

UNIVERSITY OF MEDICINE, PHARMACY, SCIENCE AND TECHNOLOGY "GEORGE EMIL PALADE" OF TÂRGU MUREȘ

SCHOOL OF DOCTORAL STUDIES

ABSTRACT OF THE HABILITATION THESIS

"HOLISTIC PERSPECTIVES ON MENTAL HEALTH: THE ROLE OF ADOLESCENT SOMATIC HEALTH IN ADULT MENTAL WELL-BEING"

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The holistic perspective on mental health, particularly in adolescents and adults, integrates metabolic dysfunction and early digestive disorders as significant factors influencing the psychiatric well-being of these categories of patients. This habilitation thesis synthesizes the results of our research to elucidate the complex interplay between these two elements.

Adolescents are particularly vulnerable to mental health disorders; over half of all mental disorders begin by the age of 14, and many remain untreated into adulthood. Adolescents with T1DM often have higher levels of anxiety and depression, which are linked to poor metabolic control and behavioral difficulties. This relationship suggests that metabolic health may directly influence psychological well-being, as adolescents with better glycemic control tend to report fewer emotional and behavioral problems. Excessive sugar intake during developmental periods can lead to cognitive deficits and increased vulnerability to psychiatric disorders. Gastrointestinal problems have been linked to psychological distress, and evidence suggests that the gut-brain axis plays a crucial role in mental health outcomes. In addition, social determinants of mental health (family dynamics and socioeconomic status) have a significant impact on both metabolic health and psychological outcomes.

Family support and the quality of parent-child relationships are vital for adolescents' mental health, influencing their ability to cope with stress and to seek help when needed.

The present habilitation thesis is synthesized along three main research directions:

1. Psychiatric disorders in patients with metabolic dysfunction, especially among adults and adolescents.



These conditions show a complex biological, psychological, and social interplay. The following aspects are key to understanding this relationship:

- a) The prevalence of mental disorders among adolescents and adults with metabolic dysfunctions is alarmingly high. It can have a serious impact on their educational achievement and overall quality of life.
- b) Impact of metabolic syndrome (MetS) on mental health – MetS is associated with an increased risk of developing mental health problems, and having higher rates of anxiety and depressive disorders, probably due to physiological stressors related to metabolic dysfunction, such as insulin resistance and inflammation.
- c) Somatic complications as predictors of mental disorders – the presence of somatic complaints in childhood has been linked to an increased risk of anxiety and depression, indicating that physical health and mental health are closely linked.
- d) Comorbidity of disorders – adolescents with mental health disorders are more likely to develop metabolic syndrome and vice versa, creating a vicious circle that complicates treatment. Anxiety and mood disorders can exacerbate metabolic problems, leading to a decline in physical health, which in turn can worsen mental health outcomes.
- e) Socioeconomic and developmental implications – individuals with untreated mental health problems often face challenges in social relationships, academic performance, and employment opportunities, leading to long-term socio-economic disadvantage. Additionally, the developmental trajectory of adolescents with mental disorders is often negatively impacted, resulting in increased risks for substance abuse and other maladaptive behaviors.

Understanding the interaction between mental disorders and metabolic dysfunction is essential for the development of effective treatment strategies. The high prevalence of mental health problems, the impact of MetS, the predictive nature of somatic complaints, the comorbidity of disorders, and the socioeconomic implications highlight the need for a comprehensive approach to care that integrates mental and physical health services.

- 2. Management of ante/postpartum psychiatric disorders - is a multifactorial challenge that encompasses various aspects, including prevalence, risk factors, screening, treatment accessibility, and impact of social support. These elements are essential for developing effective interventions that can improve maternal mental health outcomes.

Monitoring mental health during pregnancy is essential and identifying risk factors can facilitate early interventions. Through studies developed in this direction, we have advocated for the implementation of screening and psychological support programs in antenatal care to address the mental health needs of pregnant women, especially those in disadvantaged situations.

- 3. Early digestive disorders (onset in children) with impact on psycho-behavioral development in young adulthood: the association between chronic monophonia-induced stress and gastrointestinal



pathology in children; respectively, the association between childhood onset of inflammatory bowel disease and psychiatric comorbidities in adulthood.

Early digestive disorders in children can have a significant impact on psycho-behavioral development in young adults, particularly through mechanisms involving chronic stress and gastrointestinal pathology. The relationship between gastrointestinal problems and psychological outcomes is multifactorial, involving both direct physiological effects and indirect psychosocial factors. A major concern in pediatric populations is the prevalence of functional gastrointestinal disorders, which include conditions such as irritable bowel syndrome (IBS) and functional dyspepsia. These disorders are often exacerbated by chronic psychological stress, which has been identified as a significant risk factor for their development. The interaction between gastrointestinal motility and psychological stress is particularly pronounced in children with autonomic dysfunction, where a slowing of motor function is frequently observed, a dysfunction that contributes to emotional distress and may persist into adulthood, affecting mental health outcomes. Children diagnosed with inflammatory bowel disease (IBD) are at increased risk of developing psychiatric comorbidities in adulthood, including anxiety and depression. The psychosocial environment also significantly influences the outcomes of children with digestive disorders. The interplay between biological, psychological, and social factors underlines the need for integrated approaches in managing these conditions to improve both gastrointestinal health and mental well-being.

4. Serotonin and neuroinflammation in depression: new perspectives on pathophysiology and diagnosis - discusses on the one hand the role of serum serotonin levels as a predictive marker for depression in patients with DZT2, presenting a nuanced perspective that questions previous hypotheses and suggests new avenues of treatment and research, and on the other hand, the bidirectional relationship between neuroinflammation and depression is highlighted, highlighting the mechanisms by which neuroinflammation can induce depressive-like behaviors

