



THE ATHENS INSTITUTE FOR EDUCATION AND RESEARCH

Abstract Book

**9th Annual International Conference on
Pharmacy and Pharmaceutical Sciences
2-5 May 2022, Athens, Greece**

Edited by
Zoe Boutsoli and Olga Gkounta

2022

Abstracts
9th Annual International
Conference on Pharmacy and
Pharmaceutical Sciences
2-5 May 2022, Athens, Greece

Edited by Zoe Boutsioli and Olga
Gkounta

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Preface

This book includes the abstracts of all the papers presented at the 9th Annual International Conference on Pharmacy and Pharmaceutical Sciences (2-5 May 2022), organized by the Athens Institute for Education and Research (ATINER).

A full conference program can be found before the relevant abstracts. In accordance with ATINER's Publication Policy, the papers presented during this conference will be considered for inclusion in one of ATINER's many publications only after a blind peer review process.

The purpose of this abstract book is to provide members of ATINER and other academics around the world with a resource through which they can discover colleagues and additional research relevant to their own work. This purpose is in congruence with the overall mission of the association. ATINER was established in 1995 as an independent academic organization with the mission to become a forum where academics and researchers from all over the world can meet to exchange ideas on their research and consider the future developments of their fields of study.

To facilitate the communication, a new references section includes all the abstract books published as part of this conference (Table 1). We invite the readers to access these abstract books –these are available for free– and compare how the themes of the conference have evolved over the years. According to ATINER's mission, the presenters in these conferences are coming from many different countries, presenting various topics.

Table 1. *Publication of Books of Abstracts of Proceedings, 2014-2022*

Year	Papers	Countries	References
2022	21	11	Boutsioli and Gkounta (2022)
2021	19	9	Papanikos (2021)
2020	22	12	Papanikos (2020)
2019	27	16	Papanikos (2019)
2018	33	16	Papanikos (2018)
2017	39	17	Papanikos (2017)
2016	35	18	Papanikos (2016)
2015	37	19	Papanikos (2015)
2014	33	15	Papanikos (2014)

It is our hope that through ATINER's conferences and publications, Athens will become a place where academics and researchers from all over the world can regularly meet to discuss the developments of their

disciplines and present their work. Since 1995, ATINER has organized more than 400 international conferences and has published over 200 books. Academically, the institute is organized into 6 divisions and 37 units. Each unit organizes at least one annual conference and undertakes various small and large research projects.

For each of these events, the involvement of multiple parties is crucial. We would like to thank all the participants, the members of the organizing and academic committees, and most importantly the administration staff of ATINER for putting this conference and its subsequent publications together. Specific individuals are listed on the following page.

Zoe Boutsoli & Olga Gkounta
ATINER

9th Annual International Conference on Pharmacy and Pharmaceutical Sciences, 2-5 May 2022, Athens, Greece

Organizing & Scientific Committee

All ATINER's conferences are organized by the Academic Council. This conference has been organized with the assistance of the following academic members of ATINER, who contributed by reviewing the submitted abstracts and papers.

1. Gregory T. Papanikos, President, ATINER & Honorary Professor, University of Stirling, U.K.
2. Robert Sindelar, Head, Pharmaceutical Unit, ATINER & Professor and Dean Emeritus Faculty of Pharmaceutical Sciences, The University of British Columbia, Canada.

FINAL CONFERENCE PROGRAM

9th Annual International Conference on Pharmacy and Pharmaceutical Sciences, 2-5 May 2022, Athens, Greece

PROGRAM

Monday 2 May 2022

09.00-09.30
Registration

09:30-10:00

Opening and Welcoming Remarks:

- **Gregory T. Papanikos**, President, ATINER.
 - **Vickie Hughes**, Director, Health & Medical Sciences Division, ATINER & Assistant Professor, School of Nursing, Johns Hopkins University, USA.
 - **Robert Sindelar**, Head, Pharmaceutical Unit, ATINER & Professor and Dean Emeritus Faculty of Pharmaceutical Sciences, The University of British Columbia, Canada.
 - **Andriana Margariti**, Head, Medicine Unit, ATINER & Professor, Queen's University Belfast, UK.
-

10:00-11:30 MORNING PRESENTATIONS

- **Anastasia Mallidou**, Associate Professor, University of Victoria, Canada.
Title: The Research Competencies Assessment Instrument for Nurses (RCAIN) in Greece.
 - **Bertha Ochieng**, Professor, De Montfort University, UK.
Title: A Case Study of a Pilot Smart Home Monitoring System with Older Adults Living Alone in East Midlands.
-

11:30-13:00 NOON PRESENTATIONS

- **Dzifa Dordunoo**, Assistant Professor, University of Victoria Canada.
Title: Consenting Patients about Hypersensitivity Reactions to Metals in Implantable Devices.
 - **Mingzhong Li**, Professor, De Montfort University, UK.
Title: Insight into Pharmaceutical Cocrystal Dissolution in the Presence of a Polymer in Solution.
-

13:00-13:30

Yelda Komesli, Assistant Professor, Altinbas University, Turkey.

Title: Anti-Inflammatory and Immunomodulatory Effects of Olmesartan Medoxomil as a Vitamin D Receptor Agonist and Angiotensin II Receptor Blocker in COVID-19 Disease.

13:30-14:00

Jean Davison, Associate Professor, University of North Carolina, USA.

Title: Interprofessional Service Learning Focused on Migrant Latinx Health to Improve Health Outcomes.

14:00-15:00 Lunch

15:00-15:30

Savina Elitova, PhD Student, Medical University of Sofia Bulgaria.

Title: Bulgarian Experience in Clinical Pharmacy Education and Training – Pros and Cons.

15:30-16:00

Viktoria Georgieva, PhD Student, Medical University Sofia, Bulgaria.

Title: State-Of-Art and Achievements of Oncology Pharmacy in Bulgaria – A Brief Overview.

16:00-16:30

Denitsa Panayotova, PhD Candidate, Medical University of Sofia, Bulgaria.

Title: Study of the Healthcare Professionals Awareness on Safety and Risk Minimization Measures Related to the Approved COVID-19 Vaccines.

16:30-17:00

Robert Sindelar, Head, Pharmaceutical Unit, ATINER & Professor and Dean Emeritus Faculty of Pharmaceutical Sciences, The University of British Columbia, Canada.

Title: The Pharmacist and RNA-Based Medicines.

17:00-17:30

Almudena Moreno, PhD Student, Public University of Navarra, Spain.

Title: Trend in Cancer Mortality According to Area of Residence in Spain.

17:30-18:00

Zoe Boutsoli, Vice President of Publications, Athens Institute for Education and Research (ATINER).

Victoria Bigelow, Fulbright Scholar, Athens Institute for Education and Research (ATINER).

Olga Gkounta, Researcher, Athens Institute for Education and Research (ATINER).

Title: Essays on COVID-19 Research.

20:00-22:00

Greek Night

Tuesday 3 May 2022

08:00-11:00 Urban Walk

11:00-13:30 MORNING / NOON PRESENTATIONS

- **Charlotte Wool**, Associate Professor, York College of Pennsylvania, USA.
Title: "I would do it all over again": Cherishing Time and the Absence of Regret in Continuing a Pregnancy After a Life-limiting Diagnosis
 - **Mari Salminen-Tuomaala**, Lecturer, Seinäjoki University of Applied Sciences, Finland.
Title: How Can Virtual Reality Glasses and Virtual Learning Material be Useful for Final Stage Nursing Students?
 - **Annika Tamme**, Junior Lecturer, University of Tartu, Estonia.
Toivo Aavik, Assistant Professor, University of Tartu, Estonia.
Title: Manipulating in Therapeutical Settings with Trait and State Sexual Desire of People over 45 Years of Age.
 - **Ton Van Oostrum**, Independent Expert, The Netherlands.
Title: Shared Decision Making, Trial and Error in Occupational Medicine and New Opportunities after the Pandemic.
 - **Zahra Khazaeipour**, Professor, Tehran University of Medical Sciences, Iran.
Title: Indirect Effects of COVID-19 in Referring Patients to Hospitals in Iran.
-

13:30-14:30 Lunch

14:30-16:00 AFTERNOON PRESENTATIONS

- **Johannes Khinast**, Director, Institute of Process and Particle Engineering, Austria.
Title: High Speed Technology for the Manufacturing of Next Generation Drugs.
 - **Presentation cancelled due to unavailability of the presenter**
 - **Presentation cancelled due to unavailability of the presenter**
-

16:00-16:30

Thiwawan Thepha, Lecturer, Khonkaen University, Thailand.

Title: The Effectiveness of Breastfeeding Facebook Program to Knowledge, Attitude, Behavior of Father to Support 6-Month Exclusive Breastfeeding in Middle Income Country.

16:30-17:00

Pirkko Kivinen, Senior Lecturer, Tampere University of Applied Sciences, Finland.

Tarja Heinonen, Development Manager, Tampere University of Applied Sciences, Finland.

Title: Experiences from the Work of Social and Health Care Personnel during the COVID-19 Pandemic in Finland.

17:00-17:30

Hannele Laaksonen, Principal Lecturer, Tampere University of Applied Sciences,
Finland.

Title: Finnish Remote Leadership in Home Care during the Pandemic.

17:30-18:00

Dewy Nijhof, Researcher, De Montfort University, UK.

Title: The Application of Digital Health Technology in a Primary Healthcare Setting.

20:00-21:30

Dinner

Wednesday 4 May 2022
Educational Islands Cruise
Mycenae Visit

Thursday 5 May 2022
Delphi Tour

Zoe Boutsoli

Vice President of Publications, Athens Institute for Education and
Research (ATINER)

Victoria Bigelow

Fulbright Scholar, Athens Institute for Education and Research
(ATINER)

&

Olga Gkounta

Researcher, Athens Institute for Education and Research (ATINER)

Essays on COVID-19 Research

COVID-19 has entered its third year and the effects have been devastating. The obvious one is the loss of lives which by now account for millions of people worldwide. The world academic community reacted quickly, resulting in a mass of publications on the various aspects of the pandemic, including the most important aspect of which is the medical and health effects and the development of vaccines to fight the virus. The plethora of studies on COVID-19 makes a comprehensive survey almost impossible. Instead, this survey provides a selective review of a sample of 31 studies that resulted in a book publication based on articles that have been published in various ATINER academic journals since the beginning of the COVID-19 pandemic. The aim of this survey is to summarize the main research findings of these studies and highlight their major conclusions. These studies cover research related to COVID-19 from a variety of research fields that include Health; Mass Media and Communication; Sociology; Business and Economics; Tourism; Education; and Law.

Jean Davison

Associate Professor, University of North Carolina, USA

Interprofessional Service Learning Focused on Migrant Latinx Health to Improve Health Outcomes

Farmworkers often have unmet healthcare needs due to limited access to care, low income and health literacy, uninsured, language/ cultural barriers, discrimination/isolation and food/housing/transportation limitations along with migratory movement. Common health concerns include occupational health risks, accidents, muscular/skeletal injuries, pesticide/tobacco sickness, mental health/substance abuse, chronic diseases such as hypertension and diabetes, infectious diseases such as COVID-19, along with often unmet needs for routine preventive care. There are health inequities associated with being a migrant farmworker, especially related to COVID-19 and other diseases such as diabetes. For example, policies such as congregant living for farmworkers and lack of paid sick leave, put essential farmworkers at risk for COVID-19. Additionally, Hispanic farmworkers are about 50% more likely to die from diabetes or liver disease than whites. Stress and depression are often experienced when separated from their families and culture and there is both psychological and physical trauma associated with migration. Barriers to referrals and follow up care is often problematic, making management of mental health, infectious diseases such as COVID-19, TB and/or chronic diseases such as diabetes difficult to manage. Additionally, recovery from a natural disaster, such as a hurricane with flooding, impacts health due to injuries, loss of jobs/income, health care, medications, unhealthy water, increased mosquito borne diseases and increased stress and depression associated with all the loss.

As faculty, we expect our graduates to practice with a global mindset, providing culturally appropriate care to achieve health equity locally and globally. This requires inter-professional team-based care that focuses on understanding the impact of social determinants of health (SDOH) and responsiveness to address these SDOH in effective ways.

Purpose of this presentation is to:

1. Disseminate best practices for advance practice nurses leading inter-professional service-learning teams and quality improvement initiatives, working with community outreach workers to improve health equity and outcomes for migrant farmworkers.

2. Discuss the importance of global health experiences across the curriculum and give examples from a twelve-year inter-professional service-learning course focused on migrant and vulnerable population health outreaches to support our students achieving a global mindset to promote health equity locally and globally.

Several team-based quality improvement projects led by nurses working with community outreach workers will be exemplified such as understanding and supporting the role of the community outreach workers, providing self-management support to farmworkers with diabetes, hypertension, depression, providing vaccinations to farmworkers, offering telehealth visits and advocating for policies to improve living and working conditions for the essential workers.

Key learning – culturally appropriate inter-professional team-based care can target common health conditions such as diabetes, hypertension, and depression to improve outcomes in farmworkers and prevent the spread of communicable diseases such as COVID-19.

Dzifa Dordunoo

Assistant Professor, University of Victoria Canada

Gweneth Doane

Emeritus Professor, University of Victoria Canada

Anastasia Mallidou

Associate Professor, University of Victoria, Canada

Jett Carey

Student (BSN), University of Victoria, Canada

&

Adrienne Lagura

Student (MSN-NP), University of Victoria, Canada

Consenting Patients about Hypersensitivity Reactions to Metals in Implantable Devices

Many cardiac, orthopedic, gynecological, and dental implantable devices are composed of metals. The metals in these implantable devices are essential for proper bodily functions but exposure at sufficiently high enough levels for long period of time can trigger delay immunological response known as metal hypersensitivity. It is unknown whether the metal composition of the implantable device and the risk of hypersensitivity reaction is discussed as part of the consenting process. Moreover, it is unknown how the knowledge of metal hypersensitivity would influence the patients' decision to proceed with the planned procedure. Thus, we undertook this interpretative phenomenology study informed by patient-oriented research framework to determine what information would have helped patients with experience of metal hypersensitivity make an informed decisions about implantable devices. We interviewed 16 people with experiences of metal hypersensitivity from 5 countries.

Majority of the participants were biological females between the ages of 30 to 60. The findings confirmed that metal hypersensitivity is not discussed as part of the consenting process. The participants want: 1) information about compositions of the device, 2) pre-operative hypersensitivity screening, 3) discharge information about signs and symptoms of metal hypersensitivity, 4) routine monitoring to identify complications and 5) increased awareness among healthcare workers in the outpatient settings about metal hypersensitivity. Some participants would not have undergone the procedure in retrospect while others would have proceeded only with better post-operative monitoring.

Health systems need to increase awareness and screening of metal hypersensitivity among people receiving implantable devices. There is

a need for increase data collection and use of health information technology to support the long-term monitoring of the people's experiences following the device implant.

Savina Elitova

PhD Student, Medical University of Sofia Bulgaria

&

Ilko Getov

Professor, Medical University of Sofia, Bulgaria

Bulgarian Experience in Clinical Pharmacy Education and Training – Pros and Cons

In the recent years we witness a dynamic change of the pharmacy profession towards more clinical orientation. Still, there are differences in the clinical pharmacy (CP) education, training and practice between countries. One potential reason is the lack of research in the field and our study will try to give insights of the development and the current state-of-art of CP education and training in Bulgaria.

To review, describe and evaluate the origin, development and contemporary status of the CP education and training in Bulgaria. We are going to focus on the main evolutionary points for the emergence and development of the education and training and to bring forward the main pros and cons.

As a baseline for the analysis of the contemporary status of the CP education and training, we used the data from a survey conducted by the European Society of Clinical Pharmacy (ESCP) between October 2018 and January 2019. Data was received from 36 countries in Europe (incl. Bulgaria). The answers were further validated locally and additional data and information was retrieved from the Ministry of Health data-base and the Universities providing education. A SWOT analysis was carried out on the contemporary status of the CP education and training in Bulgaria.

The CP education in Bulgaria originated in early 90s when a postgraduate specialization in CP was established. Despite the availability of clinical pharmacists, between 1994 and 2015 there were only few clinical pharmacy services provided, mainly in the hospitals. From 2015 onwards, with an update in the local regulation, hospitals with more than 400 beds or 10 wards or oncology/haematology ward should have at least one certified clinical pharmacist, which led to an increased interest in the specialty from the professionals. Also, since 1994, the curriculum (both undergraduate and postgraduate) and the regulations had been encountering dynamic changes to allow better training of future staff and more streamlined approach to clinical pharmacy activities. Currently there are 5 Faculties of Pharmacy in Bulgaria, all of them teach some CP topics to the undergraduate

students, but only 3 of them provide a postgraduate education. One university had established an undergraduate specialization, which was found to be a unique approach. Additionally, there are PhD programs and CPD courses, offered by some professional organizations of the pharmacists. Our SWOT analysis of the contemporary status of the CP education and training showed that, alongside with other, there is a robust university education, emerging training opportunities, but also lack of evenly spread and unified practice and poor understanding of the role of the clinical pharmacist.

The CP education and training in Bulgaria started almost 30 years ago, however, the practical realization of the clinical pharmacists was underdeveloped. In the recent years, some changes in the local regulation and updates in the educational programs had modernized the specialty, allowing better opportunities. There are still a lot of obstacles to overcome in order to boost the CP in Bulgaria.

Viktoria Georgieva

PhD Student, Medical University Sofia, Bulgaria

Tsvetanka Valchanova

Hospital Pharmacy Manager, National Specialized Hospital for Active
Treatment of Hematological Diseases, Bulgaria

Violeta Getova

Chief Assistant Professor, Medical University of Sofia, Bulgaria

Maria Kamusheva

Associate Professor, Medical University of Sofia, Bulgaria

&

Ilko Getov

Professor, Medical University of Sofia, Bulgaria

**State-of-Art and Achievements of Oncology Pharmacy in
Bulgaria – A Brief Overview**

Oncology Pharmacy practice covers a number of medical activities that provide evidence-based specialized care to oncology patients in order to optimize the results of anticancer therapy and quality of life. The aim of the study is to analyze the development of oncology pharmacy practice and standards in Bulgaria.

A documentary and data-base analysis of current pharmaceutical and healthcare sources in Bulgaria was performed. All relevant legislative documents related to hospital and clinical pharmacy were identified and analyzed: Guidelines for Good Pharmacy Practice (2020), National Framework Agreement on hospital care (2020-2022), Ordinance 10/2009 for reimbursement of medicines, Ordinance 4/2009 for prescribing and dispensing of medicines in Bulgaria.

The development of oncology pharmacy in Bulgaria can be traced through the amendments to a number of regulatory documents throughout the years. They all expand the range of activities for quality assurance and define guidelines and rules for the work of hospital pharmacists in oncology facilities. According to legislative changes in October 2015 cytostatics must be prepared in the hospital pharmacies for direct application to the patients. Since 2009, the principles for work of hospital pharmacists laid down in the Good Pharmacy Practice have expanded significantly. The activities of the hospital pharmacists, including the preparation of cytostatics, were enlarged from 2016. This laid the foundation of centralized preparation of cytostatics, subjected to conditions that ensure quality of the dosage forms and safety for the pharmacists. Main rules covering the application of specialized software, journal for dissolving medicinal products and inventory of

unusable residues of drugs in order to achieve better accountability and control over the use of oncological medicinal products have been implemented. Adequate patient care was obtained by providing opportunities for continuous professional development of pharmacists in the field of oncology, oncohematology and clinical pharmacy. Hospital pharmacies at oncology medical centers were accredited for pre-diploma pharmacy students' traineeship and post-graduate specialization.

The development of oncology pharmacy in Bulgaria is based on the Quality Standard in the field of oncology pharmacy (QUAPOS), developed and approved by the European Society of Oncology Pharmacy (ESOP) and adapted by Bulgarian Society of Oncology Pharmacy. Oncology pharmacy in Bulgaria has undergone significant changes in the last decade, which takes into account the benefits to society as a guarantee of better treatment through the precise skills and competencies of oncology and clinical pharmacists. Moreover, reduction of the anticancer medicinal products' costs and the smaller amount of destroyed drug residues point out even more benefits of the centralized preparation of expensive drugs for direct application to the patients.

Zahra Khazaeipour

Associate Professor, Tehran University of Medical Sciences, Iran

Indirect Effects of COVID-19 in Referring Patients to Hospitals in Iran

COVID-19 has captured the world. We hypothesized that this pandemic reduced referral of other non-COVID-19 patients to the hospitals or clinics, including cardiovascular, diabetes mellitus, neurological, neurosurgical diseases, gynecological and perinatalogical referrals.

In this retrospective study, referrals of patients in a large teaching hospital of Tehran University of Medical Sciences (TUMS) were compared from February 20 to May 20, 2020, with the same period in 2019. Finally, referral trends in 2020 were compared with the COVID-19 admission pattern. The descriptive analyses were reported as number of referrals to clinics.

Total admissions to all clinics declined about 65% in 2020 compared to 2019. On the subject of obstetrics and gynecology, the reduction in referrals to the gynecology clinic was more than gynecologic oncology and perinatology. The COVID-19 referral pattern was conversely linked to gynecology-related admissions.

Heart surgery clinic displayed the highest decline (477 vs 1463, -67%) and diabetes clinic experienced the lowest decline (403 vs 840, -52%). Declining trend was also observed in other three clinics (-64-66%).

As the pandemic situation makes patients hesitant to go to the hospitals or not, health policymakers should consider other non-COVID issues, including maternal and fetal concerns. Especially Women can be at risk in limited use of health services. Providing safe places for other patients to visit is a goal that can be achieved through developing guidelines for nosocomial hygiene and training informed healthcare staff. Moreover, non-urgent visits should be avoided or postponed. This issue calls for new strategies, including telemedicine in situations similar to the current pandemic to both identify and manage such conditions. During an infectious epidemic, steps must be taken to ensure that the care and treatment of other diseases is not compromised.

Johannes Khinast

Director, Institute of Process and Particle Engineering, Austria

**High Speed Technology for the Manufacturing of Next
Generation Drugs**

The current Corona crisis has drastically shown us, to what great extent Europe depends on threshold countries such as China and India in terms of production of drugs and medical devices. In a globalized world complete self-sufficiency is – of course – neither possible, nor desirable. However, the current situation shows the dire need for Europe to become as independent as possible and to bring API production back to Europe – not only to master the current crisis, but also to be able to react fast, efficient and autonomous in case of a new health crisis in the future and thus, save human lives. RCPE is planning a new production facility for oral dosage forms (tablets and capsules), which will allow to manufacture high-quality emergency-drugs (e.g., against COVID-19) within a few weeks as soon as a potent API has been identified.

However, it is obvious that the current pandemic cannot be ended solely by vaccines: Not only do vaccines lose efficacy as soon as the virus changes (“escape”), manufacturing is slow, costly and poses significant logistic challenges. In addition, 20% to 50% of the population reject vaccines. Hence, drugs that focus on reducing damage by virus-associated inflammation and/or slow down virus replication/entry need to be an equal weapon against the Corona virus. It is important to make sure that there are not only highly-efficient drugs available but also the technology to produce them at the necessary speed. The major advantage of RCPE’s High-Speed Technology compared to the traditional approach is the fact that the material flows through the system similar to an assembly line, while the quality of the product is checked in real-time by online sensors and not via lengthy quality lab assessment (Continuous Manufacturing). Production costs can be kept low, as variations in quality are avoided, production plants can be kept small and storage costs are low. This will enable Europe to compete with low-wage countries like China and India while making the drugs affordable for every patient.

Pirkko Kivinen

Senior Lecturer, Tampere University of Applied Sciences, Finland

Tarja Heinonen

Development Manager, Tampere University of Applied Sciences,
Finland

&

Hannele Laaksonen

Principal Lecturer, Tampere University of Applied Sciences, Finland

**Experiences from the Work of Social and Health Care
Personnel during the COVID-19 Pandemic in Finland**

The social and health sector operates in an increasingly decentralized organization, where the work units are often geographically dispersed. This emphasizes the need for remote management and remote management skills, as well as working remotely. The reform of the social and health care sector in Finland requires the management of digital devices and platforms, as well as good interaction and communication skills, even remotely.

The goal of the Nationally project, Remotely more - work in social and health care is changing (2019-2022), funded by the national Social and Health Ministry, is developing employee well-being, work management and productivity. The project is coordinated by Tampere University of Applied Sciences and co-implemented by the University of Lapland, the University of Eastern Finland and Satakunta University of Applied Sciences.

In the spring of 2021, a pandemic-themed survey were conducted in the project. The survey were sent to 301 participants of the project and 113 responses were received, with a response rate of 38. The content themes of the survey were: Work during the COVID-19 pandemic, Management style and working conditions, digitalization of work in the social and health sectors, and conflict management and work atmosphere. The key research question is, how staff have learned to use digital tools and operate remotely.

Preliminary results show that remote meetings and remote interaction have increased significantly, as well as remote management and teleworking. 71% of respondents are willing to continue working remotely. The use of digital media has increased by 94%. Less than half believes that the staff has sufficient skills and abilities to use digital tools. 66% felt that close interaction with co-workers had decreased and 63% felt that the physical presence of the supervisor had decreased.

About 30% of respondents felt that the supervisory was not sufficiently present and reachable.

Respondents communicated more typically with telephone, e-mail, Teams platform, video conferencing platform, WhatsApp, Chat text message, and electronic calendar. Less than half of the respondents felt that there was no gossiping and talking behind their backs in the work community. More than 90% felt that there was also laughter in the work unit and an understanding of humor, supporting and helping others. The responses highlighted a significant increase in staff fatigue and workload during the pandemic.

The results clearly show that during the pandemic, the use of digital tools has increased and interaction with co-workers has decreased. Two-thirds of respondents want to continue working remotely.

Yelda Komesli

Assistant Professor, Altinbas University, Turkey

Anti-Inflammatory and Immunomodulatory Effects of Olmesartan Medoxomil as a Vitamin D Receptor Agonist and Angiotensin II Receptor Blocker in COVID-19 Disease

Prodrug Olmesartan Medoxomil (OM) is an angiotensin II receptor blocker (ARB) and a VDR agonist. Reducing the inflammation and improving the immune system OM prevents organ damage. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) which is the causative agent of COVID-19 disease enters host target cells using ACE2 as cell surface receptor. Angiotensin II receptor blockers (ARBs) can raise serum and tissue levels of the membrane-bound form of monoxypeptidase angiotensin converting enzyme 2 (ACE2). Increased ACE2 activity causes the balance in the RAAS to shift towards the positive ACE2-Ang-(1-7). Therefore it can be useful with anti-inflammatory, anti-fibrotic and anti-oxidative stress signals in the treatment of COVID-19. OM is also known to have adverse effects, such as celiac-like enteropathy which was accepted by the FDA. The mechanism of OM's intestinal injury is thought to be the excessive consumption of the enzymes POX1 and carboxymethylenebutenolidase, which are also responsible for the the digestion of gliadin during the hydrolysis of the drug. Cell-mediated immune response and genetic predisposition are the other factors. Our histopathological findings of olmesartan-induced celiac-like enteropathy in rat intestines were increased mononuclear cell infiltration and villous atrophy. In this study these various action mechanisms of OM and its possible effectiveness in COVID-19 disease were discussed. The findings of our rat intestines after exposure to OM-Suspension supported and correlated clinical findings of OM. In conclusion, by making extensive evaluations, OM can be a promising immuntherapeutic and healing agent in COVID-19 treatment.

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**Finnish Remote Leadership in Home Care during the
Pandemic**

This study was conducted as part of the national *The More Remotely – work in social and health care is changing* project (2019–2022). The purpose of this qualitative study was to clarify how functional e-leadership works from the perspective of superiors and to gain new information on the functionality and development needs of e-leadership. The data consisted of the material collected via a group-based themed interview, memoranda written by members of the training groups and assignments submitted by the participants. The data were analyzed through material-driven content analysis.

The results show that e-leadership is based on the same principles as good leadership in general: communality, trust, interaction and clear ground rules. When these sections are in order, e-leadership works. Positive sides of e-leadership that emerged include faster, real-time sharing of information and the decoupling of work from a specific place. Work was seen as more efficient and productive. The greatest challenges to e-leadership are problems related to technology, such as failing programs and devices, constant changes and a lack of guidance. e-leadership was seen as increasing anonymity and distance within the workplace. Superiors felt that physical meetings were needed to support e-leadership.

Central development proposals included familiarizing people with the culture of e-leadership and increasing knowledge and use of various programs and devices. There is also a need to clarify the ground rules, scheduling and practices of remote conferences and to constantly gather feedback on the functionality of e-leadership. Teaching about e-leadership as part of basic studies in the social and health care field would prepare future professionals to being led remotely.

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Insight into Pharmaceutical Cocrystal Dissolution in the Presence of a Polymer in Solution

Pharmaceutical cocrystals have attracted remarkable interests for enhancing solubility and dissolution rates of poorly water-soluble drugs. A highly supersaturated solution concentration, which is significantly greater than the equilibrium saturation concentration of the parent drug, can be generated due to rapid dissolution of cocrystals, which is a key requirement for improved drug oral absorption. However, maintaining such a supersaturated state is challenging because of the tendency for rapid precipitation of a more stable form of the parent drug during dissolution. In order to maximize the potential of cocrystals, it is critical to include inhibitors in a formulation to prevent or delay the precipitation of the parent drug during dissolution. Although polymeric crystallization inhibitors have been extensively studied in many other systems, in particular amorphous solid dispersions, such studies are still rare for cocrystal based formulations.

In this study, effects of three polymers, polyethylene glycol (PEG), polyvinylpyrrolidone (PVP), and copolymer of vinylpyrrolidone/vinyl acetate (PVP-VA), on the dissolution behavior of the cocrystals of flufenamic acid with theophylline (FFA-TP CO) and nicotinamide (FFA-NIC CO) were investigated at multiple length scales. At the molecular level, the interactions of crystal surfaces with a polymer were analyzed by observing etching pattern changes using atomic force microscopy. At the macroscopic scale, dissolution rates of particular faces of a single crystal were determined by measurement of the physical retreat velocities of the faces using optical light microscopy. In the bulk experiments, the FFA concentration in a dissolution medium in the absence or presence of a polymer was measured under both sink and nonsink conditions. It has been found that the dissolution mechanisms of FFA-TP CO are controlled by the defect sites of the crystal surface and by precipitation of the parent drug FFA as individual crystals in the bulk fluid. In contrast, the dissolution mechanisms of FFA-NIC CO are controlled by surface layer removal and by a surface precipitation mechanism, where the parent drug FFA precipitates directly onto the surface of the dissolving cocrystals. Through controlling the dissolution environment by predissolving a polymer, PVP or PVP-VA, which can interact with the crystal surface to

alter its dissolution properties, improved solubility, and dissolution rates of FFA-TP CO and FFA-NIC CO have been demonstrated.

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The Research Competencies Assessment Instrument for Nurses (RCAIN) in Greece

Evidence-based practice (EBP) in health is "the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients". However, it is taken for granted that nurses and other healthcare professionals have the research competencies needed to use research-based knowledge in their practice. Initiatives of capacity building efforts that can influence research use into practice in each stage of the knowledge translation (KT) process are limited. Assessing nursing research capacity may provide information and contribute to the development of nursing research educational programs and the design of targeted interventions to promote research activities and competencies that potentially improve quality of nursing practice and patient care. The purpose of this study was to gain information on the level of research knowledge and skills held by registered nurses and allied healthcare professionals (e.g., dietitians, midwives, physicians); and to evaluate the psychometric properties of the newly developed instrument that was distributed in Greek healthcare professionals. Our main research objective is to provide the instrument for use by healthcare employers, educators and practicing healthcare professionals themselves. Our target population was registered nurses (RNs) and other healthcare professionals employed in any healthcare facility for more than six months, who were engaged in clinical practice, leadership, education, administration, and/or research. Nursing practice informed by evidence is a professional standard in any area of interest (i.e., clinical, leadership, education, administration, research); and thus, our study may guide RNs, educators and employers to help nurses fulfill this standard for EBP. We collected the data using the RCAIN survey (19 items). In total, 883 participants completed the RCAIN survey questionnaire in 33 health organizations in North Greece and Broader Area of Athens. The

majority of participants (84%) were 50 years old or younger; while 686 (82.4%) were females. The overall reliability of the RCAIN survey was a Cronbach's alpha (α) of 0.944. This self-report instrument included the following subscales, number of items, and internal consistency coefficients: knowledge (8 items, $\alpha = 0.926$), skills (6 items, $\alpha = 0.911$), and application of knowledge and skills (5 items, $\alpha = 0.914$). The content validity was examined when we developed the instrument (published elsewhere). The criterion-related validity was assessed using the 8-item Research Utilization (RU) by Nurses survey, which was scored on a five-point Likert scale (1 = use of research less than 10% of the time to 5 = use of research almost 100% of the time). We examined the associations between each instrument's factor and the overall, instrumental, and direct research use. The predictive criterion validity of the RCAIN was strengthened by using the RU by Nurses survey to predict potential future performance of participants in using research findings in their practice. A factor analysis indicates the suitability of the data for structure detection. Specifically, three factors (i.e., knowledge, skills, knowledge application) were revealed with higher than .600 eigenvalues each factor. Healthcare institutions can use the RCAIN tool to achieve consistent implementation and sustainability of EBP, high quality health outcomes and efficient system performance.

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Trend in Cancer Mortality According to Area of Residence in Spain

The objective of this study was to estimate the trend in cancer mortality according to the rural or urban area of residence in Spain between the years 2003 and 2018.

We selected all deaths assigned to the International Classification of Diseases (ICD-10) for the total diabetes number of malignant tumors. The population, the number of deaths and the population according to the age, sex and population size of the municipality of residence have been obtained from the National Institute of Statistics. The size of the municipality of residence has been grouped into three categories: less than 10,000 inhabitants (rural areas), between 10,000 and 100,000 inhabitants (small urban areas) and more than 100,000 inhabitants (large urban areas). In each area we have calculated the average annual percentage change in mortality rate (APCM).

Between 2003 and 2018 the APCM in the mortality rate from cancer in large urban, small urban and rural areas was respectively -1.6, -1.4 and -0.7 in men, and -0.7, -0.6 and -0.3 in women.

Rural areas showed less decrease in mortality from cancer than urban areas. Both in rural and urban areas mortality fell more for men than for women.

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The Application of Digital Health Technology in a Primary Healthcare Setting

Increasing pressure threatens to overwhelm primary care services, affecting their ability to give each patient satisfactory medical help and to effectively pose as gatekeepers to specialised care services. As part of the National Health Service's Five Year Forward View, there is a commitment to improving access to primary care and the utilization of technology in healthcare. A promising approach to mitigating this pressure is the use of online medical consultation, or e-consultation. Although generally deemed acceptable and useful, this approach comes with challenges regarding implementation, accessibility, and sophistication. This study investigated the utility and effectiveness of an online consultation system in primary care services in the UK. Seven GP practices in the East-Midlands who use an online consultation system participated in the study and a retrospective review was undertaken of 189 patients' records over the period of five months, exploring the number of consultations, patient outcomes, quality of care and prescribing between online consultations and traditional primary care services. The study focused on seven predefined indications (tonsillitis, cough, UTI, acne, vaginosis, sinusitis, eczema) that pose a high burden on practices. Exploratory data analysis and descriptive statistics were derived using SPSS. Overall, results showed a positive reception and usage of the online consultation platform. Patients switched between using the online platform and traditional primary care services, suggesting they used whichever was more convenient at the time. Moreover, patients used the online platform both for existing conditions and new conditions, which suggests they have confidence in

the quality of care. Follow-up activity occurred for the majority of patients (87,3%), of which 66.1% had at least one follow-up visit for the same condition as the initial online consultation. If patients were prescribed medication for their condition, this was mostly done in the first follow-up visit and the first follow-up visit was mostly face-to-face. However, overall most follow-up visits consisted of accessing the online consultation system either for a consultation or a pharmacy request. This study offers a detailed description of patients' utilization of online consultation systems and their following activity in primary health care services (for both the online consultation system and traditional primary care services) for up to three months after the initial online consultation. These results are matter for reflection on the utilization of healthcare services. For example, follow-up activity may indicate adherence to best practice guidelines, may reflect normal diagnostic flow (in which multiple consultations lead to a diagnosis) or a patients (in)ability to articulate signs and symptoms or to classify their own condition. The usage patterns established in the study along with the reported patient satisfaction suggest that the use of online GP consultation is both acceptable and effective. Thus, online GP consultation has the potential to relieve pressure placed on traditional primary care services. However, this study also found areas for consideration when implementing online consultations, such as concerns regarding patient verification, simplicity of the user interface, and the appropriateness of online consultation for certain conditions.

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A Case Study of a Pilot Smart Home Monitoring System with Older Adults Living Alone in East Midlands

This study aimed to present three case studies of a smart home monitoring system with older adults living alone. It explores the older adults' and their next-of-kin's experiences of using smart home technology. The technology unobtrusively monitors the older adult's physical functional ability to undertake daily activities at home by installing sensors in strategic places within the home and connecting smart sockets to everyday appliances that feedback to an app used by next-of-kin. Participants comprised three family units: three older adults (female, 72-82 years old) with a history of long-term comorbidities and who lived alone, along with their next-of-kin (n=4, female, 40-55 years old). We utilised a case study approach to conduct One-to-one in-depth interviews to explore participants' experiences before installation and at three-and eight months post-installation. Interview data were analysed using thematic analysis revealing themes of social isolation, loneliness and resilience at baseline interviews; active social engagement, feelings of security and social support and promotion of healthy physical behaviour at post-installation interviews. Results suggest that sensors provided feelings of security and insight into older relatives' routines and the challenges they experienced. The findings highlighted the benefit of unobtrusive smart home technologies and their effects on family relationships and the promotion of behavioural changes related to health.

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**Study of the Healthcare Professionals Awareness on Safety
and Risk Minimization Measures Related to the Approved
COVID-19 Vaccines**

The SARS-CoV-2 pandemic became one of the greatest challenges the world is facing in modern times. The development and approval of COVID-19 vaccines are seen as a way to overcome the pandemic. The purpose of this study is to analyze the awareness of healthcare professionals regarding the benefit/risk balance, overall safety and risk minimization measures related to the COVID-19 vaccines.

We started international online survey in Q3 2021, which is still ongoing, to assess the awareness of healthcare professionals regarding safety and risk-minimization measures related to the EMA approved COVID-19 vaccines. We plan to compare the results with previously conducted survey on national level in Bulgaria. The used method is indirect questionnaire to perform the assessment. The questionnaire contains 6 open and 19 closed questions and collects demographic data (age, gender, level of education, working place, etc.) and data for the level of knowledge of vaccine mechanism of action, awareness of risk minimization measures and sources' used of safety information.

So far, more than 30 healthcare professionals from 17 countries in Europe (United Kingdom, Czech Republic, Slovenia, North Macedonia, Italy, Romania, Croatia, France, Bosnia and Herzegovina, Serbia and Albania), North America (United States), Asia (India, Qatar, Israel, United Arab Emirates) and Africa (Egypt) have participated in the study. Preliminary data shows that the highest percentage of participants are pharmacists aged from 21 to 30 years. 97% of respondents agree that vaccines approved for use in the EU are efficacious and safe, but 73% of them think that they need additional professional data for the vaccines authorized for use. 87% of the

participants in the worldwide study believe that they are sufficiently aware of the most common side effects after vaccination against COVID-19, while 76% of the participants from Bulgarian study (in which participated more than 100 pharmacist) support the same opinion. The results of both studies show that less than half of healthcare professionals are familiar with content of “Risk Minimization Plan” of the vaccines authorized for use (34% of the participants in the national and 50% of the participants in the global survey.) The worldwide survey is still ongoing and data will be collected by the end of March 2022.

Studies assessing health professionals’ awareness of vaccine risk management are essential to the successful vaccination campaigns. Professional information on adverse reactions and awareness of the association with other comorbidities are important for informed decision-making by health professionals.

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How Can Virtual Reality Glasses and Virtual Learning Material be Useful for Final Stage Nursing Students?

In recent years, simulation-based education has been increasingly complemented by elements of virtual reality (VR), a combination of hardware and software that can be used to block out the real world and create a sensory illusion of being immersed in another environment. VR, augmented reality and gaming have increasingly become a target of experimentation and study in teaching both technical and non-technical skills. Virtual simulations have been used to enhance lecture or web-based courses and to foster intradisciplinary and interdisciplinary education. They have been very useful during the COVID-19 pandemic, when there have been limited clinical placements available.

The purpose of the study is to describe nursing students' experiences of learning with help of virtual learning materials and virtual simulations. The aim was to produce knowledge that can be used to develop virtual simulation teaching and counselling further and to support students' self-debriefing.

This is a mixed method study conducted with 13 final-stage nursing students at a University of Applied Sciences in Finland. Following virtual simulations performed during an acute nursing course, the students completed a questionnaire with qualitative and quantitative items on their experiences and on the usefulness of the simulations. The findings are primarily based on an inductive content analysis of the students' responses to qualitative items. The quantitative data, analysed by means of SPSS, was used to support the qualitative analysis.

Most participants found virtual simulation learning and the use of virtual reality glasses a welcome change and a meaningful and safe way to promote their theoretical and practical competencies. They appreciated the possibility to choose the topic and the time and place of study. The simulations had been useful in practicing assessment and decision-making skills. Problem-solving, simulation of rare incidents, game-like elements and step-by-step feedback were proposed. A few students disliked the artificial setting and some reported headache and nausea.

Virtual simulations and virtual reality glasses can be effectively used to teach final-stage nursing students as part of a blended learning

approach. Careful planning of the learning contents and a suitable level of challenge in the simulations increase student motivation.

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The Pharmacist and RNA-Based Medicines

Biotechnology has provided unique protein and monoclonal antibody drugs that have changed the landscape of the pharmaceutical industry and thus, the roles of pharmacists. But the development of nucleic acid-based drugs has been much more challenging. The first therapeutic nucleic acid, a DNA oligonucleotide, was approved for clinical use in 1998. Twenty years later, the first therapeutic RNA-based oligonucleotide was approved. Also, the biological understanding of RNA has evolved from a biomolecule intermediate between DNA and a protein to a more dynamic molecule that regulates the functions of genes and cells in all living organisms. New game-changing technologies to create RNA medicines have been developed and led to the emergence of numerous types of RNA-based medicines that broaden the range of “drug-able” targets beyond the scope of existing drugs. RNA molecules possess high potential for treating medical conditions via several mechanisms of action if they can successfully reach the target cell upon administration. However, unmodified RNA molecules are rapidly degraded and cleared from the circulation. In addition, their large size and negative charge complicates their passing through the cell membrane making them challenging molecules to administer.

In this presentation, we outline the recent developments in therapeutic RNA delivery, new RNA-based medicines, and introduce a discussion of the integral role of the pharmacist in the successful use of new RNA-based medicines. RNA drug development efforts have primarily focused on four modalities: 1) mRNA vaccines for infectious disease (including COVID-19) and cancer; 2) In vitro transcribed (IVT) mRNAs to replace or supplement proteins; 3) Antisense RNAs, or RNA interference (RNAi) to partially or completely turn off gene expression; and 4) RNA aptamers, or ‘chemical antibodies’, which bind to specific molecular targets and can act as drug carriers to deliver small-molecule chemotherapeutics.

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Manipulating in Therapeutical Settings with Trait and State Sexual Desire of People over 45 Years of Age

The sexuality of older adults is often being left out of national, population-based surveys on sexuality and sexual health issues (Gewirtz-Meydan, 2018) and when studied, the focus tends to be on the bio-medical and function related aspects (DeLamater & Karraker, 2009). The current study aims to contrast this by examining sexual desire and the impact of imagined sexual situations on state desire in people up to the age of 85.

A total of 651 respondents between the ages of 18 and 85 were randomly assigned into the experimental and control conditions. State and trait sexual desire along with background variables were measured, followed by the Imagined Social Situation Exercise (Goldey & van Anders, 2011). After the exercise, state sexual desire was measured again to analyse the differences elicited by the exercise.

On average, sexual desire in the experimental condition rose statistically significantly. The group with a neutral scenario, there was no statistically significant change in state sexual desire. In the group without an imagined scenario exercise, the changes in state desire differed across age groups.

The results provide evidence of imagined sexual scenarios having a positive impact on people's sexual desire regardless of age. As the changes in sexual desire were not correlated with age but with the engagement with the exercise, these results have possible clinical implications. The differences in the way people responded to the questionnaire regarding sexual desire and functioning, without the exercise, may allude to the impact medicalized tests may have on people's sexuality and the need for further adaptation in older age groups.

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The Effectiveness of Breastfeeding Facebook Program to Knowledge, Attitude, Behavior of Father to Support 6-Month Exclusive Breastfeeding in Middle Income Country

The 6-month exclusive breastfeeding rate in the Northeast region of Thailand has recently significantly decreased in contrast to all other regions in Thailand. Facebook is world widely use to increase that knowledge, attitude and behaviour to support breastfeeding. Therefore, the aim of this study is to test the effectiveness of breastfeeding Facebook programme to knowledge, attitude, behavior to support six-month exclusive breastfeeding in middle income country. A quasi-experimental design was used. The study was carried out from September 2020 – August 2021. The data of experimental group and control group were conducted in two tertiary hospitals in Thailand. The participants of both groups were husbands of postpartum mothers who were admitted to the postpartum ward. The demographic data were analyzed by distribution of frequency, mean, percentage and SD. The t-test was used to analyse the mean score of knowledge, attitude and behaviour of father by SPSS. 36 fathers of both experimental group and control group were recruited. The different mean score of knowledge, attitude, behaviors of father to support the EBF among baseline and 6-month were shown. In experimental group, the different mean score of knowledge among baseline and 6-month was significant. The mean score of knowledge at 6 months (mean=19.78, SD=5.50) was higher than the mean of knowledge baseline (mean=16.42, SD=4.22). Similarly, the different mean score of attitudes among baseline and 6-month was not significant. The mean score of attitude at six-month (mean=108.03, SD=19.89) was higher than the mean score of behaviour at baseline (mean=101.81, SD=17.99). In addition, the different score of behaviour among baseline (mean=65.86, SD=7.01) and six-month (mean=68.58, SD=10.42) was not significant. Facebook can be another platform to transfer the breastfeeding knowledge to father in middle income country. In the future, this program can be improved and apply in other middle income country as well.

Ton Van Oostrum

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Shared Decision Making, Trial and Error in Occupational Medicine and New Opportunities after the Pandemic

Medicine in modern times. Practitioners and studies: they talk about an increasing emphasis on the role of patients' preferences and of shared decision making (SDM) in treatment decision making. More and more scientists recognise that this sharing is important. I as a psychologist state that the patients nowadays are better educated, they do searches on the internet, they themselves want to be responsible for their treatment. SDM enables that treatment decisions reflect patient preferences so that patient experiences of care as well as treatment outcomes will be better. SDM can be an important part of quality care and should be a principle for good clinical practice.

Despite of all evidence and convictions, SDM is not yet widely usual. Dutch doctors recently started a campaign in which patients, 'co-operating' with their clinicians, are encouraged to see the likely harms and benefits of available treatment options, communicate their ideas, and choose the option that best fits. What are the first results of this? Is the campaign a toy for the leaders of associations of doctors, or do doctors really believe in 'democracy in the consulting room'? A recent small survey amongst occupational doctors show that SDM is far from common practice. Discussion about all this in a recent webinar, with occupational doctors and representants of employers and employees showed important conditions to enhance the patients' part of SDM. Surprisingly, the pandemy with online consults demonstrates new opportunities.

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“I Would Do it All Over Again”: Cherishing Time and the Absence of Regret in Continuing a Pregnancy After a Life-limiting Diagnosis

Parents, after learning of a life-limiting fetal condition (LLFC), experience emotional distress and must consider options that impact the remainder of the pregnancy, their future lives, and family members. For those who continue, little is known about their long-term presence or absence of regret about their choice, the reasons for this feeling or its impact on their life. The aim of this research was to examine the concept of *decision regret* in parents who opted to continue a pregnancy affected by an LLFC. The contextual factors, conditions, and consequences surrounding the presence or absence of regret were analyzed.

Data were retrieved from a cross-sectional study using the *Quality of Perinatal Palliative Care and Parental Satisfaction Instrument*. Participants were parents (N = 405) who experienced a life-limiting prenatal diagnosis and opted to continue their pregnancy. Secondary data analysis examined qualitative responses (121/402) to an item addressing regret. Dimensional analysis was used to examine data, identifying context, conditions, and consequences associated with the presence or absence of decision regret.

Absence of regret was articulated in 97.5 percent of participants. Respondents described *relationship* as central to the contextual factors. Participants acknowledged themselves as parents and articulated specific parental roles such as advocacy, responsibility and decision-making. Participants identified two primary conditions in stating that they had no regrets, which included (a) emphatic certainty and (b) personal values. The context and conditional factors led to two consequences related to the concept of *decision regret*. First, parents expressed a cherished opportunity to love, hold and honor their infant's life. Second, parents experienced personal learning and growth that shaped and changed them. They identified growth and transformation, positive long-term memories, and a lack of guilt.

Women are compelled to weigh and decide on a course of action that remains in their personal history forever. This research informs all interdisciplinary health care team members who work with parents with LLFCs—including nurses and physicians in obstetrics, neonatology, and perinatal palliative care—by demonstrating with data a profound lack of regret for virtually all parents who opt to continue

their pregnancies. Decision regret is potentially modifiable through collaborative decision making between providers and patients as the best available scientific data is presented and coupled with patient preferences and values. Counseling, which traditionally includes information about termination, should also include apprising women of a palliative care option that includes data about the emotional and psychological aftermath of these respective decisions. Parents overwhelmingly appreciated an opportunity to continue a pregnancy affected with a LLFC and welcomed support from the health care team.

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