 100). A multilevel generalized linear mixed model (GLMM) will be performed to identify the contribution of changes in time /round (baseline, end-line) and group (control, intervention) to changes in metabolic parameters (BP, WC, HDLC, FBS and Triglycerides) independent of other factors (education level, age, occupation etc).

The model allows for the analysis of data with repeated measures, particularly baseline and end-line measurements for each individual. It also assesses the effects of the intervention and accounts for the correlation between observations within individuals due to repeated measures, as well as the clustering of individuals within the control and intervention groups.