FROM KNOWLEDGE TO ACTION APPLICATION

Title:
Translating Multifactorial Obesity Risk into Awareness and Prevention

MAE/YAE Investigator(s):
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Category:
From Science to Society

Problem (max. 50 words):
Obesity rates, particularly among children, are globally rising. However, there are rare existing data on the genetic predisposition to obesity in this population which limits early prevention and personalized interventions in most of the countries all over the world.

Unmet Need (max. 50 words):
There is a pressing need for personalized educational tools that integrate genetic risk and lifestyle advice to support healthier behaviors. No such awareness or educational tools currently exist in North Macedonia to help translate genetic findings into public understanding and preventive behaviors.

Project Description (max. 200 words):
This project builds on the first-ever genetic study of obesity-related genes (FTO, FABP2, and ADRB3) in the North Macedonian population. Our research revealed the prevalence of these genes in young adults and established a foundation for developing prevention strategies.

To translate these scientific findings into real-world impact, we will create an educational toolkit aimed at adolescents and young adults. The toolkit will consist of a personalized web-based platform and an optional printable leaflet, supported by a short, interactive workshop. These resources will explain how genetic and environmental factors jointly influence obesity risk and will highlight the importance of healthy behaviors—such as balanced nutrition, regular physical activity, sleep hygiene, and reduced sedentary time—as key lifestyle modifiers of genetic predisposition.

The content will be co-designed with youth to ensure clarity, cultural relevance, and engagement. The toolkit will be piloted in schools and universities, with pre- and post-intervention surveys to assess changes in knowledge, awareness, and behavioral intentions.

This initiative empowers youth with scientific understanding, motivates healthier lifestyle choices, and promotes public awareness of gene–environment interactions in obesity. It offers a replicable model for transforming cutting-edge research into accessible, community-level education and public health strategies.

Hypothesis (25 words):
Personalized education on gene-related obesity risk can increase awareness and motivate young adults and children to adopt healthier lifestyles in North Macedonia.

Implication for Practice (50 words):
This project will provide a simple, personalized tool to help individuals understand their genetic risk for obesity, leading to informed behavior changes. It has the potential to be adapted for other regions facing rising obesity rates and can support early intervention strategies. It empowers youth with knowledge of both genetic and lifestyle factors influencing obesity.

Implication for Research (50 words):
The project complements our original gene prevalence study with an applied public health approach. It explores how young people understand genetic information and how that knowledge affects behavior. This research contributes to the emerging field of behavioral genomics, evaluating how integrated lifestyle education influences real-world health outcomes in youth populations.

Plan for Widening the Study to All EU Countries

To ensure broader European relevance, our project “Translating Multifactorial Obesity Risk into Awareness and Prevention” is designed as a scalable pilot/model that can be expanded through the following steps:

Harmonization of Methodology: Standardized protocols should be developed for genetic, lifestyle, and behavioral data collection that can be easily adapted and applied in diverse EU contexts.

Strategic Partnerships: There is an intention to collaborate with public health institutions, universities, and research networks across EU member states to replicate and expand the study, ensuring comparable data and cross-country analyses.

Phased Expansion: Following this initial implementation in North Macedonia, the plan is in place to apply for EU-level funding (e.g., Horizon Europe, COST Action) to support a coordinated, multi-country study that can feed into meta-analyses and shared policy recommendations.

Policy and Community Engagement: We aim to engage EU-level stakeholders, such as EASO and relevant NGOs, to integrate our findings into wider awareness campaigns and prevention strategies adaptable to local circumstances.

This will help translate our pilot results into meaningful, evidence-based action plans across Europe, contributing to stronger obesity prevention efforts.

Strategy for broader European impact:

European Collaboration Network: We will actively seek partnerships with research groups, universities, and public health agencies in other EU countries to expand data collection and share best practices.

Common Framework: We will develop a flexible framework for risk assessment, awareness tools, and prevention programs that can be easily adapted to the cultural and health system differences across Europe.

EU-Level Funding & Policy Links: In the next phase, we will apply for EU collaborative funding (e.g., Horizon Europe, COST) to scale up the project and align it with European health policy goals, such as the EU4Health programme and WHO Europe's obesity targets.

Shared Dissemination: We will coordinate results and prevention strategies through European health networks and societies to reach policymakers, schools, and communities in multiple countries.