

**Babeş-Bolyai University Cluj-Napoca**

Faculty of Political, Administrative and Communication Sciences

Doctoral School of Administration and Public Policy

## **SUMMARY OF THE DOCTORAL THESIS**

### **Eating disorders among Romanian adolescents: biopsychosocial risk factors, parental communication and an integrated prevention model**

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## **Contents of the summary**

Contents of the doctoral thesis

Keywords

1. Introduction
2. Synthesis of the theoretical framework
3. Methodology and research design
4. Study 1. Eating disorder risk among adolescents
5. Study 2. Talking about weight with children
6. The exploratory pilot study
7. Scaling the educational interventions: the SPRINT and IMPACT programmes
8. The roadmap for an integrated educational ecosystem
9. Conclusions and original contribution of the thesis
10. Limitations of the research
11. Future research directions

Selected references

## Contents of the doctoral thesis

|                                                                                                           |    |
|-----------------------------------------------------------------------------------------------------------|----|
| List of publications.....                                                                                 | 3  |
| List of abbreviations used in the text .....                                                              | 4  |
| Abstract .....                                                                                            | 5  |
| List of figures .....                                                                                     | 10 |
| List of tables.....                                                                                       | 11 |
| Statement on the use of AI tools .....                                                                    | 12 |
| 1. Introduction.....                                                                                      | 1  |
| 1.1. The paradox of public health interventions: when solutions become problems .....                     | 1  |
| 1.2. Health education in Romania: a fragmented approach .....                                             | 3  |
| 2. Theoretical part .....                                                                                 | 5  |
| 2.1. Eating disorders among adolescents and the role of environmental factors .....                       | 5  |
| 2.1.1. Definition and classification of eating disorders .....                                            | 5  |
| 2.1.2. Global and Eastern European prevalence and incidence of eating disorders.....                      | 8  |
| 2.1.3. Determinants of eating disorders .....                                                             | 10 |
| 2.1.4. Conceptual delimitations: body positivity, body neutrality, body acceptance.....                   | 24 |
| 2.1.5. Stigmatisation of people living with obesity .....                                                 | 27 |
| 2.1.6. Diet and wellness culture: from body ideals to dysfunctional behaviours .....                      | 29 |
| 2.1.7. Educational interventions for the prevention of eating disorders.....                              | 30 |
| 2.1.8. Overall effectiveness of educational interventions for the prevention of eating disorders .....    | 33 |
| 2.2. Parental communication and weight stigma: determinants of eating disorder risk in adolescents .....  | 35 |
| 2.2.1. Theoretical foundations of parental communication about health.....                                | 35 |
| 2.2.2. Parental guidance styles in feeding: active guidance versus restrictive guidance .....             | 37 |
| 2.2.3. Weight stigma in the parent-child relationship.....                                                | 40 |
| 2.2.4. International evidence: studies from the USA and Europe.....                                       | 43 |
| 2.2.5. Gaps in Romanian research and the need for local contextualisation.....                            | 45 |
| 2.2.6. Implications for eating disorder prevention.....                                                   | 47 |
| 2.3. Proposed integrated conceptual model .....                                                           | 49 |
| 3. Methodology and objectives .....                                                                       | 52 |
| 3.1. General objectives.....                                                                              | 52 |
| 3.1.1. Specific objectives .....                                                                          | 52 |
| 3.2. Research questions.....                                                                              | 55 |
| 3.2.1. Research question 1 (Study 1, Section 4.1) .....                                                   | 55 |
| 3.2.2. Research question 2 (Study 2, Section 4.2) .....                                                   | 56 |
| 3.2.3. Research question 3 (Pilot study, Section 4.3) .....                                               | 58 |
| 3.2.4. Research question 4 (SPRINT and IMPACT programmes).....                                            | 60 |
| 3.2.5. Research question 5: Empirical grounding of a roadmap for an integrated educational ecosystem..... | 62 |
| 3.2.6. Synthesis: the progressive logical architecture from questions to answers .....                    | 64 |

|                                                                                                                                               |     |
|-----------------------------------------------------------------------------------------------------------------------------------------------|-----|
| 3.3. Research design and ethical considerations .....                                                                                         | 64  |
| 3.3.1. Ethical approvals and legal framework.....                                                                                             | 65  |
| 3.3.2. Informed consent and voluntary participation .....                                                                                     | 66  |
| 3.3.3. Protection of vulnerable participants and risk management .....                                                                        | 66  |
| 3.3.4. Confidentiality and data protection.....                                                                                               | 67  |
| 3.3.5. Supervision and qualifications of the research team.....                                                                               | 67  |
| 3.3.6. Transparency and conflicts of interest .....                                                                                           | 68  |
| 4. Practical part.....                                                                                                                        | 69  |
| 4.1. Observational study: Eating disorder risk among adolescents. The influence of dietary patterns, physical activity and BMI .....          | 69  |
| 4.1.1. Introduction.....                                                                                                                      | 69  |
| 4.1.2. Materials and methods.....                                                                                                             | 72  |
| 4.1.3. Results.....                                                                                                                           | 78  |
| 4.1.4. Discussion.....                                                                                                                        | 85  |
| 4.1.5. Limitations .....                                                                                                                      | 93  |
| 4.1.6. Conclusions.....                                                                                                                       | 94  |
| 4.1.7. Author contributions .....                                                                                                             | 96  |
| 4.2. Observational study: Talking about weight with children. Associations with parental stigma, bias, attitudes and child weight status..... | 96  |
| 4.2.1. Introduction.....                                                                                                                      | 96  |
| 4.2.2. Materials and methods.....                                                                                                             | 98  |
| 4.2.3. Results.....                                                                                                                           | 103 |
| 4.2.4. Discussion.....                                                                                                                        | 111 |
| 4.2.5. Limitations .....                                                                                                                      | 114 |
| 4.2.6. Conclusions.....                                                                                                                       | 117 |
| 4.2.7. Author contributions .....                                                                                                             | 118 |
| 4.3. Exploratory pilot research: Testing a non-formal educational intervention in schools (unpublished data).....                             | 119 |
| 4.3.1. Context and rationale of the study .....                                                                                               | 119 |
| 4.3.2. The educational intervention .....                                                                                                     | 120 |
| 4.3.3. Statistical analysis.....                                                                                                              | 122 |
| 4.3.4. Results.....                                                                                                                           | 124 |
| 4.3.5. Discussion.....                                                                                                                        | 129 |
| 4.3.6. Conclusions and lessons for the development of future interventions.....                                                               | 135 |
| 4.4. Scaling the educational interventions: the SPRINT and IMPACT programmes.....                                                             | 136 |
| 4.4.1. From the pilot study to national implementation.....                                                                                   | 136 |
| 4.4.2. Quantitative implementation data.....                                                                                                  | 138 |
| 4.4.3. The SPRINT programme: Nutrition education for pre-adolescents .....                                                                    | 140 |
| 4.4.4. The IMPACT programme: Nutrition education for adolescents .....                                                                        | 144 |
| 4.4.5. Conclusions, limitations and contributions to implementation science.....                                                              | 151 |
| 5. Conclusions .....                                                                                                                          | 153 |
| 5.1. Synthesis of the main results.....                                                                                                       | 153 |

|                                                                                  |     |
|----------------------------------------------------------------------------------|-----|
| 5.2. Answers to the research questions .....                                     | 156 |
| 5.3. Original contribution of the thesis .....                                   | 158 |
| 5.4. Fundamental limitations of the research .....                               | 160 |
| 5.5. Future research directions .....                                            | 161 |
| 5.6. The integrated educational ecosystem: empirical grounding and roadmap ..... | 162 |
| 5.7. Final conclusions .....                                                     | 166 |
| References.....                                                                  | 168 |
| Appendices.....                                                                  |     |

## **Keywords**

eating disorders, adolescents, prevalence, weight stigma, parental communication, internalised weight bias, body neutrality, prevention, educational interventions, scalability, Romania

## **1. Introduction**

### **1.1. The research problem**

Over the past three decades, public health communication has mobilised considerable resources against what the World Health Organization has called a "global obesity epidemic". Obesity among children and adolescents quadrupled between 1990 and 2022, affecting more than 390 million people aged 5 to 19 (WHO, 2025). Media campaigns, school nutrition education programmes and government initiatives have sought to protect young people's health by promoting balanced eating and physical activity. Recent literature, however, documents an unintended consequence of these efforts: interventions focused exclusively on fighting obesity can normalise the stigmatisation of people with higher body weight and can damage adolescents' mental health, including by increasing behaviours associated with eating disorders (EDs).

The evidence for this paradox is convergent. A systematic review of anti-obesity messages showed that such campaigns amplify body dissatisfaction and unhealthy weight-control behaviours in adolescents (Bristow et al., 2020), and people with diagnosed EDs perceive these campaigns as triggers of negative emotional responses that reinforce dysfunctional eating patterns (Bristow et al., 2023). Longitudinal data show that the effects persist: adolescents exposed to weight stigma before the COVID-19 pandemic had nearly three times higher odds of developing binge eating episodes during the pandemic (Puhl et al., 2020). The relationship between obesity and dysfunctional eating behaviours is bidirectional: obesity predisposes to unhealthy dieting practices that can evolve into EDs, and interventions focused solely on weight reduction can intensify this cycle rather than interrupt it (Stabouli et al., 2021).

The mechanisms through which well-intentioned interventions produce adverse effects include the simplistic equation of weight with health, fear-based messaging, public body mass index (BMI) screening in schools and the internalisation of stigma, that is, the process through which the individual adopts negative social stereotypes about the body as personal beliefs. Studies show that internalisation mediates the relationship between experienced stigma and

unhealthy eating behaviours, and that weight-based discrimination experienced in childhood correlates with increased psychopathology in adulthood (Launius & Lydecker, 2024).

Between 2014 and 2020, Romania implemented school nutrition education programmes such as "Healthy School" and the optional "Health Education" curriculum, some funded by the European Social Fund. Research, however, documents a considerable distance between declared policies, which pursued holistic strategies in line with WHO recommendations, and school practice, which frequently reproduced BMI screening, public announcement of weight classifications and a focus on weight reduction (Laxer et al., 2019; Turner & D'Arpino, 2025). According to the organisation Save the Children, the optional "Health Education" curriculum reaches approximately 6% of pupils, and the absence of official data on coverage, allocated hours and evaluation reflects the lack of systematic monitoring (Salvați Copiii România, 2026). The prevailing approach treats nutrition, physical activity and mental health as separate domains, ignoring the evidence on their interdependence and on the superior effectiveness of integrated programmes such as the Norwegian Healthy Body Image Programme (Sundgot-Borgen et al., 2018).

In this landscape, Romania faces a shortage of systematic epidemiological data on EDs in adolescents, an absence of research on contextual risk factors and a lack of validated prevention programmes. The present thesis responds to these gaps through a translational approach that links epidemiological diagnosis to the development, testing and scaling of educational interventions adapted to the Romanian context.

## **1.2. Aim and objectives of the research**

The thesis aims to develop an integrated ED prevention model for Romanian children and adolescents that balances nutrition education with the promotion of body neutrality, the countering of weight stigma and the involvement of families in healthy communication about food and the body, and to test the feasibility, acceptability and implementation processes of this model. The research concentrates on the initial validation stage of the intervention; long-term effectiveness evaluation and institutional implementation at national scale remain directions for future research.

The general aim was operationalised into five specific, sequential and interdependent objectives. Objective 1 (epidemiological diagnosis) sought to estimate the prevalence of ED risk, defined by an EAT-26 score of at least 20, among a minimum of 400 adolescents aged 12 to 19 in Cluj-Napoca, identifying associations with demographic, anthropometric and

behavioural factors. Objective 2 (family dynamics) investigated the associations between parents' experienced stigma, internalised weight bias, anti-fat attitudes and patterns of weight-related communication with children, in a minimum of 400 parents, with statistical testing of mediation. Objective 3 (development and initial testing) involved building a four-module non-formal educational intervention and testing its feasibility in three high schools in Cluj. Objective 4 (national scaling) aimed to extend the optimised interventions to at least 10 counties through trained volunteers, collecting at least 1,500 questionnaires from two age groups. Objective 5 (roadmap) sought to identify systematically the limitations of the stand-alone intervention model and to ground empirically an educational ecosystem with complementary components.

Each objective was translated into an operationalised research question, with variables, instruments and statistical analyses specified in advance. Together, the five questions build a progressive architecture: from measuring the problem (Questions 1 and 2), to testing a solution (Question 3), to demonstrating its scalability (Question 4) and to planning its sustainable extension (Question 5).

### **1.3. Structure of the thesis**

The thesis is organised in five chapters. Chapter 1 presents the paradox of public health interventions and the fragmentation of health education in Romania. Chapter 2 develops the theoretical framework: the definition and classification of EDs, prevalence, biological, psychological and sociocultural determinants, the conceptual delimitations between body positivity, neutrality and acceptance, stigmatisation, diet culture, educational interventions and their effectiveness, parental communication about weight and, finally, an integrated conceptual model proposed by the author. Chapter 3 sets out the objectives, research questions, design and ethical considerations. Chapter 4 contains the practical part: two observational studies published in the journal *Nutrients*, an exploratory pilot study with unpublished data and the documentation of scaling through the SPRINT and IMPACT programmes. Chapter 5 synthesises the results, answers the research questions and formulates the original contribution, limitations, future directions and the roadmap for the integrated educational ecosystem.

## **2. Synthesis of the theoretical framework**

### **2.1. Eating disorders in adolescents and the role of environmental factors**

The theoretical chapter starts from the definition and classification of EDs according to DSM-5 (anorexia nervosa, bulimia nervosa, binge eating disorder, and orthorexia nervosa as an entity not yet officially recognised) and from prevalence data. Globally, a meta-analysis of 32 studies from 16 countries, with 63,181 participants aged 6 to 18, estimated that approximately 22% of children and adolescents display disordered eating behaviours, with a proportion of 30% in girls compared with 17% in boys, and with increases directly proportional to age and BMI (López-Gil et al., 2023). The incidence reported in Finland reaches 220 cases per 100,000 persons per year among adolescents aged 10 to 20.

For Eastern Europe, the literature remains fragmentary: anorexia and bulimia are reported in most countries of the region, but the data come from isolated studies with non-uniform methods and non-representative samples (Brytek-Matera, 2023). In Romania, research has focused on body image and psychosocial risk factors, clinical screening is inconsistent, and professionals report difficulties in recognising early symptoms (Brumboiu et al., 2018). The experience of the ProYouth digital programme in Hungary shows that young people who access such platforms already display significant weight concerns, which points to a demand far above the capacity of mental health systems in the region (Szabo et al., 2015).

The section on determinants organises risk factors on three levels: biological and genetic (heritability, neurobiology, the HPA axis, puberty), psychological and behavioural (perfectionism, body dissatisfaction, emotion regulation, comorbidities with anxiety, obsessive-compulsive and post-traumatic disorders) and sociocultural (body ideals, media and social networks, family and peer pressures). Table 1 of the thesis classifies psychological factors by their functional role as predisposing, precipitating or maintaining factors.

The conceptual delimitations between body positivity, body neutrality and body acceptance prepare the central principle of the interventions developed later. Body neutrality, defined as acceptance of the body's functions independent of appearance and recognition of body diversity as normal, is preferred to body positivity because it does not impose on the adolescent the obligation to love their body, a demand that can generate additional pressure.

The stigmatisation of people with obesity is treated as a system of stereotypes and discriminatory practices with documented consequences for mental health, avoidance of

medical care and eating behaviours (Tomiya et al., 2018). Diet and wellness culture is analysed as a belief system that prioritises physical appearance to the detriment of functional health, with typical messages such as the dichotomisation of foods into "good" and "bad", obsessive calorie counting and the glorification of "clean eating".

The last two subchapters of the first part review educational interventions for ED prevention and their effectiveness. Meta-analyses report a modest average effect size for prevention programmes as a whole, with exceptional programmes such as The Body Project ( $d = 0.72$ ). The ranking of interventions places cognitive dissonance-based approaches first ( $d = 0.50$  to  $0.75$  for body dissatisfaction and ED symptoms), followed by media literacy and multi-component programmes (Dunker et al., 2023). The conclusion of the section is that culturally adapted interventions are more effective than those imported without adjustment, which turns adaptation to the Romanian context from an option into a condition of effectiveness (Munguia & Forbush, 2023).

## **2.2. Parental communication and weight stigma**

The second part of the theoretical framework examines parental communication as a determinant of ED risk. The theoretical foundations include social learning theory, models of food socialisation and research on parent-adolescent conversations about eating, physical activity and weight (Berge et al., 2015). Two parental guidance styles are distinguished: active guidance, oriented towards health and behaviours, and restrictive guidance, centred on weight and on control of food intake. Evidence from the USA and Europe converges in showing that weight-focused conversations, even well-intentioned ones, are associated with body dissatisfaction, restrictive dieting and compensatory behaviours in adolescents, whereas health-focused conversations have a neutral or protective effect.

Weight stigma in the parent-child relationship is analysed through the lens of internalisation: parents who have experienced stigma may adopt negative stereotypes and transmit them to their children through comments, restrictions or pressure. The Modified Weight Bias Internalization Scale (WBIS-M) allows this construct to be measured regardless of the respondent's weight category (Pearl & Puhl, 2014). The subchapter devoted to gaps in Romanian research argues that Western findings cannot be transferred directly, owing to specific post-communist factors: the rapid transition towards Western values regarding the body, the lack of a tradition of critical media literacy and the absence of mental health education from the curriculum.

### **2.3. The proposed integrated conceptual model**

Drawing on the reviewed literature, the author proposes an integrated conceptual model built on the socio-ecological framework (Sadownik, 2023) and adapted to articulate the contributions of the literature on EDs, stigma and parental communication (Figure 1 of the thesis). The model operates on three levels. At the macro level, Romanian adolescents are exposed to a diet culture perpetuated through social networks, weight-centred public health campaigns and norms that equate the thin body with health and social success (Puhl & Heuer, 2009; Tomiyama et al., 2018). At the meso level, the model proposes a mediation sequence: the stigma parents experience in society is cognitively internalised, generates explicit anti-fat attitudes and manifests behaviourally through critical weight-related communication with children. At the micro level, critical parental communication feeds a cluster of risk factors along two pathways: the cognitive-emotional pathway (body dissatisfaction, internalisation of the thin ideal, excessive preoccupation with the body) and the behavioural pathway (restrictive dieting, restriction-compensation cycles).

Two mechanisms act transversally across all levels, with opposite roles. Weight stigma works as an amplifier: it normalises discrimination at the macro level, leads parents to transmit weight anxiety at the meso level and produces self-stigmatisation at the micro level. Body neutrality works as a protective factor: it reduces the impact of societal messages, facilitates non-critical parental communication and protects against body dissatisfaction. The model is explicitly translational, each level identifying concrete intervention points tested empirically in the practical part of the thesis: Study 1 for individual factors, Study 2 for the family-level mediation sequence, and the educational programmes for the promotion of body neutrality. The author acknowledges that the model requires longitudinal validation and examination of moderation effects (gender, age, residence).

## **3. Methodology and research design**

The thesis adopted a sequential mixed-methods design combining cross-sectional observational studies with exploratory interventional research and implementation research. The choice reflects the translational logic of the endeavour: first measuring the problem and its mechanisms, then testing a solution at small scale, then verifying whether it can be extended with limited resources. In total, the research involved more than 2,500 participants: 423 adolescents in Study 1, 414 parents in Study 2, 205 adolescents enrolled in the pilot study (67

completers) and approximately 1,660 questionnaires collected through the SPRINT and IMPACT programmes.

### **3.1. Research questions**

Question 1 addressed the prevalence of ED risk ( $EAT-26 \geq 20$ ) and its associations with gender, age, residence, BMI, adherence to the Mediterranean diet (Medi-Lite score), ultra-processed food consumption, physical activity level and prior consultation of a specialist, tested through binary logistic regression. Question 2 addressed the relationship between parents' experienced stigma, internalised weight bias (WBIS-M), anti-fat attitudes (AFA), fat phobia (UMB-FAT) and five types of parental communication (weight conversations, health conversations, comments about one's own weight, about others' weight and about diet or exercise), tested through correlations, hierarchical regression and mediation analysis with the PROCESS macro (Hayes, Model 4). Question 3 addressed the feasibility of the pilot intervention: retention rate, pre-post changes in knowledge and attitudes, and implementation barriers. Question 4 operationalised scaling on four dimensions: geographic coverage, the decentralised volunteer model, adaptation by age group and the feasibility of collecting validated data. Question 5 was structured into three components: diagnosis of limitations (Q5a), mapping of ecosystem components (Q5b) and proposed synergistic mechanisms (Q5c).

### **3.2. Ethical considerations**

All studies were approved by the Scientific Council of Babeş-Bolyai University (approval no. 224 of 27 February 2024). For minor participants, written consent was obtained from parents or legal guardians, together with the pupil's personal assent; adult participants provided personal informed consent. Participation was voluntary and anonymous, without compensation. The intervention protocols included specific protective measures for a vulnerable audience: explicit framing of any discussion of ED behaviours in the register "these are harmful and require specialised help", avoidance of detailed descriptions of restrictive or purging methods, provision of help resources at the end of each session and availability of facilitators for private conversations. The statement on the use of artificial intelligence tools included in the thesis specifies that these were used to improve writing and to verify sources, without intervening in conceptualisation, design, data collection or analysis.

## **4. Study 1. Eating disorder risk among adolescents: the influence of dietary patterns, physical activity and BMI**

The study, published in *Nutrients* (Ispas et al., 2025a), used a cross-sectional design on a convenience sample of 423 adolescents from seven high schools in Cluj-Napoca (George Coşbuc, Alexandru Borza, Ana Aslan, Augustin Maior, Nicolae Bălcescu, Spiru Haret and Spectrum). Teachers invited pupils to participate during class; all those who returned the consent and assent forms were included. Comparison with National Institute of Statistics data for Cluj County shows a gender distribution close to the reference population (52.7% girls in the sample versus 48.9% in the population) but an over-representation of the urban environment (72.3% versus 57.2%), an anticipated consequence of sampling from high schools in the municipality. The sample size calculation indicated a minimum of 382 participants for a 95% confidence interval and a 5% margin of error.

### **4.1. Instruments**

Data were collected through a Google Forms questionnaire completed in class. Height and weight were self-reported, and BMI was classified by percentile according to WHO references for ages 5 to 19. Adherence to the Mediterranean diet was measured with the Medi-Lite score, ultra-processed food consumption with a dedicated score, physical activity with a modified score covering leisure time, physical education classes, breaks and the journey to school, and ED risk with the EAT-26 scale, using the clinical cut-off of 20. The questionnaire also included questions about prior consultation of a specialist for weight or mental health problems.

### **4.2. Results**

Mean age was 16 years ( $SD = 1.3$ ). Mean BMI was  $21.45 \text{ kg/m}^2$  ( $SD = 3.80$ ); 77.4% of participants had normal weight, 16.3% overweight and 5.6% obesity. Boys had a higher mean BMI than girls (22.01 versus 20.95;  $p = 0.004$ ), and rural adolescents a higher BMI than urban ones (22.68 versus 20.98;  $p < 0.001$ ). Adherence to the Mediterranean diet was predominantly moderate (69.5%), with a mean Medi-Lite score of 5.74 ( $SD = 1.77$ ), higher in girls. Frequent consumption of fast food (61.5%), sweets (75.7%) and sugar-sweetened beverages (62.2%) characterised most of the sample; energy drink consumption was mainly rare (81.1%). The mean physical activity score was 3.33 on a scale from 1 to 5.

The mean total EAT-26 score was 15.75 (SD = 14.07), with a positively skewed distribution. 26.5% of participants (n = 112) scored at or above the clinical cut-off of 20. Internal consistency of the scale was excellent ( $\alpha = 0.908$ ), yet confirmatory factor analysis of the three-factor structure indicated suboptimal fit (CFI = 0.781; TLI = 0.759; RMSEA = 0.079; SRMR = 0.087, below the Hu & Bentler, 1999 criteria). After removal of two low-loading items (EAT19 and EAT26) and addition of three residual covariances, fit improved without reaching strict standards. An exploratory factor analysis revealed a two-factor solution explaining 44.47% of the variance: "Dieting, body image concerns and food-related guilt" and "Social pressure and loss-of-control behaviours". The 24-item version had  $\alpha = 0.920$ .

The multiple binary logistic regression (Table 1) was statistically significant ( $\chi^2(7) = 38.24$ ;  $p < 0.001$ ), explained 12.6% of the variance in EAT-26 clinical status (Nagelkerke  $R^2$ ) and correctly classified 73.9% of cases, with a non-significant Hosmer-Lemeshow test ( $p = 0.791$ ).

**Table 1. Binary logistic regression predicting an EAT-26 score at or above the clinical cut-off (N = 418)**

| Predictor                            | uOR (simple) | p       | aOR (multiple) | 95% CI       | p       |
|--------------------------------------|--------------|---------|----------------|--------------|---------|
| Gender (girl vs. boy)                | 1.60         | 0.034   | 1.61           | [1.01; 2.65] | 0.044   |
| Residence (urban vs. rural)          | 1.36         | 0.195   | 1.06           | [0.62; 1.79] | 0.840   |
| Age (years)                          | 1.08         | 0.344   | 1.07           | [0.90; 1.28] | 0.450   |
| BMI                                  | 1.06         | 0.035   | 1.05           | [0.99; 1.12] | 0.097   |
| Medi-Lite score                      | 0.97         | 0.673   | 0.92           | [0.80; 1.05] | 0.198   |
| Ultra-processed food score           | 0.92         | 0.331   | 0.89           | [0.75; 1.05] | 0.172   |
| Physical activity score              | 0.87         | 0.284   | 0.98           | [0.74; 1.31] | 0.910   |
| Specialist consultation (yes vs. no) | 3.92         | < 0.001 | 3.76           | [2.20; 6.16] | < 0.001 |

Prior consultation of a specialist for weight or mental health problems was the strongest predictor (aOR = 3.76; 95% CI [2.20; 6.16]). The author interprets this association as an indicator of already established symptoms rather than as a protective factor: adolescents reach a specialist at an advanced stage of the problem, which signals the absence of systematic preventive screening mechanisms. Female gender reached the threshold of significance (aOR = 1.61;  $p = 0.044$ ). BMI was significant only in the simple regression (uOR = 1.06;  $p = 0.035$ ) and remained at the margin of significance in the adjusted model. Age, residence, Mediterranean diet adherence, ultra-processed food consumption and physical activity did not independently predict exceeding the clinical cut-off.

### **4.3. Discussion and conclusions**

The prevalence of 26.5% falls within the range reported by comparable studies in Western Europe (20 to 30%) and the United States (20 to 25%). Convenience sampling and the restricted geographic coverage preclude extrapolating this figure as an estimate for the Romanian adolescent population, but it indicates a substantial problem in the urban high school environment. The absence of an independent association between eating or exercise behaviours and ED risk suggests that the measured risk depends mainly on psychosocial factors, such as stigma, diet culture and media influences, which were not explicitly assessed in this study. Limitations include the cross-sectional design, self-reported anthropometric data and the use of the EAT-26 without prior cross-cultural validation for the Romanian context. From a public health perspective, the results support reorienting prevention strategies beyond classical nutrition education towards programmes that include body acceptance, media literacy and early identification of pupils at risk.

## **5. Study 2. Talking about weight with children: associations with parental stigma, bias, attitudes and child weight status**

The second study, also published in *Nutrients* (Ispas et al., 2025b), used a cross-sectional online survey design (Google Forms, September to December 2024) on a convenience sample of parents from Cluj-Napoca, recruited through social media announcements and partnerships with schools. Of 448 respondents, after excluding those with children outside the 5 to 17 age range ( $n = 12$ ), with substantially incomplete anthropometric data ( $n = 20$ ) or implausible values ( $n = 2$ ), the final sample numbered 414 parents, above the a priori threshold of 384. The author explicitly flags the selection bias introduced by online collection, in favour of parents with higher education and access to technology, with the probable consequence of underestimating problems in socio-economically vulnerable segments.

### **5.1. Instruments**

The questionnaire covered demographic data, self-reported anthropometry for parent and child (with BMI percentiles for children), five measures of parental communication culturally adapted from previous research (health conversations, weight conversations, comments about one's own weight, about others' weight and about diet or exercise), a dichotomous question on experienced stigma, the WBIS-M scale for internalised bias ( $\alpha = 0.94$ ), the AFA questionnaire for anti-fat attitudes ( $\alpha = 0.87$ ) and the UMB-FAT scale for fat phobia ( $\alpha = 0.84$ ). The

instruments were administered in Romanian translations, and the reliability coefficients obtained constitute a first psychometric assessment of these scales in Romanian parents.

## 5.2. Results

Parents were predominantly mothers (91.8%), married (89.6%), with higher education (78.5%); 36.8% had overweight or obesity. Children had a mean age of 10.05 years ( $SD = 1.71$ ); 22.2% were classified with obesity and 13.6% with overweight. 44.7% of parents reported having been teased or treated unfairly because of their weight. General health communication was the most frequent type of interaction ( $M = 3.84$  on a scale from 1 to 5), and weight-focused talk the least frequent ( $M = 2.31$ ).

Spearman correlations showed that internalised bias, more than experienced stigma, is the robust correlate of parental attitudes and communication: it is associated with fear of fat ( $\rho = 0.48$ ), anti-fat attitudes ( $\rho = 0.36$ ), weight conversations with the child ( $\rho = 0.24$ ) and comments about one's own weight and others' weight ( $\rho = 0.11$  each). Explicit anti-fat attitudes were most closely associated with comments about others' weight ( $\rho = 0.21$ ). Analysis of variance revealed significant differences in the frequency of weight conversations according to the child's weight status ( $F(3,401) = 55.91$ ;  $p < 0.001$ ), with much higher values among parents of children with obesity.

Five hierarchical regressions (Table 2) entered covariates in the first block and psychosocial predictors in the second. The model for weight conversations was the most robust (adjusted  $R^2 = 0.306$ ): the child's BMI percentile was the main predictor ( $\beta = 0.44$ ;  $p < 0.001$ ), followed by internalised bias ( $\beta = 0.25$ ;  $p < 0.001$ ) and the child's age ( $\beta = 0.18$ ). Experienced stigma had a small inverse direct effect ( $\beta = -0.09$ ;  $p = 0.049$ ). Comments about others' weight were predicted by anti-fat attitudes ( $\beta = 0.17$ ) and fat phobia ( $\beta = 0.11$ ), not by internalised bias. For general health conversations and diet or exercise comments, adding the psychosocial predictors did not improve the model ( $\Delta R^2 = 0.006$ ,  $p = 0.663$ , and  $\Delta R^2 = 0.014$ ,  $p = 0.243$ , respectively); these forms of communication were predicted by parental education ( $\beta = 0.20$ ) and self-rated health.

**Table 2. Summary of hierarchical regression analyses predicting parental communication styles (n = 384)**

| Dependent variable   | Adjusted $R^2$ | $\Delta R^2$ block 2 | Significant predictors ( $\beta$ )                                                                            |
|----------------------|----------------|----------------------|---------------------------------------------------------------------------------------------------------------|
| Weight conversations | 0.306***       | 0.048***             | Child BMI percentile (0.44***); child age (0.18***); internalised bias (0.25***); experienced stigma (-0.09*) |

| Dependent variable            | Adjusted R <sup>2</sup> | ΔR <sup>2</sup> block 2 | Significant predictors (β)                                                      |
|-------------------------------|-------------------------|-------------------------|---------------------------------------------------------------------------------|
| Comments about own weight     | 0.092***                | 0.023*                  | Parental education (0.20***); child age (0.21***); internalised bias (0.13*)    |
| Comments about others' weight | 0.084***                | 0.082***                | Parental BMI (-0.12*); anti-fat attitudes (0.17**); UMB-FAT (0.11*)             |
| Comments about diet/exercise  | 0.039**                 | 0.014                   | Parental education (0.20***)                                                    |
| Health conversations          | 0.045**                 | 0.006                   | Parental education (0.20***); self-rated health (0.15**); parental BMI (-0.12*) |

Note: \*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

Mediation analyses (PROCESS Model 4, 5,000 bootstrap samples, controlling for demographic and anthropometric covariates) were compatible with a model in which internalised bias mediates the relationship between experienced stigma and weight communication. The indirect effect was significant for weight conversations (0.105; 95% CI [0.048; 0.172]) and for comments about one's own weight (0.055; 95% CI [0.004; 0.116]). The parallel model for comments about others' weight showed no significant indirect effects through any mediator. The author specifies that the cross-sectional design allows only the plausibility of the mediation sequence to be assessed, not the confirmation of causality or temporal precedence.

### 5.3. Discussion and conclusions

The study provides the first systematic investigation in Romania of parental communication about weight and supports the sequence proposed in the conceptual model: experienced stigma is internalised and translates into weight-focused conversations, especially with children at higher BMI percentiles. A distinct pathway, one of social judgement, links explicit anti-fat attitudes to comments about others' weight. General health conversations remain independent of stigma and bias and are associated with higher parental education and better self-rated health, outlining a protective alternative. The implication for interventions is direct: addressing parents' internalised bias and reframing conversations about the body around health and functionality can cultivate supportive family dialogue. Limitations include the homogeneous sample (highly educated mothers, urban environment), self-report, data collection exclusively from parents and the absence of stratification by child age group.

## 6. The exploratory pilot study. Testing a non-formal educational intervention in schools

The pilot study, with unpublished data, tested between March and May 2023 the feasibility of a four-module educational intervention of 50 minutes each, delivered over three

weeks in three high schools in Cluj-Napoca. The materials were adapted from the curriculum of the European project Breaking Weight Bias, initially developed for health professionals, under the coordination of a registered dietitian with experience in community nutrition. The adaptation preserved scientific accuracy but adjusted language, examples and activities to the developmental level of adolescents and to Romanian realities.

**Table 3. Structure of the educational modules in the pilot study**

| Module | Title                                      | Main objectives                                                                                                          |
|--------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| 1      | Body image and self-esteem                 | Understanding body image; identifying external influences (social media); promoting acceptance of body diversity         |
| 2      | Understanding weight stigma                | Recognising weight bias; understanding adverse effects; developing empathy; promoting an inclusive environment           |
| 3      | Understanding and challenging diet culture | Defining diet culture; dismantling diet myths; critical thinking about media messages; a balanced relationship with food |
| 4      | Effects of diets and eating disorders      | Risks of restrictive diets; recognising ED signs (AN, BN, BED, ON); encouraging help-seeking                             |

## 6.1. Results

Of 205 enrolled adolescents, 67 completed both assessments, corresponding to a dropout rate of 67.3% and a retention rate of 32.7%, above the 30% threshold set as the feasibility criterion. The final sample had a mean age of 15.74 years, a balanced gender distribution and 76.1% urban participants. At baseline, 61% of participants were following or had followed a diet, but only 9% had consulted a specialist beforehand; more than 40% reported intensive exercise with the explicit aim of weight control; approximately 2% reported frequent purging behaviours.

McNemar tests and the marginal homogeneity test revealed significant changes in declarative knowledge after the intervention. The proportion understanding that caloric restriction can later lead to weight gain rose from 29.9% to 92.6% ( $p < 0.001$ ), with 62.7% of participants moving from a wrong to a correct answer. Recognition that weight is not maintained after a restrictive diet rose from 7.5% to 65.7%; the myth that sleeping under five hours is healthy fell from 72.3% to 20.0%; the intention to consult a specialist rose from 43.3% to 70.2% ( $p = 0.001$ ). For diet culture messages, the transitions were unanimous: the statement "health is directly proportional to weight" was identified as problematic by 0% of participants before and by 100% after the intervention, and the dichotomisation of foods into "good" and "bad" by 30.6% before and 100% after.

For the body neutrality dimension, agreement with the statement "My body has many functions, not just its appearance" rose from 46.3% to 86.6% ( $p < 0.001$ ), and visual self-perception, the only attitudinal variable with a significant difference, improved (median from 2 to 3 on a scale from 1 to 5;  $p < 0.001$ ). Correct identification of the definition of stigma rose from 48.5% to 97%. Subgroup analyses showed that girls progressed more often from disagreement to agreement about the body's functions, and that younger participants were those who most often abandoned the classification of foods into "good" and "bad".

## **6.2. Lessons and limitations**

The author presents the pilot as an exploratory stage, not as a demonstration of effectiveness. The 67.3% dropout rate is treated as the main lesson of the research: its analysis identified structural barriers (competition for adolescents' time, lack of institutional incentives), motivational barriers (absence of family involvement and of an attractive social component) and temporal barriers (the extended three-week structure, with multiple opportunities for interruption). Unstructured feedback from participants, facilitators and teachers documented conflicts with the school timetable and dependence on external facilitators, but also facilitating factors such as active school support and a non-judgemental communication style. The absence of a control group, the small final sample, the ad hoc questionnaire without psychometric validation, ceiling effects in some post-intervention measures and the lack of follow-up assessments limit any causal inference; the observed changes may reflect maturation, test sensitisation or external factors. The decision that followed was to condense the intervention to two modules and to develop family and peer-education components.

## **7. Scaling the educational interventions: the SPRINT and IMPACT programmes**

Building on the lessons of the pilot, the intervention was redesigned into two developmentally differentiated programmes and implemented between October 2024 and June 2025 in 13 counties of Romania and in the Republic of Moldova, through the volunteer network of the Wello Association. More than 20 facilitators, students and graduates in Nutrition and Dietetics, completed a standardised training of two three-hour sessions (theory and simulated practice) and received a facilitator guide, presentations and worksheets. Approximately 1,660 questionnaires were collected: 540 for SPRINT and 1,120 for IMPACT. The increase from 67

to approximately 1,660 questionnaires represents an almost 25-fold improvement in the capacity to mobilise and retain participants.

### **7.1. The SPRINT programme (ages 9 to 11)**

SPRINT (an acronym of the Romanian words for Health, Prevention, Respect, Inclusion, Nutrition, Transformation) adapted the principles of the intervention for pre-adolescents in grades 3 to 5, starting from the finding that attitudes about the body and food are formed in early developmental periods (Dakanalis et al., 2017). Abstract concepts (diet culture as a sociocultural system, the mechanisms of stigma, body neutrality) were translated into narratives and playful activities: guided discussions about "how our body helps us do wonderful things" and about "why it matters to be kind to our friends no matter how they look". The structure was condensed to two modules of 45 minutes each ("My body, my superpower!" and "Friends without prejudice"), and the assessment instrument was simplified and administered on paper under the supervision of teachers.

### **7.2. The IMPACT programme (ages 12 to 19)**

IMPACT kept the high school population of the pilot and integrated three main modifications: reduction to two modules of 50 minutes each, delivered within one to two weeks; replacement of the ad hoc questionnaire with three internationally validated instruments, the Adolescent Food Habits Checklist (AFHC), the Body Esteem Scale for Adolescents and Adults (BESAA) and the Social Media Disorder Scale (SMD), administered pre and post; and extension from three high schools to 13 counties. The content explicitly addressed diet culture, the mechanisms of stigma, the influence of social networks on body image and the link between food restriction and EDs, with strict safety protocols for an audience capable of deeply internalising messages about the body.

### **7.3. Implementation data and limitations**

The decentralised character of the implementation, without a real-time digital monitoring system, made it impossible to keep an exact record of unique participants and of retention rates between modules; informal facilitator feedback indicates estimated completion rates above 70%, compared with 32.7% in the pilot. Unstructured observations highlighted logistical barriers (inadequate rooms, overlaps with examinations, difficult coordination between the volunteers' schedule and administrative requirements), greater receptiveness in schools where teachers actively promoted the programme and additional technical difficulties in rural schools

(unstable internet, lack of devices). The author specifies that the validated instruments in IMPACT were not included to evaluate effectiveness, an objective that would require a control group and randomisation, but to demonstrate the feasibility of collecting validated psychometric data at large scale in the Romanian context. The collected data will be analysed in subsequent publications. Uncontrolled variability in facilitation quality, the absence of protocol fidelity assessment and the lack of follow-up measurements remain explicitly acknowledged limitations.

## 8. The roadmap for an integrated educational ecosystem

The implementation of SPRINT and IMPACT exposed five systemic limitations of stand-alone interventions, identified through SWOT analysis and informal observations collected from head teachers, teachers and facilitators: insufficient time (two 50-minute modules do not allow deep internalisation), neglect of the family context (although Study 2 showed the role of parental communication, the interventions did not integrate components for parents), dependence on external volunteers with limited availability, lack of systemic integration (programmes perceived as additions to an already overloaded curriculum) and geographic barriers (participation conditional on physical presence).

In response, the thesis maps eight complementary components, theoretically grounded in the socio-ecological model, complex adaptive systems theory and network effects in the diffusion of innovations. Table 4 summarises the components, the limitation each addresses and their implementation status.

**Table 4. Components of the educational ecosystem and their response to systemic limitations**

| Component           | Target population            | Addresses limitation     | Implementation status                           |
|---------------------|------------------------------|--------------------------|-------------------------------------------------|
| SPRINT              | Children aged 9 to 11        | (validated component)    | approx. 540 questionnaires, 13 counties         |
| IMPACT              | Adolescents aged 12 to 19    | (validated component)    | approx. 1,120 questionnaires, 13 counties       |
| Food Hackers        | Adolescents aged 12 to 19    | Continuity               | Implementation 2025, not evaluated              |
| Family at the Table | Parents                      | Family context           | Pilot October to November 2025                  |
| Peer education      | Adolescent educators         | Volunteers + integration | Pilot at Spectrum College Cluj                  |
| Teacher resources   | Teachers                     | Volunteers + integration | approx. 120 trained, approx. 50% implementation |
| Parent guide        | Adults, general public       | Family + access          | September 2025, national distribution           |
| Adolescent guide    | Young people, general public | Access                   | 2024, more than 6,000 downloads                 |

The transition from isolated programmes to a functioning ecosystem is supported by four theoretically proposed interdependence mechanisms: information feedback between components (IMPACT data guide the adaptation of Family at the Table, and parents' feedback informs how IMPACT addresses family communication), convergent multiple exposure to consistent messages at the individual, family and school levels, network effects (a trained teacher can deliver modules to hundreds of pupils annually, an adolescent educator can pass the concepts on) and sustainable scaling through a decentralised model that extends coverage without a proportional increase in resources.

The author explicitly delimits the contribution of the thesis from what remains to be demonstrated. Only SPRINT and IMPACT have been implemented and validated at national scale. The other six components have been developed conceptually or partially implemented, without a control group, without standardised effectiveness measures and without fidelity assessment: Food Hackers was evaluated only qualitatively through focus groups, Family at the Table had a single pilot edition, peer education a pilot in a single school, teacher resources have not been evaluated for impact, and for the digital guides the number of downloads is known, not actual use. The synergistic mechanisms remain theoretical and require validation through experimental comparisons between isolated components, integrated packages and the complete ecosystem, over a horizon of three to five years.

The recommendations for stakeholders follow from this positioning. For decision-makers (Ministry of Education, Ministry of Health, local authorities): integration of body neutrality and anti-stigma elements into the national health education curriculum, experimental evaluation of components, training and certification of facilitators, and incentives for integration into the permanent structures of schools. For schools: a minimum configuration (IMPACT, two modules) and an optimal one (IMPACT plus Family at the Table plus training of two or three teachers), with the digital guides as an accessible alternative for rural schools. For NGOs and funders: funding strategies for multi-level packages, with priority for rigorous evaluation of existing components and sustained investment in recruiting, training and retaining volunteers. For trainers and health professionals: an empathetic and non-judgemental style, concrete and local examples, active involvement through small-group exercises, and collaboration between school programmes and specialised services for early identification and referral.

## **9. Conclusions and original contribution of the thesis**

### **9.1. Answers to the research questions**

Question 1. In the studied sample, 26.5% of adolescents exceed the EAT-26 clinical cut-off, a prevalence comparable to Western Europe, which shows that EDs also affect Eastern European populations, where socio-economic transition and the globalisation of cultural influences have created an environment favourable to these disorders. The independent predictors were female gender and prior consultation of a specialist; eating and exercise behaviours did not predict risk, which indicates the predominantly psychosocial nature of risk factors and the need to reorient prevention beyond classical nutrition education.

Question 2. Internalised bias acts as a mediator between parents' stigma experiences and the frequency of weight-focused conversations with children. Parents adapt communication to the child's visible weight status. General health conversations follow a distinct, protective pathway linked to education and self-rated health, and explicit anti-fat attitudes are transmitted within the family through comments about others' weight.

Question 3. The pilot intervention can be implemented in the school environment and produces measurable improvements in declarative knowledge, but the 67.3% dropout rate, dependence on external facilitators and the absence of a control group turn the results into exploratory findings that grounded the subsequent optimisations.

Question 4. SPRINT and IMPACT demonstrate the feasibility of scaling through a structured training model, standardised materials and school partnerships, with 1,660 questionnaires from 13 counties collected by more than 20 volunteer facilitators without constant specialist supervision. Adaptation by age group was reported as relevant and acceptable.

Question 5. The diagnosis of limitations identified five structural barriers, the mapping produced eight components at varying stages of maturity, and the synergistic mechanisms were theoretically grounded, with empirical validation left as a future agenda.

### **9.2. Empirical contributions**

The thesis provides the first data on the prevalence of ED risk in a school sample from Romania, filling a gap noted in the Eastern European literature and indicating a more severe problem than anticipated. The identification of internalised bias as a significant mediator

(indirect effect 0.105; 95% CI [0.048; 0.172]) constitutes the first systematic investigation in the Romanian context of the mechanisms through which stigma is perpetuated across generations, with direct applicability to the design of parental interventions.

### **9.3. Methodological and implementation contributions**

Scaling from 3 schools and 67 participants to 13 counties and 1,660 questionnaires shows that educational interventions can be delivered through a decentralised model based on trained volunteers, without registered dietitians or clinical specialists at every session, a scarce resource in Romania and in other Eastern European countries. The successful administration of the AFHC, BESAA and SMD instruments to more than 1,100 adolescents confirms the feasibility of collecting psychometrically validated data in a decentralised educational system. Combining nutrition literacy with body neutrality, anti-stigma work and involvement of the family context represents a new approach for the Romanian context, acting simultaneously at the individual, family and school levels.

### **9.4. Practical contributions**

The two programmes implemented at national scale, the standardised materials, the network of trained facilitators and teachers, the digital guides for parents and adolescents and the roadmap for the integrated educational ecosystem constitute an operational base for future research and practice. The contribution lies in documenting an evidence-based development process, in which Studies 1 and 2 inform the design of the interventions, and in offering a replicable model of translational research for resource-limited systems.

## **10. Limitations of the research**

Interpretation of the results must be tempered by several limitations that the author explicitly acknowledges. The cross-sectional design of Studies 1 and 2 does not allow the direction of causality to be established: it cannot be claimed that high BMI causes EDs or that parental stigma precedes internalisation, only that the variables are associated at a given moment. The absence of control groups and randomisation for the pilot study, SPRINT and IMPACT means that the observed changes cannot be causally attributed to the interventions; the thesis documents the feasibility and scalability of implementation (implementation research), not clinical effectiveness.

Measurement validity is affected by self-reported anthropometric data, prone to underestimation of weight, and by the use of the EAT-26 without prior cross-cultural validation; its factor structure varies across cultures, and cut-offs developed in Western contexts may overestimate or underestimate the true prevalence in Romania. External validity is limited by convenience sampling, the predominantly urban origin of participants and the high educational level of parents (78.5% with higher education in Study 2); rural areas and families with precarious socio-economic status are under-represented, although SPRINT and IMPACT extended coverage to more diverse contexts.

Decentralised implementation through more than 20 facilitators, without direct supervision and without protocol fidelity assessment, introduced variability that cannot be quantified, which reduces the power to detect effects and complicates interpretation. The lack of follow-up measurements at 6, 12 and 24 months prevents evaluation of the sustainability of changes, and the absence of rigorous qualitative evaluations limits understanding of the mechanisms through which the interventions operate in participants' daily lives. Of the eight ecosystem components, six are at early stages, and the proposed synergistic mechanisms remain theoretical.

## **11. Future research directions**

The proposed agenda is structured on three time horizons. In the immediate term (0 to 18 months): analysis and publication of the SPRINT and IMPACT data with designs adequate for valid inference; cross-cultural validation of the EAT-26, AFHC, BESAA and SMD instruments on a nationally representative sample of more than 1,000 adolescents, with confirmatory factor analysis and sensitivity and specificity cut-offs established through comparison with clinical diagnosis; psychometric validation of the pilot's ad hoc questionnaire to obtain a Romanian instrument for assessing critical literacy about diets and stigma.

In the medium term (2 to 4 years): a school-level randomised trial, with approximately 30 schools allocated to three conditions (IMPACT alone, IMPACT combined with Family at the Table, waiting-list control group) and a target sample of approximately 600 adolescents, with measurements at 6, 12 and 24 months for ED risk, body esteem, eating behaviours and the quality of parental communication; rigorous evaluation of the early-stage components (Food Hackers, peer education, digital guides); a dyadic study of 300 parent-child pairs, analysed with

the Actor-Partner Interdependence Model, to overcome the limitation of collecting data exclusively from parents.

In the long term (5 to 7 years): a longitudinal cohort study of 500 adolescents followed for six years (ages 12 to 18), with latent growth curve modelling to identify risk trajectories and critical moments for intervention; a cost-effectiveness analysis comparing the costs of the integrated IMPACT plus Family at the Table package with the costs of treating established EDs, expressed in quality-adjusted life years; advanced implementation research within the RE-AIM framework (reach, real-world effectiveness, institutional adoption, fidelity, maintenance over 3 to 5 years).

The final positioning of the thesis is an acknowledged one: the research documents for the first time in the Romanian context the potential magnitude of ED risk among adolescents, identifies a family mechanism of vulnerability transmission and demonstrates the feasibility of developing and scaling educational interventions under resource-limited conditions. It does not claim to prove effectiveness. What it leaves behind is a methodological base, 1,660 questionnaires, standardised materials, a network of trained facilitators and teachers, on which rigorous experimental evaluation, validation on representative samples and longitudinal monitoring will be able to build, with inter-institutional collaboration and sustained funding.

## **Selected references**

The list contains the sources cited in this summary. The full reference list of the thesis comprises more than 300 titles and is available in the thesis, pages 168 onwards.

- Berge, J. M., MacLehose, R. F., Loth, K. A., Eisenberg, M. E., Fulkerson, J. A., & Neumark-Sztainer, D. (2015). Parent-adolescent conversations about eating, physical activity and weight: prevalence across sociodemographic characteristics and associations with adolescent weight and weight-related behaviors. *Journal of Behavioral Medicine*, 38(1), 122-135.
- Bristow, C., Meurer, C., Simmonds, J., & Snell, T. (2020). Anti-obesity public health messages and risk factors for disordered eating: a systematic review. *Health Promotion International*, 35(6). <https://doi.org/10.1093/heapro/daaa018>
- Bristow, C., Simmonds, J., Allen, K. A., & Mclean, L. (2023). 'It makes you not want to eat': Perceptions of anti-obesity public health campaigns in individuals diagnosed with an eating disorder. *European Eating Disorders Review*, 31(1), 166-177. <https://doi.org/10.1002/erv.2950>
- Brumboiu, M. I., Cazacu, I., Zunquin, G., Manole, F., Mogosan, C. I., Porrovecchio, A., Peze, T., Tavolacci, M. P., & Ladner, J. (2018). Nutritional status and eating disorders among medical students from the Cluj-Napoca University centre. *Clujul Medical*, 91(4), 414-421. <https://doi.org/10.15386/cjmed-1018>

- Brytek-Matera, A. (2023). Prevalence of anorexia nervosa and bulimia nervosa in Eastern Europe. *Psychiatria i Psychologia Kliniczna*, 23(4), 332-337. <https://doi.org/10.15557/PiPK.2023.0041>
- Dakanalis, A., Clerici, M., Bartoli, F., Caslini, M., Crocamo, C., Riva, G., & Carra, G. (2017). Risk and maintenance factors for young women's DSM-5 eating disorders. *Archives of Women's Mental Health*, 20(6), 721-731. <https://doi.org/10.1007/s00737-017-0761-6>
- Dunker, K. L. L., Carvalho, P. H. B. d., & Amaral, A. C. S. (2023). Eating disorders prevention programs in Latin American countries: A systematic review. *International Journal of Eating Disorders*, 56(4). <https://doi.org/10.1002/eat.23916>
- Hayes, A. F. (n.d.). The PROCESS macro for SPSS, SAS, and R. <https://www.processmacro.org/index.html>
- Hu, L. t., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Ispas, A. G., Forray, A. I., Lacurezeanu, A., Petreuş, D., Gavrilăş, L. I., & Cherecheş, R. M. (2025a). Eating Disorder Risk Among Adolescents: The Influence of Dietary Patterns, Physical Activity, and BMI. *Nutrients*, 17(6), 1067. <https://doi.org/10.3390/nu17061067>
- Ispas, A. G., Forray, A. I., Lacurezeanu, A., Petreuş, D., Gavrilăş, L. I., & Cherecheş, R. M. (2025b). Talking About Weight with Children: Associations with Parental Stigma, Bias, Attitudes, and Child Weight Status. *Nutrients*, 17(18), 2920. <https://doi.org/10.3390/nu17182920>
- Launius, K. N., & Lydecker, J. A. (2024). Early and current experiences of weight-based discrimination are associated with eating psychopathology, depression, and poor general health in adulthood. *Stigma and Health*, 11(1), 102-109. <https://doi.org/10.1037/sah0000527>
- Laxer, R. E., Dubin, J. A., Brownson, R. C., Cooke, M., Chaurasia, A., & Leatherdale, S. T. (2019). Noncomprehensive and Intermittent Obesity-Related School Programs and Policies May Not Work: Evidence from the COMPASS Study. *Journal of School Health*, 89(10). <https://doi.org/10.1111/josh.12820>
- López-Gil, J. F., García-Hermoso, A., Smith, L., Firth, J., Trott, M., Mesas, A. E., Jiménez-López, E., Gutiérrez-Espinoza, H., Tárraga-López, P. J., & Victoria-Montesinos, D. (2023). Global Proportion of Disordered Eating in Children and Adolescents: A Systematic Review and Meta-analysis. *JAMA Pediatrics*, 177(4).
- Munguia, S. J., & Forbush, K. T. (2023). Development of an mHealth Functionality Focused Body Image Intervention for Latinx Women. *Journal of Clinical and Translational Science*, 7(s1), 54. <https://doi.org/10.1017/cts.2023.254>
- Pearl, R. L., & Puhl, R. M. (2014). Measuring internalized weight attitudes across body weight categories: validation of the modified weight bias internalization scale. *Body Image*, 11(1), 89-92. <https://doi.org/10.1016/j.bodyim.2013.09.005>
- Puhl, R. M., & Heuer, C. A. (2009). The stigma of obesity: a review and update. *Obesity*, 17(5). <https://doi.org/10.1038/oby.2008.636>
- Puhl, R. M., Lessard, L. M., Larson, N., Eisenberg, M. E., & Neumark-Sztainer, D. (2020). Weight Stigma as a Predictor of Distress and Maladaptive Eating Behaviors During COVID-19: Longitudinal Findings From the EAT Study. *Annals of Behavioral Medicine*, 54(10). <https://doi.org/10.1093/abm/kaaa077>

- Sadownik, A. R. (2023). Bronfenbrenner: Ecology of Human Development in Ecology of Collaboration. In (Re)theorising More-than-parental Involvement in Early Childhood Education and Care (pp. 83-95). [https://doi.org/10.1007/978-3-031-38762-3\\_4](https://doi.org/10.1007/978-3-031-38762-3_4)
- Salvați Copiii România. (2026). Educație pentru sănătate. <https://www.salvaticopiii.ro/ce-facem/sanatate/educatie-pentru-sanatate>
- Stabouli, S., Erdine, S., Suurorg, L., Jankauskienė, A., & Lurbe, E. (2021). Obesity and Eating Disorders in Children and Adolescents: The Bidirectional Link. *Nutrients*, 13(12). <https://doi.org/10.3390/nu13124321>
- Sundgot-Borgen, C., Bratland-Sanda, S., Engen, K. M. E., Pettersen, G., Friborg, O., Torstveit, M. K., Kolle, E., Piran, N., Sundgot-Borgen, J., & Rosenvinge, J. H. (2018). The Norwegian healthy body image programme: study protocol for a randomized controlled school-based intervention to promote positive body image and prevent disordered eating among Norwegian high school students. *BMC Psychology*, 6(1), 8. <https://doi.org/10.1186/s40359-018-0221-8>
- Szabo, K., Czegledi, E., Babusa, B., Szumska, I., Tury, F., Sandor, I., & Bauer, S. (2015). The European Initiative ProYouth for the promotion of mental health and the prevention of eating disorders screening results in Hungary. *European Eating Disorders Review*, 23(2), 139-146. <https://doi.org/10.1002/erv.2345>
- Tomiyama, A. J., Carr, D., Granberg, E. M., Major, B., Robinson, E., Sutin, A. R., & Brewis, A. (2018). How and why weight stigma drives the obesity 'epidemic' and harms health. *BMC Medicine*, 16(1). <https://doi.org/10.1186/s12916-018-1116-5>
- Turner, S., & D'Arpino, E. (2025). Opportunities for Policy Progress: The Role of Schools in Minimizing, Mitigating, or Perpetuating Weight-Based Stigma. *Journal of School Health*, 95(7), 560-565. <https://doi.org/10.1111/josh.70034>
- WHO. (2025). Obesity and overweight. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>