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ID: 161

Wissenschaftliche Abstracts

Themen: Epidemiologie in Public Health Wissenschaft und Praxis, Gesund ein Leben lang: Public Health für alle Lebensalter, Anderes

Stichworte: obesity, decision-analytic modeling, prevention, community-based intervention

Assessing long-term health outcomes and cost effectiveness of a community-based intervention to prevent obesity in Austria – development of a decision-analytic model

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Background: The prevalence of overweight and obesity among adults (>15 years of age) has increased up to more than 50% in Austria and worldwide. Our previous systematic review on the effectiveness of community-based interventions (CBIs) to prevent obesity, identified programs demonstrating a body mass index (BMI) reduction, but the long-term effects in terms of health outcomes and costs in an Austrian setting have not been yet evaluated. Therefore, our study, funded by the EUREGIO-Environment, Food, Health Project, aims to develop a decision-analytic model (DAM) to assess the benefits, harms, costs and cost effectiveness of a CBI in Austria.

Methods: To evaluate a CBI in comparison to no intervention in terms of long-term health outcomes, costs and cost-effectiveness for an adolescent Austrian cohort, we developed a framework and DAM for obesity. We also performed a review to select obesity-related diseases for inclusion in the model.

Results: We chose a Markov model to run an Austrian cohort that starts at a free-of-events health state with three different weight categories (normal weight, overweight, obese). Over time, individuals can develop stroke, type 2 Diabetes mellitus, colorectal cancer and coronary heart disease, or die. The diseases included were based on the review findings. We chose quality-adjusted life years, life years and deaths as health outcomes, costs from a societal perspective as the economic impact and the incremental cost-effectiveness ratio for cost effectiveness. An intervention ("Shape Up Somerville") showing a BMI reduction was identified in the systematic review and its effects were applied as a shift in the weight distribution at the starting cohort. For the transition probabilities, we used age-dependent prevalences, relative risks, incidence rates, mortality rates, utilities, and costs from Austrian studies when available, otherwise the most comparable international data were applied. Scenario analyses for different intervention effect assumptions and sensitivity analyses for various parameters were also defined.

Conclusions: Our DAM will inform decision makers on the effectiveness and cost effectiveness of CBIs in Austria. It may also be used in the future to compare other types of interventions to support health care decision makers on most effective preventive measures.