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Hospital and Community Partnership Project for Individuals with Metabolic Syndrome (MetS): An Evaluation on Changes in the Prevalence and Biomarkers of Met(S)

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Introduction

Metabolic syndrome (MetS) has become an important public health concern. Recent systematic reviews and meta-analyses have highlighted the gaps in effective strategies of engaging individuals with MetS in therapeutic lifestyle modification.

Objectives

The present evaluation study examined the effectiveness of a hospital–community partnered therapeutic lifestyle education intervention in reducing the prevalence and biomarkers of MetS among individuals in Hong Kong.

Methodology

This is a secondary data analysis of archived data from a serial community project. All recruited participants, aged over 40 without pre-existing diagnosis of hypertension, diabetes or hyperlipidemia, were screened for MetS according to the definition of the International Diabetes Federation. Those who were identified to have MetS received a person-centered lifestyle intervention delivered by a registered nurse, which comprised therapeutic lifestyle education and a personalized action plan. MetS individuals with a BMI above 30 kg/m² received two additional monthly follow-up reinforcement sessions. Outcomes were measured at baseline and three months post-intervention. The effects of the lifestyle intervention were analyzed based on the intention-to-treat principle.

Result

A total of 305 participants were screened (mean age: 51.8 ± 7.0 years), among which 160 participants identified to have MetS were recruited for the person-centered lifestyle intervention. Findings from paired t-test showed that MetS participants who underwent the intervention gained a significant reduction in waist circumference (WC)

(96.9 to 95.0 cm, $p < 0.001$), systolic blood pressure (SBP) (141.3 to 135.2 mmHg, $p < 0.001$), diastolic blood pressure (DBP) (85.8 to 83.1 mmHg, $p < 0.001$), and fasting blood glucose (5.6 to 5.0 mmol/L, $p < 0.001$). The overall prevalence of MetS was reduced by 26.9% ($p < 0.001$) at three months after the intervention. Specifically, the prevalence rates of central obesity (97.5% to 87.2%, $p = 0.040$), low HDL (85.6% to 76.9%, $p = 0.045$), and high SBP (81.3 % to 64.4%, $p = 0.001$) were significantly reduced.

The person-centered lifestyle intervention positively affected MetS parameters. This intervention may encourage community-dwelling individuals to actively engage in lifestyle modification and thereby reduce the prevalence of MetS.