



**ÓBUDA UNIVERSITY**  
HECON – Health Economics  
Research Center

# 2022

**HECON**

Health Economics Research Centre

University Research and Innovation  
Centre (EKIK), Óbuda University,  
Budapest

Summary of educational, scientific  
and public activities in **2022.**

Dear Colleagues!

We would like to thank everyone with whom we had the opportunity to work together in 2022 in various national and international research projects, with whom we wrote articles, who presented papers, contributed to our conferences and courses, were present, and to all those who helped and supported our work in various ways!

We are closing a successful year.

In 2022, we published (or had accepted for publication) 10 scientific articles in prestigious English language journals with co-authors, of which 5 publications were rated D1, 3 publications Q1, 1 publication Q2 and 1 publication Q3. These publications represent a total of **38.105 impact factors**.

We collaborated with eleven PhD students in 2022, of which one student defended his/her thesis. We collaborated with 13 international and national academic advisory professors.

We are coordinating and researching in **two H2020 and two National Research Development and Innovation Fund-funded excellence programmes**.

In the field of **medical devices and the digitalisation of the healthcare industry**, we have continued our previously initiated research (clinical evidence assessment), successfully applied for new research projects, published internationally, organised conferences and added new undergraduate and PhD courses to our teaching materials, in line with the requirements of the new Medical Device Regulation (MDR).

You will find our detailed report in the continuation.

We wish you a Merry Christmas and a prosperous New Year!

13th of December, 2022.

Prof. László Gulácsi, DSc  
professor,  
vice rector for research

Prof. Márta Péntek, DSc  
professor

Dr. Zsombor Zrubka, PhD  
Associate professor,  
Head of the research cent

Hossein Motahari-Nezhad, MSc  
R&D associate,  
PhD student

Dr. Áron Hölgyesi  
R&D associate,  
PhD student





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## Colleagues

**Dr. Zsombor Zrubka** PhD, Associate Professor; Head of Research Centre, Health Economics Research Centre (HECON); Researcher, **IF: 127,518**. Total number of MTMT citations: 387, of which **independent citations: 287, Hirsch index: 9**. Google Scholar citations: 465 and Hirsch index: 12. Over the last 5 years (2018-2022): Q1=26 from which D1=9, Q2=5.

**Prof. Márta Péntek** dr., DSc, Professor; Centre for Health Economics (HECON), IF: 435,458, total number of MTMT citations: 3519, of which **independent citations: 2405, Hirsch index: 30**. Google Scholar citations: 4476 and Hirsch index: 38. Over the last 5 years (2018-2022): Q1=46 from which D1=33, Q2=7.

**Prof. László Gulácsi** dr., DSc Professor; Óbuda University, Vice Rector for Research, Research Centre for Health Economics (HECON); **IF: 389,612**.. Total number of MTMT citations: 4344, , of which **independent citations: 2989, Hirsch index 34**. Google Scholar Citations: 5879, Hirsch index: 44. Over the last 5 years (2018-2022): Q1=44 from which D1=31, Q2=7.

**Hossein Motahari-Nezhad**, MSc; PhD student, Corvinus University of Budapest, Doctoral School of Economics; researcher, Health Economics Research Centre (HECON), **IF: 5,833**. Total number of MTMT citations: 3, of which **independent citations: 0, Hirsch index 1**. Google Scholar: citations: 12, Hirsch index: 2. Over the last 5 years (2018-2022): Q1=2, Q2=1.

**Dr. Hölgyesi Áron**; PhD student, Semmelweis University, Doctoral School of Molecular Medicine; researcher, Centre for Health Economics (HECON), **IF: 14,152**. Total number of MTMT citations 43, of which **independent citations: 37, Hirsch index 1**. Google Scholar: Citations: 55, Hirsch index: 1. Over the last 5 years (2018-2022): Q1=1, Q2=2.

## Scientific Advisory Board members

**Prof. Niek Klazinga**, senior policy advisor on Quality of Care, OECD Paris, & Professor Department of Public Health, University of Amsterdam, The Netherlands

**Prof. Imre Boncz**, Professor, director, Institute of Health Insurance, University of Pécs, Pécs; Hungary

**Prof. August Oesterle**, Department of Social Policy, University of Economics and Business, Vienna, Austria

**Prof. Werner Brouwer**, Professor of Health Economics, Erasmus School of Health Policy & Management (ESHPM) and Dean of ESHPM, University of Rotterdam, Rotterdam, The Netherlands

**Prof. Milena Pavlova**, Department of Health Service Research, School for Public Health and Primary Care, Faculty of Health, Medicine and Life Sciences, Maastricht University, Maastricht, The Netherlands

**Prof. Dominik Golicki**, Department of Experimental & Clinical Pharmacology, Medical University of Warsaw, Warsaw, Poland



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**Prof. Job van Exel**, Professor of Economics & Values at the Erasmus School of Economics (ESE) and the Erasmus School of Health Policy & Management (ESHPM) of Erasmus University Rotterdam, Head of the Department of Health Economics, Erasmus University Rotterdam, Rotterdam, The Netherlands, Honorary Professor, Óbuda University, Budapest, Hungary

**Prof. Beatriz González López-Valcárcel**, Professor of Quantitative Methods in Economics, University of Las Palmas, Spain

**Prof. Wolfgang Greiner**, Professor for health economics and health care management at the faculty of Public Health, University of Bielefeld, Germany

**Valentina Prevolnik Rupel, PhD**, Institute of Economic Research, Ljubljana, Slovenia

**Kincses Áron, PhD**, vice president, Hungarian Central Statistical Office, Budapest, Honorary Professor, Óbuda University, Budapest, Hungary

**Baji Petra, PhD**, Senior Research Associate in Health Economics, University of Bristol, United Kingdom

**Balázs György**, EMKI-cert Medical Device Certification Ltd., Budapest, Hungary

## Publication activity

### Scientific publications

In 2022, 10 scientific articles were published or accepted for publication in peer-reviewed journals in English with co-authors, representing a total of **38,105 impact factors**. Of these, **5 publications are classified as D1, 3 publications as Q1, 1 publication as Q2 and 1 publication as Q3**.

We published **10 conference abstracts in English** and **2 citable abstracts** (conference posters) **in Hungarian**.

We gave **12 presentations in English** at international conferences, 1 of which was given at the Central European University Visibility, Excellence and Ranking Forum, that was organized by us.

<https://uni-obuda.hu/central-european-university-visibility-excellence-and-ranking-forum/>

In addition to this, we also gave **1 Hungarian conference presentation**.



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## Recognitions

### **Prof. Márta Péntek:**

- Doctor of the Hungarian Academy of Sciences, 7th of April, 2020
- President: Hungarian Economic Association Health Economics Section
- Member (from 2022): European Alliance of Associations for Rheumatology (EULAR), Research Committee, Subcommittee on Epidemiology and Public Health Research
- Member (from February, 2021): EuroQol Group (<http://www.euroqol.org>), EQ-HWB Special Interest Group
- "Most cited researcher of the year" award (Óbuda University, 2021)
- European League Against Rheumatism (EULAR) Annual European Congress of Rheumatology 2021: invited reviewer in the international abstract review panel

### **Dr. Zsombor Zrubka:**

- Secretary of the Scientific Council of Óbuda University since November, 2020. Head of HECON research center.
- Co-chair: ISPOR Digital Health Special Interest Group Scientific Project
- Member: IEEE Standards Association Virtual Care Lexicon Workstream
- 2nd place: European Doctoral Programmes Association in Management & Business Administration EDAMBA 2021 Thesis Competition

## Editorial Board memberships

### **Prof. László Gulácsi**

2002 - European Journal of Health Economics, member, Editorial Board, IF-2020: 3,689, Scimago D1

2002 - Orvosi Hetilap (Hungarian Medical Journal) columnist IF-2020: 0,41, Scimago Q3

2009 - Health - Academy, member, International and Domestic Editorial Advisory Board

2011 - Society and Economy, member, Editorial Board, Scimago Q3

2013 - Value in Health Regional Issues, member, Editorial Advisory Board, Scimago Q2

2015 - Clinical Dermatology Open Access Journal, Associate Editorial Board member

### **Prof. Márta Péntek**

2013 - Immunológiai Szemle (Immunology Review), member of the editorial board

2014 - Clinicoeconomics and Outcomes Research, member of the editorial board; Scimago (Economics, Econometrics and Finance): Q1

2016 - Frontiers in Public Health – Health Economics Section, (IF: 2,483) review editor; Scimago Q2

### **Dr. Zsombor Zrubka**

2021 Frontiers in Health Services Cost and Resource Allocation section, review editor

2022 PLoS ONE, academic editor



## Educational activities, talent management, PhD training

### Subjects (BSc, MSc), education and training – Óbuda University

As of the first semester of the academic year 2020/21, at the John von Neumann Faculty of Informatics at Óbuda University we started teaching health economics in English for Hungarian and foreign BSc III and MSC students: **Introduction to health economics** (subject code: NBVBE1HBNE) Responsible for the subject: **Dr. Zsombor Zrubka**

As of the second semester of the academic year 2020/21, at the John von Neumann Faculty of Informatics at Óbuda University we started teaching **The Economics of Health Technology Innovation** (subject code: NBVEH0EBNE) in English for Hungarian and foreign BSc III and MSC students. Responsible for the subject: **Dr. Zsombor Zrubka**

In cooperation with the Hungarian Central Statistical Office, a new e-learning course entitled "**Social and Economic Statistics - A Century and a Half of Statistics in the Carpathian Basin**" has been launched in Hungarian at the John von Neumann Faculty of Informatics at Óbuda University, which is also part of the K-MOOC course (Course supervisor: **Prof. Márta Péntek**)

### Successful PhD defense in 2022

**Óscar Brito Fernandes, MSc (IF: 36,652)** Amsterdam University, Academic MedicalCenter, Graduate School of Medical Sciences, successful defense on the 28th of September in 2022; supervisors: Niek S. Klazinga, Márta Péntek, Petra Baji, Dionne Kringos

### PhD students

**Hossein Motahari Nezhad (IF: 5,833)** Corvinus University of Budapest, Doctoral School of Business and Management. Successful PhD home defense on 2nd November 2022. The title of the thesis: Methodological challenges in the evidence synthesis of health outcomes of digital health technologies. Supervisor: Zsombor Zrubka PhD

**Áron Hölgyesi (IF: 14,152);** Semmelweis University, Doctoral School of Molecular Medicine, supervisor: Prof. Márta Péntek

**Hana Al-Abdulkarim,** Óbuda University, Doctoral School of Applied Informatics and Applied Mathematics, supervisor: Dr. Zsombor Zrubka

**Békésy Mariann,** Óbuda University, Doctoral School of Applied Informatics and Applied Mathematics, supervisor: Prof. László Gulácsi

**Czere János,** Óbuda University, Doctoral School of Applied Informatics and Applied Mathematics, supervisor: Prof. Márta Péntek

**Meriem Fgaier,** Óbuda University, Doctoral School of Applied Informatics and Applied Mathematics, supervisor: Dr. Zsombor Zrubka, Prof. Márta Péntek



**Tóth Barbara**, Óbuda University, Doctoral School of Applied Informatics and Applied Mathematics, supervisor: Dr. Zsombor Zrubka, Dr. Péter Galambos

**Tripó Johanna**, Óbuda University, Doctoral School of Applied Informatics and Applied Mathematics, supervisor: Prof. Márta Péntek, Prof. József Fogarasi

**Debrenti Zsolt Gyula**, Óbuda University, Doctoral School of Applied Informatics and Applied Mathematics, supervisor: Prof. László Gulácsi, Prof. József Fogarasi

**Nhlanhla Nkwanyana**, Óbuda University, Doctoral School of Applied Informatics and Applied Mathematics, supervisor: Dr. Zsombor Zrubka

## **PhD committees, reviews 2022**

### **Prof. László Gulácsi**

Zétény Norbert Sárka: Employee performance appraisal systems in Hungarian hospitals. (A dolgozói teljesítményértékelési rendszerek a magyar kórházakban.)

Review of the draft of the doctoral thesis.

Semmelweis University Doctoral School of Mental Health Sciences

Supervisor: Prof. Gyula Bakacsi (DSc), professor, member of the Hungarian Academy of Sciences (MTA)

1st September 2022 9.00-11.30 NET, Nagyvárad tér 4. fsz 81, Room 81

## **Doctoral (PhD) training, courses**

**Semmelweis University Doctoral School of Clinical Medicine (Prof. Márta Péntek, Prof. László Gulácsi):** Health economics; Science-based health and health technology analysis.

**Óbuda University Doctoral School of Applied Informatics and Applied Mathematics (Prof. Márta Péntek)** „Synthesis of scientific evidence in healthcare: a systematic review and evaluation of the literature” in Hungarian and English

**Óbuda University Doctoral School of Applied Informatics and Applied Mathematics (Prof. Márta Péntek)** „Measurement and valuation of health gains” in Hungarian and English

**Óbuda University Doctoral School of Applied Informatics and Applied Mathematics (Prof. László Gulácsi)** „Costing in health care” in Hungarian and English

**Óbuda University Doctoral School of Applied Informatics and Applied Mathematics (Prof. László Gulácsi)** „Methods and practice of health-technology assessment (HTA) for medicines and medical devices” in Hungarian and English

**Óbuda University Doctoral School of Applied Informatics and Applied Mathematics (Dr. Zsombor Zrubka)** „Quantitative synthesis of scientific evidence related to health, meta-analysis” in Hungarian and English

**Óbuda University Doctoral School of Applied Informatics and Applied Mathematics (Dr. Zsombor Zrubka)** „Health economic modelling” in Hungarian and English





## **Special Translational PhD Programme on Systematic Literature Review**

A total of 6 PhD students and their supervisors participated in the programme. The total duration was 12 months (2 semesters):

- monthly consultations with HECON staff and external experts
- 2 workshops were held for all participants
- 2 research reports were produced as part of a manuscript linked to a systematic literature review

As part of the programme, HECON staff held a total of 4 PhD courses over the 2 semesters:

- „Synthesis of scientific evidence in healthcare: a systematic review and evaluation of the literature” in English and Hungarian – **Prof. Márta Péntek**
- „Measurement and valuation of health gains” in English and Hungarian – **Prof. Márta Péntek Márta, Dr. Zsombor Zrubka**
- „Quantitative synthesis of scientific evidence related to health, meta-analysis” in English and Hungarian – **Dr. Zsombor Zrubka**
- „Methods and practice of health-technology assessment (HTA) for medicines and medical devices” in English – **Prof. László Gulácsi, Dr. Zsombor Zrubka**

During the programme, PhD students have the opportunity to acquire knowledge, experience, and methodological skills related to systematic literature reviews, to acquire the basics of systematic thinking and structured working, and to better understand the design of clinical trials. The programme also helps consciously plan and ground scientific research work during the PhD training.

The work has resulted in a total of 8 published conference papers this year, one manuscript has been submitted and several manuscripts are in preparation.

HECON staff members involved in the programme (course leadership, PhD supervision): **Prof. Márta Péntek, Prof. László Gulácsi, Dr. Zsombor Zrubka**

The list of participating PhD students can be found in Annex 2.

## **International and domestic conferences**

**60th Annual Meeting of the Hungarian Economic Society.** Health Economics Section: Innovation Management in the Health Industry - round table discussion (**Prof. László Gulácsi, Dr. Zsombor Zrubka, Prof. Márta Péntek, Dr. István Szabó**)  
<https://www.youtube.com/watch?v=UrXsWeTzlb4&t=238s>

**Central European University Visibility, Excellence and Ranking Forum.** November 4th, 2022 Óbuda University of Budapest. Conference chair: **Prof. László Gulácsi**, speaker: **Barbara Tóth**

SISY 2022 IEEE 20th Jubilee International Symposium on Intelligent Systems and Informatics, Special Session on Research Protocols and Systematic Reviews (organiser and section chair: **Dr. Zsombor Zrubka**)



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## **Available professional resources**

On our renewed website – <https://hecon.uni-obuda.hu/> – you can find a brief summary of our research activities (research objectives, results, publications, HTA reports, health economic analyses).



## Annex 1: Publications, abstracts, presentations, in English and Hungarian

### Journal articles in English

#### Overall IF: 38,105

Zoltán Hermann, · **Márta Péntek**, · **László Gulácsi**, Irén Anna Kopcsóné Németh, · **Zsombor Zrubka**, Measuring the acceptability of EQ-5D-3L health states for different ages: a new adaptive survey methodology, *The European Journal of Health Economics*, 2022 Sep;23(7):1243-1255. doi: 10.1007/s10198-021-01424-8., **IF (2021) 5.271 Scimago D1**

**Zrubka, Zs**; Csabai, I; Hermann, Z; Golicki, D; Prevolnik-Rupel, V; Ogorevc, M; **Gulácsi, L**; **Péntek, M**, Predicting patient-level EQ-5D-3L index scores from a large international database: comparison of machine learning and regression methods, accepted, *Value in Health* 2022 Sep;25(9):1590-1601. doi: 10.1016/j.jval.2022.01.024. **IF (2021) 5.101 Scimago D1**

**Zsombor Zrubka**, Péter Vékás, Péter Németh, Ágota Dobos, Ottó Hajdu, Levente Kovács, **László Gulácsi**, Hibbard Judith, **Márta Péntek**, Validation of the PAM-13 instrument in the Hungarian general population 40 years old and above, *The European Journal of Health Economics*, 2022 Nov;23(8):1341-1355. doi: 10.1007/s10198-022-01434-0. **IF (2021) 5.271 Scimago D1**

**Zsombor Zrubka**, Áron Kincses, Tamás Ferenci, Levente Kovács, **László Gulácsi**, **Márta Péntek**, Comparing Actuarial and Subjective Healthy Life Expectancy Estimates: a Cross-Sectional Survey Among the General Population in Hungary, *PloS One*, 2022 Mar 10;17(3):e0264708. doi: 10.1371/journal.pone.0264708, **IF (2021) 3.58 Scimago Q1**

**Zsombor Zrubka**, **Márta Péntek**, Lea Mhanna, Teebah Abu-Zahra, Mohamed Mahdi-Abid, **Meriem Fgaier**, Michael Drummond, **László Gulácsi**, Disease-Related Costs Published in The Middle East and North Africa Region: Systematic Review and Analysis of Transferability, *Pharmacoeconomics*, 2022 Jun;40(6):587-599. doi: 10.1007/s40273-022-01146-6. **IF (2021) 4.558 Scimago D1**

**Óscar Brito Fernandes**, **Áron Hölgyesi**, **Márta Péntek**, Patient-centred care in Hungary: Contributions for a policy agenda. *Z. Evid. Fortbild. Qual. Gesundh. wesen (ZEFG)*, 2022, 171: 58-61.

**Hossein Motahari-Nezhad**, **Meriem Fgaier**, Mohamed Mahdi Abid, **Márta Péntek**, **László Gulácsi**, **Zsombor Zrubka**, Scoping review of systematic reviews of digital biomarker-based studies, *JMIR mHealth and uHealth* 2022 Oct 24;10(10):e35722. doi: 10.2196/35722. **IF (2021) 4.95, Scimago Q1**

**Áron Hölgyesi**, Gyula Poór, Petra Baji, **Zsombor Zrubka**, Miklós Farkas, Ágota Dobos, **László Gulácsi**, Levente Kovács, **Márta Péntek**, Validation of the Musculoskeletal Health Questionnaire in a general population sample: a cross-sectional online survey in Hungary, *BMC Musculoskeletal Disorders*, 2022 Aug 13;23(1):771. doi: 10.1186/s12891-022-05716-9 **IF (2021) 2.562, Scimago Q1**

Anita Burrell, **Zsombor Zrubka**, Annette Champion, Vladimir Zah, Laura Vinuesa, Anke-Peggy Holtorf, Rosella Di Bidino, Jagadeswara Rao Earla, Joanna Entwistle, Artem Tarasovic Boltyenkov, George Braileanu, Katarzyna Kolasa, Jessica Roydhouse, Carl Asche, ISPOR Digital Health Special Interest Group Key Project, How Useful Are Digital Health Terms for



Outcomes Research? An ISPOR Special Interest Group Report, Value in Health, Volume 25, Issue 9, September 2022, Pages 1469-1479, **IF (2021) 6.461, Scimago D1**

Vladimir, Zah ; Anita, Burrell ; Carl, Asche ; **Zsombor, Zrubka**, Paying for Digital Health Interventions – What Evidence is Needed?, ACTA POLYTECHNICA HUNGARICA 19 : 9 pp. 179-199. , 21 p. (2022), **IF (2021) 1.711, Scimago Q2**

## Journal articles in Hungarian

**Zrubka, Zsombor ; Péntek, Márta ; Gulácsi, László ;** Jani, Kinga. Mit tudnak a gépek az egészségünkről? (2022). Online médiamegjelenés, Egészségkalauz 2022. 05. 03., Medicalonline 2022. 05. 04., WebORVOS online egészségügyi magazin 2022. 05. 04., Okosipar.hu 2022. 05. 04., bdpst24.hu

## Citable abstracts in English

A Burrell, A Champion, V Zah, L Vinuesa, A Holtorf, R Di Bidino, J Earla, J Entwistle, A Boltyenkov, G Braileanu, K Kolasa, J Roydhouse, C Asche, **Z Zrubka**, Does Text Analysis of Umbrella Terms in Digital Health Provide Clarity?, Value in Health, 2022 Jun 27, 25 (7): S532. doi:10.1016/j.jval.2022.04.1280, **IF (2021): 5.101**

**Á Hölgyesi, B Tóth, M Kozlovszky, J Kuti, M Weszl, P Baji, L Kovács, L Gulácsi, Z Zrubka, M Péntek**, Epidemiology and Patients' Knowledge of Implantable Medical Device Management and Safe Use: Results of a CROSS-Sectional Survey Among the General Population in Hungary, Value in Health, 2022 Jun 27, 25 (7): S538. doi:10.1016/j.jval.2022.04.1310, **IF (2021): 5.101**

**H Motahari-Nezhad, M Fgaier, M Péntek, L Gulácsi, Z Zrubka**, Populations, Interventions, and Outcomes in Digital Biomarker-Based Interventions' Systematic Reviews: A Scoping Review, Value in Health, 2022 Jun 27, 25 (7): S534. doi:10.1016/j.jval.2022.04.1293, **IF (2021): 5.101**

**M Péntek, Á Hölgyesi, B Tóth, M Kozlovszky, J Kuti, M Weszl, J Czere, P Baji, L Kovács, L Gulácsi, Z Zrubka**, Citizens' Thoughts about Implantable Medical Devices: Results of a Cross-Sectional Survey Among the General Population in Hungary, Value in Health, 2022 Jun 27, 25 (7): S537. doi: 10.1016/j.jval.2022.04.1305, **IF (2021): 5.101**

**M Péntek, M Kozlovszky, M Weszl, J Kuti, Á Hölgyesi, B Tóth, J Czere, P Baji, L Kovács, L Gulácsi, Z Zrubka**, Patients' Experiences with Shared Decision Making about Implantable Medical Device Surgery: Results of a Cross-Sectional Survey in Hungary, Value in Health, 2022 Jun 27, 25 (7): S533. doi: 10.1016/j.jval.2022.04.1286, **IF (2021): 5.101**

V Zah, A Burrell, **Z Zrubka**, CV Asche, Paying for Digital Health Interventions: A Rapid Review of Payers' Evidence Frameworks, Value in Health, 2022 Jun 27, 25 (7): S509. doi: 10.1016/j.jval.2022.04.1162, **IF (2021): 5.101**

**Z Zrubka, M Péntek, L Mhanna, M Fgaier, HA Al-Abdulkarim, F El-Dahiyat, M Drummond, L Gulácsi**, Accuracy of Transferred Medical Costs: Evidence from the Middle East and North



Africa Region, Value in Health, 2022 Jun 27, 25 (7): S433. doi: 10.1016/j.jval.2022.04.752, **IF (2021): 5.101**

**Hölgyesi Á,** Tóth B, Kozlovszky M, Kuti J, Weszl M, Balázs G, Baji P, Kovács L, **Gulácsi L, Zrubka Z, Péntek M.** Living with Orthopaedic Implants: Results of an Online Cross-Sectional Study in Hungary. ISPOR Europe 2022, 6-9 November; Accepted for publication. Value in Health, **IF (2021): 5.101**

**Hölgyesi Á,** Tóth B, Kozlovszky M, Kuti J, Weszl M, Balázs G, Baji P, Kovács L, **Gulácsi L, Zrubka Z, Péntek M.** Citizens' Preferences for Robot-Assisted Hip Replacement: Results of an Online Cross-Sectional Study in Hungary. ISPOR Europe 2022, 6-9 November; Accepted for publication. Value in Health, **IF (2021): 5.101**

**Zrubka, Zsombor,** Annette Champion, Anke-Peggy Holtorf, Rossella Di Bidino, Jagadeswara Rao Earla, Artem Boltyenkov, Masami Tabata-Kelly, Carl Asche, Anita Burrell. Qualitative content analysis of secondary digital health terms – Are they sufficient for health outcomes research purposes? ISPOR Europe 2022, 6-9 November; Accepted for publication. Value in Health, **IF (2021): 5.101**

## Citable abstracts in Hungarian

**Hölgyesi Áron, Zsombor Zrubka, Gulácsi László,** Kovács Levente, Tóth Barbara, Weszl Miklós, Balázs György, Kozlovszky Miklós, Kuti József, Baji Petra, **Péntek Márta.** Ortopédiai és csonttörés miatti implantátumok epidemiológiája és a betegek tájékozottsága: magyarországi keresztmetszeti lakossági felmérés eredményei. MAGYAR REUMATOLÓGIA 63 : 3 p. 167 , 1 p. (2022)

**Hölgyesi Áron, Zsombor Zrubka, Gulácsi László,** Kovács Levente, Tóth Barbara, Weszl Miklós, Balázs György, Kozlovszky Miklós, Kuti József, Baji Petra, **Péntek Márta.** Robotsebészet alkalmazással kapcsolatos preferenciák csípőprotézis-beültetés esetén: keresztmetszeti kérdőíves felmérés a magyarországi lakosság körében. MAGYAR REUMATOLÓGIA 63 : 3 p. 168 , 1 p. (2022)

## Presentations in English (with citable abstracts)

János, Tibor Czere ; **Márta, Péntek.** Exploring the Feasibility of the Meta-analysis of Randomized Controlled Trials on Artificial Intelligence Chatbots for Use in Healthcare Based on a Published Systematic Review. In: Szakál, Anikó (szerk.) IEEE 20th Jubilee International Symposium on Intelligent Systems and Informatics (SISY 2022). Szabadka, Szerbia : IEEE (2022) 457 p. pp. 53-58. , 6 p.

János, Tibor Czere ; **László, Gulácsi ; Zsombor, Zrubka ; Márta, Péntek.** Quality assessment of clinical trials with artificial intelligence based chatbots in healthcare: points to consider in the protocol development for a systematic literature review. In: Szakál, Anikó (szerk.) IEEE 16th International Symposium on Applied Computational Intelligence and Informatics SACI 2022. Temesvár, Románia : IEEE (2022) pp. 335-340. , 6 p.



Johanna, Tripo ; József, Fogarasi ; **Márta, Péntek**. Statistical reporting quality of randomized controlled trials on artificial intelligence chatbots for promoting healthy lifestyle: exploring the SAMPL guideline. In: Szakál, Anikó (szerk.) IEEE 20th Jubilee International Symposium on Intelligent Systems and Informatics (SISY 2022) Szabadka, Szerbia : IEEE (2022) 457 p. pp. 31-36. , 6 p.

**Zsombor, Zrubka ; László, Gulácsi ; Márta, Péntek**. Time to start using checklists for reporting artificial intelligence in health care and biomedical research: a rapid review of available tools. In: Szakál, Anikó (szerk.) 2022 IEEE 26th International Conference on Intelligent Engineering Systems (INES 2022) Budapest, Magyarország : IEEE Hungary Section (2022) 273 p. pp. 15-20. , 6 p.

**Fgaier, Meriem ; Zrubka, Zsombor**. Cost-effectiveness of using chatbots in healthcare: a systematic review. In: Anikó, Szakál (szerk.) IEEE Joint 22nd International Symposium on COMPUTATIONAL INTELLIGENCE and INFORMATICS and 8th International Conference on Recent Achievements in Mechatronics, Automation, Computer Science and Robotics (CINTI-MACRo 2022) : Proceedings Budapest, Magyarország : IEEE Hungary Section (2022) 418 p. pp. 305-310. , 6 p.

**Fgaier, Meriem**. Health economic studies using transferred costs from the Middle East and North Africa region: a protocol for a systematic review of the methodology and reporting quality In: Szakál, Anikó (szerk.) IEEE 20th Jubilee International Symposium on Intelligent Systems and Informatics (SISY 2022) Szabadka, Szerbia : IEEE (2022) 457 p. pp. 41-46. , 6 p.

**Hossein, Motahari-Nezhad ; Meriem, Fgaier ; Hana, Alabdulkarim**. Methodological and bibliometric examination of systematic reviews of digital biomarkerbased studies. In: Szakál, Anikó (szerk.) IEEE 20th Jubilee International Symposium on Intelligent Systems and Informatics (SISY 2022), Szabadka, Szerbia : IEEE (2022) 457 p. pp. 47-52. , 6 p.

**Meriem Fgaier, Zrubka Zsombor**. Cost-effectiveness analysis and sustainable innovation in healthcare: A review of cost transferability from the MENA region. In: Agnes, Csiszarik-Kocsir; Anett, Popovics; Pal, Feher-Polgar (szerk.) XVII. FIKUSZ 2022 International Conference : Abstract Book, Budapest, Magyarország : Óbudai Egyetem (2022) 71 p. pp. 41-41. , 1 p.

**Hossein Motahari-Nezhad, Zsombor Zrubka**. Quality of evidence assessment of direct and indirect digital biomarkers. In: Agnes, Csiszarik-Kocsir; Anett, Popovics; Pal, Feher-Polgar (szerk.) XVII. FIKUSZ 2022 International Conference : Abstract Book, Budapest, Magyarország : Óbudai Egyetem (2022) 71 p. pp. 42-42. , 1 p.

**Barbara, Tóth ; Dóra, Szerencsés ; Márta, Péntek ; László, Gulácsi ; Zsombor, Zrubka**. Examining factors influencing students' participation in research and development projects during obtaining their first degree. In: Agnes, Csiszarik-Kocsir; Anett, Popovics; Pal, Feher-Polgar (szerk.) XVII. FIKUSZ 2022 International Conference : Abstract Book, Budapest, Magyarország : Óbudai Egyetem (2022) 71 p. pp. 43-43. , 1 p.

**Barbara Tóth, Laura Gulyás Oldal**. Automation of systematic literature reviews: Development of a gold standard of articles in PubMed 2020-2021, a research protocol. In: Szakál, Anikó



(szerk.) IEEE 20th Jubilee International Symposium on Intelligent Systems and Informatics (SISY 2022) Szabadka, Szerbia : IEEE (2022) 457 p. , 6 p.

## **Annex 2: PhD students participating in Special Translational PhD Programme on Systematic Literature Review**

**Bringye Zsolt**, Are wearable physiological sensors and associated algorithms suitable for detecting or predicting challenging behavior events in patients with Autism Spectrum Disorder? A systematic review. Supervisor: Prof. Miklós Kozlovsky

**Czere János**, Artificial intelligence based chatbot for clinical trial projects. Supervisors: **Prof. László Gulácsi, Prof. Márta Péntek**

**Meriem Fgaier**, Health economic studies using transferred costs from the Middle East and North Africa region. Supervisor: **Dr. Zsombor Zrubka**

**Móga Kristóf**: Clinical Results of using Augmented or Mixed Reality Enhanced Navigation for In-Vivo Spine Surgery: A Systematic Review. Supervisors: Dr. Tamás Haidegger, Dr. Andrea Ferencz

**Tóth Barbara**, Automation of systematic literature reviews: Development of a gold standard of articles in PubMed 2020-2021. Supervisors: **Dr. Zsombor Zrubka**, Dr. Péter Galambos

**Tuan-Anh Tran**, Heart rate variability measurement to assess work-content acute stress of workers in industrial manufacturing environment: A systematic scoping review. Supervisors: Dr. György Eigner, Dr. Tamás Ruppert, Prof. Levente Kovács