

## ABSTRACT

The present Habilitation thesis presents a part of my research activity after I sustained the PhD Thesis "Secondary arterial hypertension in children" at the University of Medicine and Pharmacy Târgu Mureș in June 2010 and confirmed by The Ministry of Education, Research and Innovation, Order no. 4542/27.08.2010.

**The first section** of the habilitation thesis includes in the first part a synthesis of my professional, academic, and scientific trajectory, followed by 6 chapters detailing the research directions addressed during the postdoctoral period (June 2010 to present).

**Professional activity.** I am a pediatric primary physician (Order M.S. 1044/02.09.2013) and pediatric nephrology primary physician (Order M.S. 18441/26.09.2019) and I hold 3 competencies (general ultrasound, pediatric nephrology, and endocrinology). I have completed specialty internships in the country and abroad (Budapest, Salzburg).

Since 2017 I have been a member of national committees of the Ministry of Health, as follows: 2017- March 2019 - the National Pediatric Committee, and since March 2019- the National Paediatric Nephrology Committee.

**Academic activity.** Currently, I am university **associate professor** in the discipline of Pediatrics 1 at the Faculty of Medicine - UMFST "GE Palade" Targu Mures. after having gone through all stages of my academic career, from the position of junior assistant (2001), university assistant (2005), lecturer (2013), up to the current position (2016-present).

I am a member of the PhD student guidance committee for 11 PhD students. I have participated in admission and licensing examinations, member of competition committees for academic positions and promotions within UMFST Tg. Mures. I was a member of examination boards for the acquisition of the title of specialist and primary physician (pediatrics, nephrology, and pediatric nephrology).

**The scientific, postdoctoral activity**, consists of 38 articles in ISI journals with IF:19 as the main author (4 articles - in the Q1 quartile) and 19 as co-author; 3 articles in ISI journals without IF; 29 articles in BDI journals. The publications in ISI-indexed journals, 56 in number, had a scientific impact, accumulating a number of 346 WOS citations (without self-citation) and a Hirsch index, **h-index** of **12** in WOS, h-index of 12 in Scopus and h-index of 15 in Google Scholar Database. The cumulative impact factor (**FCiAP**) is **54.355**.

I have been involved in 5 national research projects/grants won by competition (**3 as project director**: 1- national project, 2- internal grant UMF and **member in 2 projects**: 1 national project and 1 internal grant UMF).

I have contributed to the publication of specialty books and chapters in collective volumes, as well as guided practical work for students. I have coordinated 15 diploma theses. I have also coordinated papers of medical residents and students presented at national/international congresses and I have been involved in the organization of scientific events.

The activity research presented in the second part of the first chapter of this thesis was conducted on the following topics:

The first topic is related to genetics in pediatric practice, research that I started during my doctoral period.

The second topic regarding kidney disorders is the main part of the habilitation thesis and is sustained by 12 publications in the list with relevant publications and a research project (CIGS, contract no 29/09.12.2013). The relevance of the scientific activity and the recognition of the national and international activity in this field is emphasized by the publications in famous journals, mostly in cooperation with national researchers as well as the number of WOS citations (51).

Another research activity was linked to rare disorders. My scientific work performed and dealing with this theme is represented by 3 articles published in journals with IF (Muntean C et al *Front Pediatr.* 2022; Muntean C et al *Int J Environ Res Public Health.* 2022; Duicu C et al *Exp Ther Med.* 2021) (11 WOS citations).

An interesting direction of research was in the field of nutritional disorders in children, such as obesity and malnutrition. My scientific work related to this topic is represented by articles published in journals with IF (Muntean C et al *Front Public Health.* 2022; Mărginean CO et al *Medicine* 2016; Duicu C et al *Medicine (Baltimore).* 2016; Mărginean OC et al. *Eur J Pediatr.* 2014; Mărginean CO, et al. *J Pediatr Gastroenterol Nutr.* 2014; Mărginean O et al, *Eur J Nutr.* 2014). Important support for this topic was given by a postdoctoral fellowship and a research project as team member (CIGS-CC contract no. 17802/1 /22.12.2015).

An additional research topic was the genetic background in children with cardiac disorders, described in Chapter 5. Part of this activity is sustained by the 3 publications (Togănel R et al. *Rev Romana Med Lab.* 2013; Duicu C et al *AMM* 2011, etc) and by a national project- as a team member (MAMI, no 41-042/2007, PNCD II, 2007-2010).

The scientific activity in the field of “Malignant hematology disorders- genetic studies” is sustained by 9 publications (Bănescu C et al *Int. J. Mol. Sci.* 2023; Bănescu C et al. *J. Pers. Med.* 2022; Tripon F et al *Arch Med Sci.* 2021 etc), and the involvement in an internal grant UMF- as project manager (CIGCS-CC contract nr. 15609/13/29.12.2017).

The priority domains I wish to develop and my connected goals are outlined in **the second section**. I present my ongoing goals for my academic career while remembering how important it is to guide the future generation and help them develop into reputable professionals. In addition, I discuss my goals for the future of my clinical practice which include expanding the specialty of pediatric nephrology through the use of novel diagnostic and assessment methods as well as new therapeutic approaches and therapies.

A brief discussion of scientific development directions is included in the previous section, emphasizing the need to increase the national and international awareness of both my academic community and myself.

I also intend to continue my scientific activity, insisting on increasing my personal visibility, as well as that of the academic community to which I belong, both nationally and internationally.

Also with this aim, I support interdisciplinarity in research and I intend to continue and extend my collaboration with researchers from other clinical fields related to pediatrics (genetics, urology/surgery, medical imaging, cardiology, rheumatology, etc) and preclinical disciplines (pathophysiology, morphopathology, pharmacology, etc).

The thesis ends with the third section, the reference list that includes over 190 titles relevant to the thesis.