

Proof-of-feasibility study of a participatory research program (YPAR) aiming to prevent obesity in children: Chic@s en Acción. GrowH! Study

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Introduction: Childhood obesity is a global public health concern (1) and unhealthy dietary behaviors and insufficient physical activity were reported as the main drivers worldwide (2). Despite various attempts to develop and implement sustainable interventions to promote healthy behaviors (3), current interventions have limited effects (4). Youth-centered Participatory Action Research (YPAR) is an approach that may reduce the health inequalities (5-8). The aim to explore the outcome evaluation of a proof of feasibility study in children.

Methods: The YPAR intervention approach was adapted from a previous program in Amsterdam (Netherlands) to Zaragoza (Spain) (9,10). The approach involved three phases: 1) preparation and adaptation; 2) participatory needs assessment; and 3) action co-development, implementation, and evaluation. Action Teams were established in the 1st phase, which groups of children participating as co-researchers through (bi)weekly meetings during two school years. Children aged 9-11 years attending primary schools in a socially disadvantaged neighbourhood in Zaragoza were included. A mixed-methods process- of outcome evaluation was conducted. The outcome evaluation included an assessment of children's physical activity, sedentary behaviors, dietary behaviors, and sleep, and determinants of these behaviors. The questionnaire was completed before and after the implementation of the co-created actions by the children. Outcomes were analyzed using Chi-square and Wilcoxon tests (11). All study activities were voluntary, and all participants signed a consent form.

Results: In the first phase, 3 Action Teams, including 20 children, were created. 16 of these 20 children (80%) participated in all YPAR co-creation activities. All children define their participation as a good experience. The directors agreed about the approach, whereas the teachers were more hesitant due to the limited time.

In phase 3, 80 children participated in the implemented actions (32 children in one school and 48 children in the other school; 59% response rate). Children participating in phase 3 reported a higher consumption of soft drinks, energy/sports drinks, snacks, water, and vegetables at T1 compared to T0, and a lower consumption of candy and fruit and higher consumption of fruits and vegetables in their celebrations at T1 compared to T0 (ns). Fewer children reported active transport to school, but an increase in physical activity was reported (ns). More children stay alone at home more times per week at T1 compared to T0 (ns). A higher screen time before bedtime at T1 than at T0 was reported (p=0.017). Fewer children reported sleep routines (ns) and sleep problems due to light (p=0.011) or noise (ns) at T1 compared to T0.

Conclusion: It was feasible to adapt the Dutch YPAR approach to the Spanish context. The approach was acceptable for children aged 9-11 years in Zaragoza and showed to have some potentially beneficial effects on children's health outcomes.

Growing up healthy: Obesity prevention tailored to critical transition periods in the early life-course

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Background: Obesity prevention programs often have had only limited or short-term effects. In particular socially vulnerable groups, who are affected most, have not been reached successfully. If the known modifiable risk factors were effectively changed in a favorable direction and if this was achieved in the early life course and in the most affected population subgroups, the burden of obesity and its related cardio-metabolic disorders could be reduced immensely.

Methods: We have modeled a hypothetical intervention that builds on the most recent longitudinal research results on risk factors while applying novel participatory intervention approaches in youth to develop and test better targeted and more effective primary prevention strategies. To this aim, we conducted a comprehensive analysis of two large children cohorts to assess the proportion of childhood obesity that is preventable by reducing modifiable risk factors and we implemented and tested two participatory community-oriented intervention approaches based on motivational interviewing and on participatory action research. Both approaches were adapted to target vulnerable groups with a systems lens.

Results: The impact of known modifiable risk factors at critical transition periods during the early life-course is age-dependent. The hypothetical interventions showed the strongest decrease in overweight and obesity prevalence for the reduction of screen time and the increase of physical activity. The novel participatory intervention approaches that have shown first promising effects in Canada and the Netherlands were successfully transferred to socially disadvantaged community settings in Spain and Germany with the support of operational stakeholders anchored in these settings. We evaluated the structural and regulatory requirements and conditions needed for the implementation and up-scaling of the developed intervention approaches onto a regional, national or international level from a whole systems perspective.

Conclusions: The lessons learned from the hypothetical intervention as well as from the implementation of the two participatory intervention approaches form the basis for a White Paper explaining the need for a systems perspective in developing future obesity prevention programs. The main messages of the White Paper will enter into a policy guidance document that may support the uptake and wider use of systems thinking for obesity prevention in a European context together with public health societies and the WHO.