

Effect of a healthy lifestyle on the components of the metabolic syndrome in adults of families with migrants

Background:

The Metabolic Syndrome is a conglomerate of risk factors that include obesity, hyperglycemia, dyslipidemias and arterial hypertension.

The Metabolic Syndrome affects 31.6% of adults in Mexico and increases up to five times the risk of developing cardiovascular disease and type 2 diabetes; and up to three times the risk of coronary heart disease and stroke.

Objective:

1. Perform a screening of Metabolic Syndrome in adults with economic marginalization residents of the Municipality of Tepoztlán - Morelos.
2. Design a comprehensive lifestyle intervention that outperforms the current standards of the Minister of Health



Defining a lifestyle challenge



Analysis of the food environment



Ideation. Community participation in order to find solutions



Prototypes were tested in the context of the target population

Methods:

Screening.

- Cross-sectional study to identify adults from 30 to 65 years of age with Metabolic Syndrome, using the harmonized definition of the AHA / IDF / NHLBI / WHF / IAS / IAOS.
- Anthropometry and blood pressure were measured through the methodology of the WHO and the AHA, respectively. FFQ and IPAQ long were applied, validated in the Mexican population.
- To identify associated comorbidities, a questionnaire was applied and a fasting venous blood sample of 9-12 hours was obtained. To define the presence of comorbidities, the WHO criteria for overweight or obesity were used; AHA for arterial hypertension; IDF for abdominal obesity; ATP III for hypercholesterolemia and hypertriglyceridemia; and the ADA for diabetes.

Design.

The process of testing, redefining, re-ideating and re-building of prototypes was followed in an iterative manner, with specific parameters as guidance. Different prototypes were tested within the context and restrictions of the target population. Each prototype was evaluated with the purpose of answering defining questions regarding the intervention.

Randomized Clinical Trial.

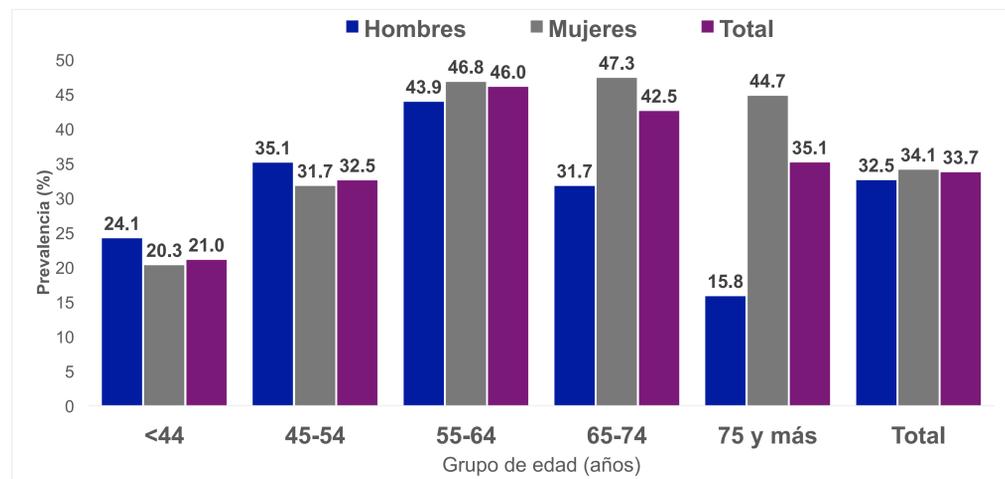
- After of the screening we developed a randomized clinical trial of 9 months of follow-up in 140 adults of migrant families living in the state of Morelos, Mexico (participants of the screening). The control group (GC, n = 70) received monthly non-pharmacological treatment for MS prescribed by the Ministry of Health, which consists of giving general indications to improve the diet and increase the time that physical activity is performed [AF]. The intervention group (GI, n = 70) received monthly personalized recommendations to adopt a healthy lifestyle adapted to the sociocultural context and local availability of food and physical spaces to perform AF. Each of the components of the SM was evaluated at 0, 3, 6 and 9 months. From months 0 to 6, the intervention was face-to-face and personalized and from months 7 to 9 the intervention was given by nutritionists through telephone calls of 20-25 minutes.

Results:

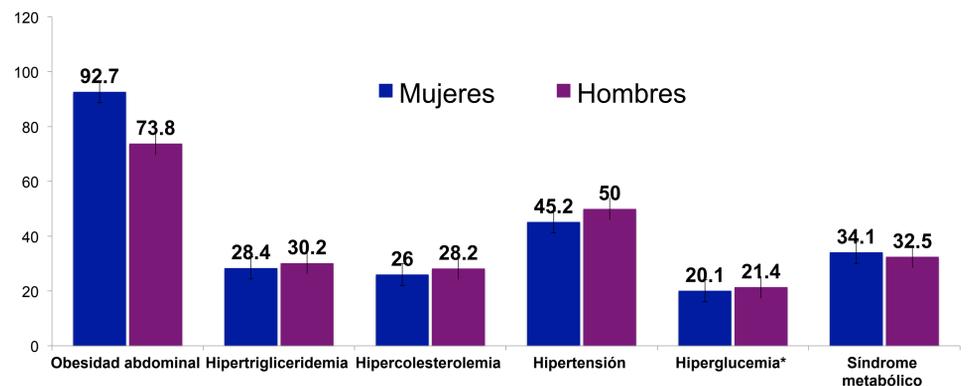
Screening.

- In 1,400 adults, the prevalence of Metabolic Syndrome was 33.7% (32.5% in men and 34.1% in women). When categorized by each component of the Syndrome, 88.1% had abdominal obesity, 72.6% overweight or obesity, 46.4% arterial hypertension, 28.8% hypertriglyceridemia, 26.5% hypercholesterolemia, and 21.9% diabetes. 25.9% of the participants reported to smoke and 3.3% have a history of acute myocardial infarction.

Prevalence of Metabolic Syndrome by age



Prevalence of Metabolic Syndrome by sex



Clinical Trial.

- In the comparison between groups, after 6 months of treatment in the IG a greater reduction was observed ($p < 0.05$) in the mean body weight (-1.27 ± 0.5 kg), BMI (-0.67 ± 0.2 kg / m²) and triglycerides (-35.2 ± 16.6 mg / dl), than in the GC. In the total follow-up of 9 months, no differences were observed between groups, although in the GI there was a significant reduction in the mean waist circumference (-4.06 ± 0.9 cm) and cholesterol (-8.02 ± 3.6 mg / dl).

Conclusions

The Metabolic Syndrome is a health problem that affects a third of the adults of Tepoztlán Morelos. Diagnosis and treatment should be a priority to prevent associated chronic diseases.

In adults of migrant families residing in the state of Morelos, treating MS with personalized lifestyle changes is more effective in reducing body weight, waist circumference and triglyceride than using the treatment of the Ministry of Health.