

Effect of multi-component school-based program on body mass index, cardiovascular and diabetes risks in a multi-ethnic study

Mexico has an extremely high obesity rate, and this number is even higher among ethnic groups like the Yaqui community. 72% of the Seri minority group have at least one family member with diabetes. Mexican schoolchildren are usually reliant on lunch from home or unaffiliated shops within schools, who are not obligated to follow any nutritional guidelines. Additionally, current physical activity classes in schools are insufficient for child physical activity needs. Therefore, this study was designed to determine “the effects of a multi-component school-based intervention programme on obesity, cardiovascular and diabetes risk factors” in multiple ethnic groups. Eligible children were aged between 4 and 12, attended a selected school, and gave consent. Treatment one, which was given to all ethnic groups, consisted of the following:

- “60-min physical activity conducted five days a week”
- “A health education workshop once a week”
- “A meal serving programme at the school five days a week”
- “Parent involvement activities”

Treatment two consisted of the above in addition to nutritionally balanced meals provided by the schools. An additional group of Mestizo children received this intervention.

By following the intervention, children living with overweight and obesity from all ethnic groups were able to significantly reduce their BMI. The children the treatment two group “showed improvements in almost all outcomes.” Additionally, “mixed results were observed in Seri and Yaqui ethnic groups... Seris decreased their BMI (though not significantly) and factors of cardiovascular risk (...), though they increased their diabetes predictive values. Yaquis improved their values of cardiovascular (...) and diabetes risk factors (...), but they increased their BMI.” Scientists explained some of these findings with observations of common practices in each community. Limitations include the short study duration and inability to randomise the study or use a control group for the indigenous children.

Reference: Costa-Urrutia P, Álvarez-Fariña R, Abud C, et al. Effect of multi-component school-based program on body mass index, cardiovascular and diabetes risks in a multi-ethnic study. *BMC Pediatr.* 2019;19(1):401. Published 2019 Nov 4. doi:10.1186/s12887-019-1787-x