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„e-methodology”  
21st April 2023**

Wroclaw Medical University  
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& online via Microsoft Teams

**BOOK OF  
ABSTRACTS**

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**Edited by Katarzyna Kaczmar & Andrzej Jarynowski**

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April 21st 2022	
Timing of the conference is UTC + 01:00 (Poland)	
Inauguration of the conference	9.00 – 9.15
15 minutes for each presentation +5 minutes for discussion and questions	
Poster session available at the conference website and during breaks	
SESSION 1: <b>Education, social (new) and traditional media listening</b>	9.20 – 10.20
Coffee break	10.20 – 10.40
SESSION 2: <b>Infodemiology: Information, epidemiology, methodology</b>	10.40 – 13.40
<i>(including coffee break)</i>	12.00 – 12.20
Lunch break	13.40 – 14.50
SESSION 3: <b>E-health, AI in education, medicine and healthcare</b>	14.50 – 17.10
End of the conference	17.10

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**Mateusz Lickindorf**, Wrocław Medical University

## INTRODUCTION

Dear Conference Participants,

we are honoured to once again welcome you to the international scientific conference E-methodology, now in its seventh edition. Moreover, this edition will be the first one held in a hybrid format.

This year, based on our past experience, we decided to build on the skills and knowledge we have gained. This is how the idea of holding the conference in a hybrid form was born. We also believe that this way of conducting the conference will be more comfortable for some of you, not only because of the still-present topic of the pandemic and the problems associated with travel during this period also because you can quickly connect from anywhere in the world to present the results of your research without having to significantly adjust your other plans to this event. I know how much work and commitment it takes to prepare a conference like this, so I would like to sincerely thank all the members of the scientific and organising committee and others who have supported us in other ways.

Due to the specificity of the topics submitted to us, this year's conference has been divided into three sections: (1) Education, social (new) and traditional media listening, (2) Infodemiology: Information, epidemiology, methodology (3) E-health, AI in education, medicine and healthcare

Despite the turbulent situation in the world, we are trying with all our strength to provide you with the best possible conditions to present your research to others, share your knowledge and experiences, and develop yourself in an international environment. We sincerely hope that we will provide you with many intellectual experiences and that you will want to participate in our conference in the years to come. We are very grateful that you are with us.

With the best wishes of fruitful academic discussions and cooperation,

Katarzyna Kaczmar  
Conference Secretary

## PROGRAM OF THE CONFERENCE

SESSION 1: Education, social (new) and traditional media listening chaired by Mateusz Lickindorf	
<p>Ildikó Szabó, PhD University of Pécs, Hungary</p> <p><b>From the Quill to the Pendrive Digital Learning Materials in Teaching Languages for Special Purposes in Higher Education in QuLL Project</b></p>	9.20
<p>Antonia Liguori, PhD Loughborough University, United Kingdom</p> <p><b>Digital Storytelling as a tool for peer learning Reflecting on the European project SOLIS as a case study within formal and non-formal Education</b></p>	9.40
<p>Paolo Di Sia, Prof. University of Verona &amp; University of Padova, Italy</p> <p><b>Looking at the Impact of Digital Revolution in School Education: Considerations and Insights</b></p>	10.00
Coffee break and poster session	10.20
SESSION 2: Infodemiology: Information, epidemiology, methodology chaired by Mateusz Lickindorf	
<p>Maia Romanowska, MA Global Immunization Action Network Team, USA &amp; Medical Hygiene Association, Poland Infodemic Management by WHO/GAVI/Unicef/US CDC</p> <p><b>Infodemic management by WHO</b></p>	10.40
<p>Katarzyna Kuźmicz, MA Interdisciplinary Research Institute in Glogow, Poland</p> <p><b>International online recruitment process</b></p>	11.20
<p>Marta Nowakowska-Kotas, PhD; Krystian Obara, PhD; Jakub Stojanowski MD, Sławomir Budrewicz, PhD Wroclaw Medical Univeristy, Poland</p> <p><b>Infodemic's Impact on Patient Behavior and Stroke Treatment During the COVID-19 Pandemic: An Analysis of Internet Searches and Clinical Data</b></p>	11.40
Coffee break	12.00
<p>Andrzej Buda, PhD Interdisciplinary Research Institute in Glogow, Poland</p> <p><b>Collective Behaviour Of Crimes in Cyber Space</b></p>	12.20
<p>Stanisław Maksymowicz, PhD School of Public Health, University of Warmia and Mazury in Olsztyn, Poland</p> <p><b>Biopolitics in the Internet during pandemic and war time</b></p>	12.40
<p>Jakub Kuś, PhD SWPS University, Poland</p> <p><b>Techniques of social influence as a tool to reduce the dispersion of responsibility on the Internet</b></p>	13.00
<p>Alexander Semenov, Prof. Univeristy of Florida, United States of America</p> <p><b>Impact of Geographic Factors on Friendship: a Case of VK.com</b></p>	13.20
Lunch break & POSTERS session	13.40

SESSION 3: E-health, AI in education, medicine and healthcare chaired by Andrzej Jarynowski	
<p>Łukasz Czekaj, PhD; Szymon Gęsicki, Eng; Jakub Domaszewicz, MSc; Andrzej Jarynowski, PhD; Robert Kitłowski MA AIDMED, Poland; Katarzyna Prusik, DSc Gdańsk University of Physical Education and Sport, Poland; Gabriela Czarnek, PhD Jagiellonian University, Poland</p> <p><b>Enhancing Physical Activity Motivation in Pulmonary Patients with Artificial Intelligence (A Collaborative Approach to Telerehabilitation)</b></p>	14.50
<p>Daniel Platek, PhD ISP PAN, Poland</p> <p><b>Initiators or participants? The position of political parties in protest coalitions in Polish Internet media during the first year of COVID-19 pandemic</b></p>	15.30
<p>Karolina Tądel, PhD candidate; Iwona Bil-Lula Ph.D., DSc, Professor, Wroclaw Medical University, Poland Andrzej Dudek, Assoc. Prof. dr hab. Wroclaw University of Economics and Business, Poland</p> <p><b>AI in medicine and the model of technology adoption on the example of the implementation doctorate program</b></p>	15.50
<p>Monika Wójta-Kempa, PhD Wroclaw Medical University, Poland Andrzej Jarynowski, PhD Interdisciplinary Research Institute in Glogow, Poland</p> <p><b>Impact of online information on health decisions (supply and demand analysis for Poland)</b></p>	16.10
<p>Andrzej Jarynowski, PhD; Vitaly Belik, Prof. Free University of Berlin, Germany</p> <p><b>Monitoring Antimicrobial Use and Perception in the Context of One Health on Polish and German Internet</b></p>	16.30
<p>Iwona Mazur, PhD Wroclaw Medical Univeristy, Poland</p> <p><b>Telemedicine, telecare as an element of deinstitutionalization of health services</b></p>	16.50
End of the conference	17.10

<b>POSTER SESSION</b> (during breaks, online on conference website)
<p>Anna Rozensztrauch, PhD; Robert Śmigiel, prof. dr hab.; Dariusz Patkowski, prof. dr hab.; Sylwester Gerus, MD Wroclaw Medical Univeristy, Poland Michaela Dellenmark-Blom University of Gothenburg, Sweden</p> <p><b>Reliability, and Validity of the Polish Version of the Esophageal-Atresia-Quality-of-Life Questionnaires to Assess Condition-Specific Quality of Life in Children and Adolescents Born with Esophageal Atresia</b></p>
<p>Andrea Palmini MSc, Vitaly Belik Prof.; Andrzej Jarynowski PhD; Free Univeristy of Berlin, Germany Mitchell Welch Prof.; Johann Boshoff Prof.; Derek Schneider PhD; Terence Sibanda PhD; Isabelle Ruhnke Prof. University of New England, Armidale NSW 2351, Australia</p> <p><b>Explaining infectious disease based on mobility obtained from RFID sensor data on free-range egg laying hens movements</b></p>
<p>Barbara Grabowska, PhD; Laura Denys MSc, Luba Ślósarz, PhD Wroclaw Medical University, Poland</p> <p><b>The impact of working in front of a screen of digital devices on the organ of vision in health professionals</b></p>
<p>Iwona Klisowska MA, Barbara Grabowska, PhD; Iwona Twardak MSc, Mariola Seń, PhD Wroclaw Medical Univeristy, Poland</p> <p><b>Education of Ukrainian children in Poland – basic information</b></p>
<p>Barbara Grabowska, PhD; Iwona Klisowska MA, Mariola Seń, PhD; Kornelia Freus MSc Wroclaw Medical University, Poland</p> <p><b>Importance of mass media in health promotion and health education of the population</b></p>
<p>Mariola Seń, PhD; Iwona Klisowska MSc, Barbara Grabowska, PhD; Agnieszka Lintowska, PhD Wroclaw Medical Univeristy, Poland</p> <p><b>National Health Fund apps (applications) for health monitoring and improve health: My Health Plus and My Physio Plus</b></p>
<p>Agata Trafalska MD Wroclaw Medical University, Poland</p> <p><b>Possibilities of telerehabilitation of children with developmental disorders and assessment of such method of therapy by their parents</b></p>
<p>Aleksandra Lisowska PhD, Agnieszka Kraińska MSc, Iwona Twardak MSc Wroclaw Medical Univeristy, Poland</p> <p><b>Sign language in communication with the patient</b></p>
<p>Aleksandra Lisowska PhD, Agnieszka Kraińska MSc, Iwona Twardak MSc Wroclaw Medical Univeristy, Poland</p> <p><b>Alternative systems of communicating with the patient</b></p>
<p>Agnieszka Kraińska MSc, Iwona Twardak MSc, Aleksandra Lisowska, PhD; Roksana Paluch MSc Wroclaw Medical Univeristy, Poland</p> <p><b>Methods of dealing with stress problem among post mastectomy women</b></p>
<p>Dominika Kuźma BSc, Roksana Papierkowska BSc Wroclaw Medical University, Poland</p> <p><b>Attitude of young women aged 18-30 to using menstrual cycle tracking apps.</b></p>



<p>Iwona Twardak MSc, Aleksandra Lisowska, PhD; Iwona Klisowska MSc Wroclaw Medical University, Poland</p> <p><b>Impact of the COVID-19 pandemic on patients and palliative care workers</b></p>
<p>Anna Dąbek MSc, Iwona Zborowska MSc, Izabela Wróblewska dr hab. Wroclaw Medical Univeristy, Poland</p> <p>Is computer and internet familiar for seniors?</p>
<p>Luba Ślósarz, PhD; Wroclaw Medical Univeristy, Poland Wiesław Ślósarz, PhD</p> <p>Private Sexology Practice recommended by the Polish Sexological Society, Poland</p> <p><b>Internet-mediated sexuality. New opportunities and threats</b></p>
<p>Iwona Twardak MSc, Aleksandra Lisowska, PhD; Agnieszka Kraińska MSc, Jerzy Twardak, PhD Wroclaw Medical University, Poland</p> <p><b>The level of life satisfaction and strategies of coping with difficult situations of intensive care nurses</b></p>
<p>Magdalena Kazimierska-Zajac, PhD Wroclaw Medical University, Poland</p> <p><b>Artificial Intelligence in healthcare</b></p>

## ABSTRACTS

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### Enhancing Physical Activity Motivation in Pulmonary Patients with Artificial Intelligence (A Collaborative Approach to Telerehabilitation)

**AIM.** Chronic diseases are becoming more and more common among Europe's aging population. Motivation for physical activity is essential in maintaining the long-term health of seniors. Wearable devices and fitness apps can analyze an individual's physical abilities, preferences and goals to generate personalized training plans that are tailored to their specific needs, contributing to increased motivation to engage in regular physical activity. The main objective of this pilot study is to test remote telerehabilitation through extended Nordic walking training to improve the motivation and experience of end users. Twelve-week training cycle creates and consolidates the habit of systematic physical activity. Our goal is to understand how to support patient compliance while training at home 1) through information to enhance motivation and understanding of wellbeing and health benefits, feedback; 2) social support tactics: control, comparison, competition; 3) methods of small goals, gamification (points, small goals, self-tests); 4) habitus strategies: simple routines, internal motivations.

**METHODS.** 23 participants (ptx>60 y. o.) were allocated into 3 cohorts practising nording walking: 1) negative control - no home training: 9 ptx; 2) positive control: 7ptx; 3) intervention (messaging): 6ptx). All ptx filled questionnaires about motivation. The primary outcome of our study was adherence measured by completed tasks (exercises or tests) and secondary outcomes were physiological signals (exercise duration, steps count, heart rate). Factors driving adherence have been explored.

**RESULTS** We observe a low (but in line with other studies) adherence rate in exercises 19% and 22% in tests among remote training groups (positive control and intervention). REMote Ptx under the stimulus were OR=2.7 folds more likely to achieve minimum requirements in tests than positive control. There is a significant difference ( $p$ -V=0.08, paired t-test) between

mean No. fulfilled exercises between positive (4.5) and negative control (2.3), thus we see significant drop out in remote training adherence (without stimuli) in comparison to stationary training. However, no significant difference in mean ( $p=0.61$ , paired t-test) No. fulfilled exercises between intervention (3.8) and positive control, so remote (with stimuli) and stationary training are statistically indistinguishable. Health maintenance and wellbeing-based motivation triggers seem to be the most important in adherence. On the other hand, lack of willingness was the greatest barrier.

**CONCLUSIONS.** This small pilot suggests that personalised, motivational and/or biofeedbackbased interventions may improve adherence and quality of training. Lessons learnt for users' experience are the positive feedback of that content (movies) helps in exercises and messages and reminders help in organising themselves. Next goal is to extend remote patient rehabilitation using our mobile apps and sensors merge with electronic health records surveys, real-world data for process mining combined into multimodal AI predictive tools to capture a holistic picture of the patient's profile. The research hypothesis is that there will be subjective and objective improvements in general fitness in ptx undergoing personalised telerehabilitation (with AI trigger motivation), and there should be no clear significant difference from baseline stationary training.

**Keywords:** sensors, wearables, tele-rehabilitation, AI-enhanced motivation, ageing, nordic walking

Anna Dąbek MSc, Iwona Zborowska MSc, Izabela Wróblewska dr hab.

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### Is computer and internet familiar for seniors?

**Introduction.** Growing changes in the structure of society in terms of the increase in the number of elderly people and the increasing use of IT instruments in everyday life have caused a kind of IT exclusion among the elderly.

**Objective of research.** The aim of the research is to show the problems of older people in their approach to learning and teaching via the Internet.

**Material and methods.** A review paper based on the literature on the subject.

**Results.** New technologies that contribute to progress, dissemination of knowledge and education of every social group. Only 4% of people aged 65 and over use the Internet, making

them available in the state from a form of learning available through this method. Creating organizations implementing a program in the field of IT exclusion among the elderly people.

Barbara Grabowska, PhD; Laura Denys MSc, Luba Ślósarz, PhD

Wroclaw Medical University, Poland

### **The impact of working in front of a screen of digital devices on the organ of vision in health professionals**

**Background.** Digital devices have revolutionised the way we work and spend our leisure time. It was observed that eye complaints such as eye redness, eye strain, eye irritation, burning eyes, and blurred or double vision occur with increased frequency among computer users compared to those with other near visual work. Given the ever-increasing access to digital devices, CVS (Computer Vision Syndrome) is starting to become a growing social problem.

**Aim of study.** This study aims to assess the impact of digital screens on the organ of vision among health professionals.

**Material and methods.** To assess the impact of digital devices on the organ of vision among health professionals, a survey was conducted at Diagnostyka S.A., Wrocław Branch. A total of 152 respondents took part in the survey, including 128 women (84.2%) and 24 men (15.8%)

who use electronic devices in their work. Diagnostyka S.A. is the largest network of medical laboratories in Poland. There is a wide variety of specialists among health professionals: from laboratory diagnosticians through laboratory technicians, nurses, or physicians. Each of the needs to use a digital screen, monitor or other device in their day-to-day work. A CAWI (Computer Assisted Web Interview) method was used during this study, which allowed respondents to complete an anonymous online survey questionnaire. The results of the surveys were collected from 21 April 2022 to 15 May 2022.

**Results.** The severity of eye symptoms was not significantly dependent on the time spent in front of a digital screen. Those spending up to 3 hours in front of a screen were most likely to experience symptoms of the least severity (45.5%), as were those spending 4-5 hours in front of a screen (50.0%) and more than 5 hours (38.2%). The severity of eye symptoms was not significantly dependent on medical profession. Those working in a laboratory were most likely to observe symptoms of the lowest severity (38.0%), as were physicians (56.3%), nurses and midwives 39.3%), and other health professionals (50.0%). The severity of eye symptoms was

not significantly related to sex or age. Both women (43.8 %) and men (41.7 %) were most likely to have the least severe symptoms. Those aged up to 40 years (49.3%) were most likely to experience symptoms of the lowest severity, as were those aged over 40 years (38.3%). Eye strain was not significantly dependent on the number of digital screen devices used at work, the distance from the screen in use, or the number of hours spent in front of the screen.

**Discussion and Conclusions.** We use digital devices every day and as a result we are exposed to their negative effects. Working with digital devices for many hours at a time is often associated with eye complaints such as eye strain, eye pain, burning eyes, and impaired visual acuity. The use of preventive measures, i.e. taking breaks, exercising the eyes and maintaining the correct distance from the screen, is a very important factor in the implementation of prevention as an important element that contributes to the alleviation of CVS-related eye symptoms.

**Keywords:** dry eye syndrome, CVS, digital screen, eye strain

Barbara Grabowska, PhD; Iwona Klisowska MA, Mariola Seń, PhD; Kornelia Freus MSc  
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### **Importance of mass media in health promotion and health education of the population**

**Background.** Health promotion is a new process that works for the health of the entire population. It combines scientific disciplines such as psychology, sociology, medicine, pedagogy, and economics. Mass media are an integral part of health promotion. With the help of mass media, acquiring knowledge is simpler and easier. The Internet is currently the main source of knowledge, providing a rapid flow of information and exchange of news. It enables the development of e-promotion of health. Television has informative, entertaining and educational functions. It is an important audiovisual transmitter with an influence on society. It has a large number of programmes and TV shows on healthy lifestyle, physical activity, healthy diet, etc. Radio is the second most common medium after television, which accompanies the public at every free moment. The press, on the other hand, is the oldest form of information transfer but also the most trusted medium in human civilisation. In health promotion, an important element is health education. It teaches the willingness to take care of one's own health and that of others.

**Aim of study.** This study aims to examine the influence of individual mass media on activities promoting health-promoting behaviour.

**Material and methods.** The study was conducted in April 2022. A survey technique was used. The respondents were individuals aged 18 and older. Participation in the study was voluntary. The questionnaire consisted of 20 questions and a set of general demographic questions. The survey was conducted on a population of 288 individuals. The respondents were both men and women living in towns and villages of different sizes and with different educational backgrounds. The Pearson's Chi-2 test of independence was used in the statistical study.

**Results.** Based on the results of this study, it was found that respondents most often obtain knowledge on health topics from the Internet (73.7%). They are least likely to obtain health information from university or school (18.9%). The survey revealed that women (54.8 %) are significantly more likely than men (32.3 %) to be interested in and seek information about health. The information sought by the public mainly relates to changes in physical activity and diet (56%). The smallest percentage of respondents (18.9 %) reported seeking information on promotions for medical equipment or health products.

**Conclusions.** Mass media are the most common source of health information among the public. Women are much more likely than men to seek information on topics related to health and healthy lifestyle. They mainly obtain information from the Internet while men obtain it from the radio and television. Urban residents get their knowledge of health and health promotion from the Internet while rural residents get their knowledge from television. The lower the age of the respondents, the greater the sourcing of health information from the Internet; as people get older, they source health-promoting news from the press and television.

**Keywords:** health promotion, health education, mass media, Internet

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Institute for Veterinary Epidemiology and Biostatistics, Freie Universität Berlin, Germany

## Monitoring Antimicrobial Use and Perception in the Context of One Health on the Polish and the German Internet

**Aim.** Antimicrobial use (AMU) is a challenging topic to explore on the Internet, and current approaches are limited to information retrieval and Google Trends (GT) and media narratives analysis. To address these shortcomings, we propose a simple approach to media listening for monitoring AMU perception in One Health settings in Polish and German.

**Concept.** In the study we want to gain insights into spatiotemporal dynamics of antimicrobials (AM) perception among general population. We want to verify if estimation of the relative prevalence of different groups of Antibiotics/biocides is possible. To this end we collected and analysed antimicrobials related 1) news articles 2) GT trends queries between 2014 and 2022. Time series analysis and topic modelling (for news only) were performed.

**Practical application.** We have compared the evolution of interest between Poland and Germany. AM resistance is more often discussed in Germany than Poland. The peak of interest for 2018 in Germany is driven by the biocide-glyphosat topic. Shortage of particular antibiotics due to the war in Ukraine since Feb 2022 manifested in significant discussion mostly in Poland (peak of interest in AM). We have observed vanishing of common bacterial infections seasonality due to COVID-19 in Poland much more than in Germany.

**Conclusion.** We demonstrate how our infodemiological method could provide a comprehensive understanding of AM use in One Health settings.

**Keywords:** antimicrobial use surveillance, infodemiology, infoveillance, social media listening

Magdalena Kazimierska-Zajac, PhD

Wroclaw Medical University, Poland

### Artificial Intelligence in Healthcare

**Introduction.** Artificial intelligence is currently attracting a great deal of interest. Numerous scientific studies describe the potential application of AI in health care, arguing that AI can support the work of medical personnel on many levels.

**Methods.** A literature review on the topic was used to collect and identify areas where AI is already or could be used in the future to protect human health.

**Results and conclusions.** AI can be used in many aspects of health care, from disease diagnosis to disease prediction. Examples of the use of artificial intelligence in healthcare include:

1. Disease diagnosis: Artificial intelligence can help doctors diagnose diseases faster and more accurately, using machine learning and analysis of medical data such as test results, X-rays, and MRIs.
2. Health monitoring: AI-based systems can track a patient's health parameters, such as blood pressure, heart rate, glucose levels, or ECG, to identify health problems faster.
3. Treating diseases: AI can help tailor treatments to individual patients, considering their medical history, symptoms, and test results. It can also support detecting drug reactions and suggesting more effective alternatives. AI can also help in the design of new drugs or the development of molecular biology.
4. Disease prediction: AI-based systems can analyze large medical datasets to predict patients' disease risk. They can also identify risk factors and suggest ways to reduce them.

Artificial intelligence, with its ability to process large amounts of data in a short time and make decisions based on this data, can be beneficial in healthcare. Artificial intelligence can help detect subtle changes that may go unnoticed by the human eye, which can lead to faster diagnosis and treatment of diseases.

The undoubted advantage of AI is that it can operate continuously, continuously monitoring the patient.

AI can help diagnose various diseases, including respiratory, heart, cancer, neurological, and more. However, it is essential to understand that AI does not replace the doctor but only helps the doctor diagnose diseases. Therefore, the final diagnosis should always be based on a qualified professional's medical. Furthermore, whenever implementing new solutions, ethical issues should also be considered.

Iwona Klisowska MA, Barbara Grabowska, PhD; Iwona Twardak MSc, Mariola Seń, PhD  
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### Education of Ukrainian children in Poland – basic information

**Introduction.** According to Polish law, everyone has the right to education, and up to the age of 18 education is compulsory (Prawo-do-nauki, 2022). It is up to the student to choose a public or non-public school. Education provides the opportunity to acquire knowledge and skills on a regular basis allowing for the future pursuit of a specific profession. Due to the war situation



in Ukraine, thousands of students were enrolled in Polish educational institutions. Various types of difficulties arose both on the part of the schools (lack of preparation for the larger number of students, lack of teachers, language barrier) and on the part of the students themselves (adaptation and communication difficulties), (Nazaruk & Klim-Klimaszewska, 2017). Bearing in mind that access to schooling and learning, together with access to extra, remedial classes, must go hand in hand with the training of the teaching staff so that they can provide education for all culturally diverse students, extensive training and assistance activities have been undertaken. Tuition assistance for Ukrainian refugees is only a small percentage of the measures taken (Migration Crisis, 2017; Challenges, Dilemmas and Prospects for Education, 2021).

**Aim.** The aim of the study was to try to identify the introduction of different types of systemic and local solutions to minimise the problems of related to the admission of Ukrainian children to educational institutions.

**Conclusions.** In connection with the new situation in education related to the influx of a large number of children from Ukraine to Polish schools, meetings were held between representatives of the Ministry of Education and Science and education boards, representatives of non-governmental organisations and local authorities who pointed out the enormity of the challenges, difficulties and problems that are associated with the admission of a large number in a short period of time. The Ombudsman recommended facilitating the employment of teachers, therapists and cultural assistants from Ukraine. Attempts were made to integrate refugees while distance learning was still in progress, international classes were being created and anti-discrimination, multicultural education was being carried out. The recommendations recommended equal access to educational materials and training for teaching staff. The Ministry of Education responded to all the recommendations with actions taken and planned in teaching multicultural classes or overcrowding of schools. The creation of new establishments operating in the Ukrainian system and the possibility of education in the Ukrainian education system through remote education were pointed out as alternatives to the enrolment of students in preparatory or mainstream classes. It was also important to develop information in Ukrainian and Russian on e.g. recruitment, information in the electronic diary (recommendations of the ROP, MEiN 2022).

**Key words:** recommendations, education, children from Ukraine

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### Methods of dealing with stress problem among post mastectomy women

Breast cancer affects more women both in the world and in Poland. The disease is associated with stress accompanying the patient throughout the diagnosis and rehabilitation and return time to perform roles in life: social, work, family. The stress of the existing situation and experiences affects not only the woman but also her entire family. The treatment involves the further consequences and scars that remain to the end of a woman's life. Leaves its mark in every sphere of human life. However, breast cancer is the biggest influence on your mental

health of women. This is a result of fear of women prior to the reaction of the surrounding environment to the disease. Women who have had a mastectomy may have low self-esteem, often suppress their negative emotions retreat into themselves trying to fight the same difficult situation.

**Aim of the study.** Ways to cope with difficult and stressful situations among women after mastectomy.

**Materials and methods.** The study group consisted of 50 women after mastectomy. The questionnaire by their own emotions and Scale Control by M. Watson and S. Greer in Z. Juczyński's adaptation.

**Results.** The study showed the relationship between inhibition of negative emotions, and the place of residence, education, age of the respondents and the period which elapsed after surgery. The best way to deal with stress among women after mastectomy is to think positive and to have hobbies. Mean overall index score in Emotional Control Scale indicates a significant tendency toward inhibition of negative emotions.

**Conclusions.** The greatest support in the fight against cancer, women receive from family and loved ones. Women after mastectomy are characterized by a high rate of suppression of negative emotions. Studies have shown that the tendency to inhibit the negative emotions decreases with age. Lower education can better cope with the expression of negative emotions.

**Key words:** stress, Emotional Control Scale, women after mastectomy

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### **Attitude of young women aged 18-30 to using menstrual cycle tracking apps.**

**Aim.** The aim of this article is to explore the attitudes of young women towards menstrual cycle tracking applications.

**Methods.** The study involved 85 women aged 18 to 30 years to investigate their experiences and opinions regarding the use of menstrual tracking apps. In this work, the method of diagnostic survey was used.

**Results and Conclusion.** The vast majority of respondents use apps to track their menstrual cycle. The most frequently mentioned applications are: Flo and Clue. Respondents who do not use these applications cite as the main reason that they did not know about the existence of such applications or do not like the format.

The study shows that most respondents learn about these types of applications from the Internet. The vast majority of surveyed women report that the application correctly monitors the menstrual cycle and use it mainly for this purpose.

**Cognitive value.** The cognitive value of this article is that women aged 18-30 often use menstrual cycle tracking apps and find them useful but also most of the respondents confirm the credibility of the application in monitoring the menstrual cycle.

**Key words:** menstrual cycle, tracking apps, family planning

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### **Digital Storytelling as a tool for peer learning Reflecting on the European project SOLIS as a case study within formal and non-formal Education**

Digital Storytelling is a well-known workshop-based approach that, over the past 25 years, has been successfully applied in formal and non-formal Education to build trust and share knowledge and experiences (Cianca et al 2014). It is usually based on a series of steps, including story-circle, script writing, storyboarding audio and video editing, and screening, which are generally designed and facilitated by an 'expert' in the methodology. Process and output are equally important to help develop 'holistic thinking' (Meadows, 2009)

in both the teller and the listener, and to enhance active listening and collective empathy. As part of the EU funded project SOLIS, digital storytelling has been applied as a way to:

- Discover hidden stories
- Amplify silent voices
- Combine traditional forms of communication and learning processes with new technologies
- Support collaboration
- Improve wellbeing

Despite some very successful applications of this methodology, the SOLIS project also made the project team more aware about some of its limitations, starting from the need for an expert facilitator to deliver the workshops. This particular limitation emerged from discussion within the team about the long-term impact of the project and was also confirmed by the feedback received from the young people involved in the workshops. In fact, some of them highlighted that they would have preferred to have direct conversations with their peers rather than participating to activities mediated by adults. To respond to this emerging need, the project team started a new collaboration with Mental Health Foundation, in the UK, to pioneer the use of the SOLIS methodology for peer learning among young people. Using insights gained during a series of six storytelling workshops with students ages 13-16, a Digital Storytelling Toolkit (<https://digitalstorytellingtoolkit.uk/>) was developed to help young people talk about mental health and wellbeing in smaller groups. Discussing the provided materials and prompts in groups has helped young people improve their sense of connection and belonging, as well as their self-awareness. The co-creation of this Toolkit expanded the conventional ways of thinking of digital storytelling as an 'expert-led' activity and challenged the classical model in a way that is disruptive of the practice, but also in line with its original ethos.

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### Alternative systems of communicating with the patient

**Summary.** Communication takes place between the sender and the recipient, i.e. between the medical staff and the patient and his family. It can be one-sided or trigger a response called feedback from the recipient. The communication process begins when the sender wants to convey information with a specific meaning to the recipient. The inability of the patient to communicate his needs and requests may lead to withdrawal, depression, crying, aggression towards other people or even to self-aggression. Communication means not only language but also displayed text, Braille, tactile communication, accessible multimedia, as well as the means

of communication: written, aural, expressed in simple and understandable language. For each user, the appropriate method can be selected depending on his capabilities and limitations.

**Conclusions.** The basic issue for each person is the development of communication skills in their environment. It is important not to be afraid to use supportive or alternative means of communication in working with the patient.

**Keywords:** alternative communication, patient, medical Staff

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### Sign language in communication with the patient

**Summary.** In Poland, 50-100 thousand. deaf people communicate using sign language on a daily basis. These people also have their own culture, history and art. Lack of ability to communicate using sign language by medical staff, ignorance of legal acts regulating communication, often prevents contact with a deaf person. Sign language has a separate grammar, it is a visual-spatial language and, unlike the sign language system (SJM), it is not based on the rules of the Polish language. The Polish language is a foreign language for a Deaf person, often hardly understood. A communication error is the assumption that a Deaf person can read lips. Only 5% of deaf people declare effective lip-reading. The lack of presence of sign language interpreters in hospitals is a major communication problem.

**Conclusions.** As a result of the accompanying stress, the Deaf forget some of the previously transmitted content. Neither writing nor lip-reading alone is a sufficient form of health communication.

**Keywords:** Deaf, sign language, medical staff

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### Biopolitics on the Internet during pandemic and war time

**Aim.** The conference presentation was based on the report "Biological mis(dis)-information in the Internet as a possible Kremlin warfare" prepared by: Andrzej Jarynowski, Łukasz Krzowski

and Stanisław Maksymowicz (in preparation for publication). The aim of the presented research was to study the use of narrations via ICT in biological denialism terms against Europe, particularly Poland. Such information's have its strong impact on our infosphere. We suggest that some of these events may be driven by foreign intelligence, aiming on European public health and agricultural production.

**Methods.** In our study we've used both qualitative (for 12 months) and quantitative (for 5 months) methods to assess digital traditional and social media after 24 February 2022.

1) We assessed qualitatively media releases in Russian about "biological weapons" and compared them with official documents released by Russia for the Biological Weapon Convention (BWC) meetings. 2) We performed quantitative analysis of the Polish infosphere between 24 February and start of August 2022 to measure the effectiveness of external Russian propaganda on causing anxiety and fear in Polish society the context of biological weapons and food insecurity. 3) Additionally we performed a qualitative analysis of the materials from the start of February 2022 to end of January 2023 to understand the potential use of misinformation in the context of biological weapons, food insecurity, infectious diseases among refugees and agroterrorism as a form of propaganda.

**Results and conclusion.** The peak of activity in Polish traditional and social-content media took place between March 9-24, 2022 (which is only 9% of the entire time period), when as many as 72% of Google queries, 49% of articles and multimedia on Internet portals and 43% of Tweets has been posted with multi-million reach. It suggests that the possible external influence on Polish society was effective in the sense that it sparked a wave of interest. What's more, biolab conspiracy theory has an effect causing panic in Poland and anti-Ukrainian and anti-American sentiments (main impact on March 2022). To conclude, the Internet is undoubtedly a tool for disseminating disinformation and negationist narratives. Tracking these events not only allows to detect their impact, but also to predict the next steps in the field of public health and agricultural security. This is how our study managed to predict the problem of food biosafety and bioterrorism that appeared in April 2023.

Iwona Mazur, PhD

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### Telemedicine, telecare as an element of deinstitutionalization of health services

**Objective.** One of the main objectives of the paper is to present the possibilities of using telemedicine and telecare in the process of deinstitutionalization of health services. The author

focused on the possibilities of using these ICT tools in the care of the elderly and people with mental disorders.

**Methods.** The author reviewed the literature on the use of telemedicine and telecare as an element to support the development of deinstitutionalization of services. In addition, strategic documents on deinstitutionalization of health services at European and national level were reviewed.

**Results.** Deinstitutionalization of health and social services is a major challenge for both health and social policies and health systems in all European countries. The analysis of the literature clearly shows that telemedicine and telecare are a very good complement for the provision of health and social services due to deficits and staff shortages in the health and social care system. They are also an excellent tool to support the caregivers of these people and a tool that meets the criteria for deinstitutionalization of services. The direction of development of health and social care systems for the elderly and people with mental disorders pointed out by WHO, the EU and other international organizations is undoubtedly the one we should support, and activities in this area should be accelerated.

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### **Infodemic's Impact on Patient Behavior and Stroke Treatment During the COVID-19 Pandemic: An Analysis of Internet Searches and Clinical Data**

**Aim.** The COVID-19 pandemic has not only caused a negative impact on the pre-hospital behavior of stroke patients but also brought attention to the quality of information the public receives. The rapid and far-reaching spread of both accurate and inaccurate information about COVID-19 has been defined as an "infodemic" by the World Health Organization (WHO). Inaccurate information can lead to delays in seeking medical help, which is particularly concerning for stroke patients who require early intervention. This study aimed to analyze the correlation between active searches on the Internet for information about the healthcare system and stroke treatment possibilities during the first stages of the COVID-19 pandemic and the incidence of reperfusion therapies at a local stroke center.

**Materials.** Google search engine traffic data was collected in periods one year before the pandemic, three months preceding the outbreak, one month after the introduction of lockdown, and one month later. The data was limited to the region in which the tertiary stroke center operated. The study also retrospectively collected clinical data of stroke patients who underwent any of the reperfusion therapies in the tertiary stroke center, with regard to the thrombectomy procedure.

**Results.** The significant decrease in reperfusion therapies conducted during first month of lockdown due to the COVID-19 pandemic has been resolved. It was accompanied by a significant increase in interest in topics related to the poor epidemiological situation in the country. However, significant direct correlations between the active search for information on the Internet and the clinical characteristic of patients were not observed.

**Conclusions.** This study highlights the importance of accurate and timely information dissemination during a pandemic, particularly for stroke patients who require urgent medical attention.

Mariola Seń, PhD; Iwona Klisowska MSc, Barbara Grabowska, PhD; Agnieszka Lintowska, PhD

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### **National Health Fund apps (applications) for health monitoring and improve health: My Health Plus and My Physio Plus**

The National Health Fund supports patients' health in various ways. Two portals - NFZ.gov.pl and patient.gov.pl - provide information on the availability of services, as well as on the system's offer, ways to use it and patients' rights. Information is directed both to sick people who need treatment and healthy people who can reduce the risk of disease through a pro-healthy lifestyle. The National Health Fund Academy portal was created for the latter category of recipients. Here the patient will find knowledge about prevention and pro-healthy habits and attitudes, that is, tips how to take care of oneself, build and strengthen healthy habits and take advantage of preventive examinations. Both audiences can also use the National Health Fund Diet portal, where healthy eating habits and ready-made menus are promoted.

**The purpose** of the presentation is to point out the expansion of the National Health Fund



activities in reaching a wide range of patients in terms of the availability of diagnostic, therapeutic and rehabilitation services, as well as the promotion of preventive and health-promoting services, among other things, with technological resources in the form of apps. My Fizjo+ is an app dedicated to people struggling with back, shoulder and hip pain. The goal of the

app is to present exercises that improve flexibility and muscle strength, which, combined with self-massage, can reduce the intensity of pain. The app aims to provide the user with materials to help alleviate or eliminate pain. It contains practical tips and advice from physiotherapists to apply and use daily, such as how to sit properly behind the wheel, how to adjust the type of exercise according to the degree of pain and presents a set of exercises for 5 muscle groups for each day.

My Health+ has been equipped with a few functions such as: control of medications, monitoring of daily activity and vital signs for example: sleep, steps, blood pressure, pulse, respiration rate, body temperature, oxygen saturation and body weight. The application is a daily help and support for the patient to control every aspect of his or her health, for example, it will help to arrange a diet appropriate for a specific condition by assisting in the selection of healthier dishes, it will give necessary tips on nutritional values or sugar content of a meal.

**Summary.** The apps released by National Health Fund are modern solutions that have been designed to support patients in taking care of their daily health with practical tips. My Health Plus and My Physio Plus software will allow patients - healthy and sick - to take care of movement, sleep and diet. Any owner of an Android and iOS smartphone and tablet can use them. Both programs can be found on Google Play and the App Store.

**Key words:** aplikacja, zdrowie, monitorowanie, Narodowy Fundusz Zdrowia

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### From the Quill to the Pendrive Digital Learning Materials in Teaching Languages for Special Purposes in Higher Education in QuLL Project

**Aim.** The Erasmus+ project 'QuLL – Quality in Language Learning' was approved within the call *Strategic Partnerships for Digital Education Readiness* as it proposes a new insight into the way digital open educational resources (OER) are made available to language lecturers teaching languages for specific purposes or as foreign languages and how they can maximise

their use in a qualitative way. The project ended in February 2023. One of QuILL's main goals is to provide higher education language lecturers with a substantial number of Open Educational Resources (OER) to assist them in the teaching and learning process. Apart from that, a training package was developed to guide lecturers into the way they identify, use and create online resources. The guidelines brought into play in the e-book of the project concur with the core principles that guide our teaching practice as higher education lecturers: we want our learners to become motivated and engaged, unfettering them from narrowmindedness, fostering autonomy and critical thinking.

**Methods.** The identification of the sources was made by the experts of the partnership following a bottom up approach and the participation of a relevant number of potential beneficiaries, focusing in particular on Language for Specific Purpose (LSP). Each resource is presented both in English and the target language through a review, a case study and a guideline on how to use it. The e-learning based package addressed to university LSP lecturers is specifically aimed to guide them in innovating their language teaching methodologies through the effective use of quality digital based OER teaching sources including 2 operative tools, 2 case studies and an interactive self-assessment test. A third outcome of the project is an e-book titled Implementation of Digital language Learning Opportunities. This publication brings together contributions from the six partners that integrate the QuILL project consortium. Therefore, it consists of six chapters.

**Results.** In the QuILL portal, both language lecturers and learners will find many OER for 18 European languages, already tested and validated by students in real teaching scenarios. The OERs used for Language as a Specific Purpose described according to quality indicators: comprehensive approach, added value, motivation enhancement, innovation, transferability, skills assessment and validation, adaptability. The content of the e-learning based training package is structured in 3 modules. The content of each module follows the same structure with the combination of a readable e-text, extensive use of links to existing resources and downloadable supplementary document. The e-book, containing important theoretical and practical guidelines, is aimed at Higher Education policy makers, as well as Languages for Specific Purpose (LSP) lecturers, to improve the implementation of digital based language learning opportunities in higher education systems. It also intends to present, examine and reflect on the opportunities related to the use of digital technology in the language learning and teaching process.

**Conclusions.** Most resources found on the Internet are targeted at learners of English. This is one of the issues that QuILL addresses. The publication, an e-book on digital language

teaching addresses the process of language learning via digital resources and keywords such as “quality” “innovation”, and “digital education” are common to all of the six chapters. In the specific context of LSP, digital technologies equip teachers and students with more tools that will empower them during the learning and teaching process, so they continue to open as many doors as possible.

**Keywords:** open educational resource (OER), language for specific purposes, higher education, digital language learning, good practice

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### Internet-mediated sexuality. New opportunities and threats

The Internet is increasingly mediating more and more areas of sexuality. Nicola M. Döring distinguishes the following categories of sexuality on the Internet: sexually explicit material (erotica and pornography), sex education, sexual contacts, sexual subcultures, sex shops, and sex work (Nicola M. Döring, 2012). In each of these areas, users may find new knowledge and new ways to cope but also encounter risks. The biggest concern is the impact on children and adolescents, but adults are also not always able to use online sexual content safely. Moreover, due to the dynamic development of online tools-it's difficult to protect against anything. An example is the tools used to make sexual contact. Initially, people met and got to know each other through chat rooms, then through social media, and now - to a large extent - through dating apps, which, in turn, are being increasingly upgraded and adapted to users' needs. However, the impact of dating apps is wider than facilitating networking. Similar apps can also cause radical shifts in understanding of sexuality and intimacy (Filice, Parry, & Johnson, 2021) and increase freedom to be shallow and deceitful with self-presentation (Filice, E., Johnson, Parry, & Oakes, 2022).

**Method.** The paper draws on a review of recent research on online sexuality and observations from the practice of sexual dysfunction therapy.

**Results.** Quite a few risks of mediating Internet sexuality can be listed. One of the most common of these is adolescents' exposure to pornography (Nesi, 2022). Another- experiencing (also by children and adolescents) sexual cyber-aggression, which in turn can pose the risk of learning similar behavior and forming negative sexual attitudes (Kizilirmak, A., Sönmez, M.,

Nacar, G., & Taşhan, S.T. (2022). Teenagers point to insecurity on the Internet, which they associate with violence and pedophilia, among other things (Santos, G., 2021). Another important threat that can negatively affect the development of sexuality is the problematic use of sexual content (Wéry, Maurage, & Billieux, 2022), including, for example, the compulsive use of pornography or the use of the Internet to increase the frequency of sexual contact outside of it. One of the most challenging threats is disseminating nude/ sexual images of people without their consent (Powell, Scott, Flynn, & McCook, 2022). Young people, in particular, are sometimes unable to cope with the deep humiliation they feel due to such actions by their peers. On the other hand, skillful, conscious use of the Internet can also offer many opportunities. One is sexual emancipation (Alexander, Inglehart, & Welzel, 2020). Another is the mediation of the Internet to sustain sexual contact, such as when a partner/partner is far away, or other difficulties prevent an offline meeting. One study shows that the Internet was used during the pandemic by people doing group sex, who used Internet mediation to continue their sexual practices by complying with the isolation order (Fournier, Fulcher, Shumka, Lachowsky, 2021). The Internet can also be a space for social campaigns to protect against abuse and for sex education in the broadest sense. The results of one study on HIV risk awareness and strategies to protect against it showed that frequent use of the Internet correlates with overall greater HIV knowledge (Jones, M. U. et al. 2020).

**Key words:** Sexuality, Internet

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### **AI in medicine and the model of technology adoption on the example of the implementation doctorate program**

**Aim.** New technologies are entering almost every area of our lives at a spectacular speed. This technological revolution is also taking place in medicine. However, applying artificial intelligence (AI) algorithms in clinical practice remains challenging. The aim of the project is to develop an implementation model in an institution cooperating with the Medical University of Wroclaw, which establishes a new model of collaboration between the scientific and business communities.

**Methods.** The research is conducted as part of the participation in the Implementation Doctorate Program prepared by the Ministry of Science and Higher Education in Poland which

benefit up to 500 people annually through multistage selection. The 4-year research study allows multi-center collaboration and the creation of technology applying AI in medicine.

**Results.** The first year of the project has established partnerships in the scientific and business community, connecting experts in medicine, laboratory diagnostics, and new technologies who represent the Wroclaw Medical University, Wroclaw University of Economics and Business, and The Institute of Mother and Child in Warsaw (IMC). The project team works to develop the technology and design a model for commercial implementation, which is a significant innovation in the field of medical research.

**Conclusions.** Our concept of implementing the project in an interdisciplinary team and allowing the transfer of medical and technical knowledge, which is a high potential for the expansion of these academic disciplines. In addition, the application of the project results will power the innovation of the health sector and is a case study of the commercialization of scientific results.

**Keywords:** artificial intelligence, clinical practice, technology implementation, innovation

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### **Possibilities of telerehabilitation of children with developmental disorders and assessment of such method of therapy by their parents**

**Aim.** The aim of this study was to analyze the possibility of conducting telerehabilitation among children with developmental age disorders (by their parents), as well as to evaluate its course and effectiveness.

**Methods.** The work analyzes the possibilities of telerehabilitation among children in Poland and compares them with reports from other countries. Next to, parents of children who undergone such a therapy were asked about their opinion. A survey was conducted in a group of parents of patients rehabilitated during the pandemic via teleconsultations. The survey included questions about the advantages and disadvantages of telerehabilitation, the evaluation of its effectiveness and further prospects of such a therapy.

**Results.** 56.7% of the respondents were satisfied and 16.7% of parents were dissatisfied with this form of therapy. 60% of the examined people reported that constant contact with a physiotherapist motivated them to carry out systematic exercises with a child at home. Only

6.7% of patients did not see any progress in rehabilitation. 26.7% of people observed a very big improvement and 20% - a big improvement. In the longer time, 3.3% of the respondents declared a desire for exclusive telerehabilitation, 13.3% - would never like to take advantage of this form of therapy again. 36.7% of patient would expect hybrid therapy: some classes in the institution and some classes within the framework of teleconsultations.

### **Conclusions.**

1. Telerehabilitation can be a valuable supplement to the traditional therapy for children with developmental age disorders.
2. To ensure effectiveness, telerehabilitation requires very good cooperation between the therapist and the patient's parents and with the child himself.

**Keywords:** telerehabilitation, developmental disorders, evaluation of e-therapy, effectiveness of e-therapy, hybrid therapy

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### **Impact of the COVID-19 pandemic on patients and palliative care workers**

**Introduction.** The COVID-19 pandemic emerged suddenly, surprising healthcare systems around the world and revealing its lack of readiness to operate in such difficult conditions. It caused huge losses in the economy and education, disturbing the functioning of the entire country. It has contributed to the deaths of over 2 million people, changing the structure of many families. It also set new challenges for palliative care and its staff, creating a new group of patients with severe pneumonia and respiratory failure. Despite many new challenges, the overarching goal of palliative care has remained to relieve physical symptoms, emotional stress, and provide support to patients and their families.

**Objective of the work.** The aim of the study was to present the situation of people covered by palliative care during the COVID-19 pandemic, as well as the problems and new challenges faced by medical workers based on the latest scientific reports.

**Conclusions.** A large number of people dying from COVID-19 respiratory failure resulted in an increased demand for palliative care services. Maintaining social distance as a form of limiting the spread of the pandemic forced the introduction of new forms of contact with the patient (telepaths), but also condemned many patients to loneliness and depression.

**Keywords:** palliative care, COVID-19 pandemic

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### **The level of life satisfaction and strategies of coping with difficult situations of intensive care nurses**

**Admission.** Nurse's daily work is full of difficult and stressful situations. These situations can become dangerous to the health and quality of their life when they're unable to cope with them effectively. Therefore, it's necessary for everyone to know what stress is, when it starts to be harmful and how to cope with it. Stress can also indirectly affect the health. During stressful actions harmful behaviors may occur.

**Objective of the work.** Assessment of stress level and determining the level of self-esteem, satisfaction and standard of living of nurses working in intensive care.

**Material and methods.** The study was conducted at the University Clinical Hospital at Borowska Street 213 in Wroclaw in the form of an anonymous survey among 100 nurses working in intensive care. The survey consisted of three parts: epidemiological and demographic, Generalized Self-Efficacy Sale (GSES) and Satisfaction with Life Scale (SWLS).

**Results.** Nurses cope with stress are responsible and know that their work is very demanding. They are resourceful and able to find many solutions to emerging problems and unexpected situations. They are convinced of their effectiveness at work and in life. Despite the skills and coping with difficult situations, a good education and training, they often work at more than one regular post. Such behavior makes them insufficiently satisfied with their financial situation and life.

**Keywords:** Satisfaction, difficult situations, stress, nursing, intensive care

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## Impact of online health information on health decisions (supply and analysis for Poland)

The amount of medical knowledge on the Internet is growing systematically and there are more and more professional platforms and quasi-professional health portals, personal blogs of people experiencing suffering (pathography) and other broadcasters, providing both true and false health information. The enormous amount of information and often conflicting opinions can cause confusion and loss of trust in medical professionals and conventional medicine. As a result of existence of various professional and unprofessional, educational and commercial informative “environments”, medicine is becoming de-professionalized, which facilitates the spread of false and harmful medical myths. The content available on the Internet can influence the medical decisions made by users.

In this article we present selected data from studies on impact of online health information (OHI) on health decisions in the general population or among selected patients' groups as well. The diversity of OHI on various internet platforms and the main users' subpopulation are described. The methodology of research on the influence of the OHI on medical decisions is also briefly presented.

The different study show that the impact of information obtained online on medical decisions regarded from 11% to 80% of the population and in most studies it was between 30 and 60% (Thapa, 2021). The type of decision (choice of the type of therapy), level of health literacy and self-care or self-medication decisions (actions) were the most influenced by OHI. The paper describes the functions of OHI in the cognitive, emotional and behavioral aspects of medical decisions. The sociological point of view and research on health behavior raise questions about ethics of new media and their responsibility for the population health.





*Photo: E-methodology conference - edition 2022*