



INTERNATIONAL  
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# 3rd ICOHEMA 2022

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**“Current trends in Strategic Health Management,  
Leadership and Business Intelligence”,**

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## PREFACE

Throughout the world, the management of health care systems, public health systems, hospitals, entire hospital networks and other medical facilities are rapidly growing sectors, as the population ages and life expectancy increases due to medical advances. Constant improvements in quality standards mean constantly evolving requirements for those working in the healthcare field. To help meet these criteria and share the outcomes of knowledge and research in this field from scientists from all over the world, the International Hellenic University, in cooperation with the University of Thessaly, has successfully organized and hosted the 3rd ICOHEMA. The event was held virtually (due to the extraordinary condition generated by COVID-19), on the 18<sup>th</sup> – 20<sup>th</sup> of March 2022.

During those three days, all the participants have had insightful, interactive discussions and great chance to enrich their knowledge and become informed about the latest research findings in the field of health management.

The research track of the conference explored the overall theme of “**Current trends in Strategic Health Management, Leadership and Business Intelligence**” and focused on sub-themes like:

- ✓ Human Resources and Healthcare
- ✓ Health Management and Business Intelligence
- ✓ Quality Assurance in Health Units and implementation success factors
- ✓ High Value Care and Information quality
- ✓ E health policies and Organizational issues
- ✓ Information & Communication Technologies in Health Management

ICOHEMA was a scientific meeting point for both local and international scientists, academicians, health care professionals and managers working in all aspects of Medical and Health management. In addition to the contributed papers, internationally distinguish experts from several countries were also invited to deliver keynote and invited speeches at ICOHEMA 2022. In total, six keynote speeches, sixty three plenary talks with both academic and scientific sessions and three round tables were included in the scientific schedule *offering a unique opportunity of enhancing the knowledge and research in the field.*

Finally, on behalf of the scientific and organizing committee, we would like to thank you all for the great contribution in the event and looking forward to seeing you in the next ICOHEMA.

Ioanna V. Papathanasiou

Chrysoula Chatzigeorgiou

Areti Tsaloglidou

Evangelia Stalika

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# EFFECTS OF THE COVID-19 PANDEMIC

## PANDEMIC STRESS DISORDER, LONG COVID-19 SYMPTOMS AND THEIR IMPACT ON CLINICAL ASSISTANCE AND MENTAL HEALTH

Silva Ibrahim PhD

Lecturer, Department of Psychology, Albanian University  
Tirana, Albania

Prof.As.Dr.Lindita Durmishi

Head of Department of Psychology and Lecturer of Psychology “Aleksander Xhuvani University”  
Elbasan, Albania

and

Dott.Ervin Ibrahim PhD

Responsabile Sanitario Area Vasta 2  
Cooss Marche, Jesi, Italy

### ABSTRACT

The purpose of the present study is to explore and identify the effects of Long-Covid 19 symptoms in the Clinical assistance and Mental Health after the acute phase (Miners et al.,2020; Mazza et al.2020; Del Rio et al.2020;Cai et al.,2020).

Review of literature on epidemiology and pathophysiology and psychometric assessment and single case study design was the method used in the present study (Bourmistrova et al.2021; Del Rio et al.,2020; Lopez-Leon et al. 2021;De Natale et al.2020) . Four dyads of patients-medical staff (nurses and doctors) were created as a factorial variables to assess the pathophysiology of symptoms after the acute phase,impact on mental health and impact on the normal social life. For the qualitative analysis we used the demographic data survey, the Psychological Impact and Experience Questionnaire (COVEX) (Fisher et.al, 2020) and the Resilience Scale for Adult (RSA) (Friborg et al.,2003; Capanna et al.,2015). The present study, which is a part of a larger project, included 100 patients and 100 medical staff in an age- range from 30 to 70 years old, with a mean age of 32 years who had had a repercussion of symptoms after the acute phase. The research was conducted in the Medical Regional Area of Marches, Italy.

Indices on emotional disposal showed that at the end of the continuous treatment in terms of behavior, patients were more willing to follow the clinical schedule and maintain a good relationship with medical staff (RCI = 6.63; MANOVA,  $\alpha = .017$ ;  $\eta^2 p = .886$ ). At the end of the treatment, medical staff showed an increase in positive expectancies that they gave of their patients in terms of clinical follow-up (RCI: 0.3; MANOVA,  $\alpha = .56$ ;  $\eta^2 p = .715$ ). Both RCI and MANOVA values showed a significant difference in dyadic emotional disposal and synchronous pairing time between patients and medical staff (Synchronous dyadic disposal: RCI = 6.63; MANOVA,  $\alpha = .017$ ;  $\eta^2 p = .902$ ; Synchrony: RCI: 0, 23; MANOVA,  $\alpha = .075$ ;  $\eta^2 p = .695$ ).

Emotional dyadic relations that were submitted under clinical and psychological assistance showed higher effects on the construct of nursing staff with patients as they are in the edge of assisting patients and follow-up with them. Nurse and patient's emotional disposal degree increased significantly in the post-treatment and in the follow-up, treatment stages, thus, prospecting a good maintenance of nurse—patients with Long-Covid 19 development symptoms affect the frequency of recovering time and a subtle mental health support.

**Key Words:** Long Covid -19, Clinical Management, Mental Health, Patient, Medical Staff.

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# EXPLORING COVID-19 ANXIETY AND DEATH PERCEPTIONS IN THE ELDERLY IN ALBANIA

Valbona Habili Sauku PhD

Lecturer, Department of Psychology, University of Tirana

Tirana, Albania

e-mail: [valbonahabili@gmail.com](mailto:valbonahabili@gmail.com)

## ABSTRACT

The purpose of the present study is to explore death anxiety in individuals of late adulthood, during COVID-19, focusing in their fear or lack of fear of death, the difficulties that age and the pandemic have created in their lives and psycho-social consequences ( Boerner & Moorman,2020; Caswell & O'Connor 2019; Cicirelli, 2002;Fortner et al.2000).

The methodological construct chosen in the present study is the probabilistic model. Qualitative methodology was used for the analysis and interpretation of this study, especially the phenomenological approach in order to generate as much information as possible from the study participants. The current study included 10 elderly ( $n=10$ ) people specifically 5 women and 5 elderly men. The semi-structured interview applied to this research was created by combining three instruments: “*Experimental Manipulation of Death Anxiety*” (Pettigrew,1977) a tool consisting of 20 questions, which aim to collect information about anxiety experienced by individuals, when they hear or perceive words in relation to death. “*COVID – 19 Life Events-Anxiety Inventory Scale (C19LAI)*” is a new instrument conducted primarily in Saudi Arabia, which serves to measure and assess anxiety, related to various life events during the COVID-19 pandemic. Results conducted to measure the validity and reliability of C-19LAI, found that this instrument is a tool with high validity and reliability, which can measure anxiety and anxiety-related events during the pandemic. and “*The Collett – Lester Fear of Death Scale*” (CL-FODS, Collett & Lester, 1969) that focused on exploring death anxiety experienced during the COVID-19 pandemic.

Results of the transcribed interviews showed that COVID-19 has had a very large impact on the intensification of anxiety levels in the elderly and especially Death Anxiety. Study results also showed that older men and women used a "language" different from each other in expressing the anxiety of death experienced under the "effect" of COVID-19 (Taylor,2004; Birgit et al. 2018; Brooks et al.,2020) . Women tended to be more expressive in the language used to describe anxiety emotions from both death and COVID, while men were more limited in the language they used, they were not expressive in terms of the whole range of the emotions they experienced. Likewise, the ways in which the elderly copied to neutralize the anxiety experienced throughout the pandemic period were also recognized.

COVID-19 anxiety seems to have a significant on how older adults express and experience their anxiety to self-existence and approach death. Coping with the issues of mental health impact of COVID-19 within the geriatric age today can be closely related to their defenses and emotional health (Guner et al.,2021).

**Key Words:** COVID-19, Anxiety, Late Adulthood, Defenses, Psychological wellbeing.

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# THE EFFECTS OF THE COVID 19 PANDEMIC ON STUDENTS EMOTIONS

George Apostolou  
International Hellenic University, Greece  
Ioannina, 45333, Greece  
e-mail: [apgeorge2004@yahoo.com](mailto:apgeorge2004@yahoo.com)

Achilleas Papatsimpas  
Ministry of Education, Greece  
Athens, 11522, Greece  
e-mail: [achilleaspapat@gmail.com](mailto:achilleaspapat@gmail.com)

and

Athanasios Gounas  
International Hellenic University, Greece  
Sindos, Thessaloniki, 54700, Greece  
e-mail: [agkounas@mkt.teitje.gr](mailto:agkounas@mkt.teitje.gr)

## ABSTRACT

The COVID-19 outbreak has upset the lives of many people around the world. The increase in cases has created a sense of uncertainty and anxiety about what is going to happen. It has also caused tremendous stress to the educational community, teachers, students, parents, administration staff. This condition can adversely affect students' learning and psychological health (Al-Rabiaahab A, et al., 2020). The virus should be kept away from the children population because it is difficult to stop a child from playing with his friends, his siblings, hugging his parents. Fear of the rapid spread of COVID-19 among young people and from there to the adult population has led state authorities in many countries around the world to close schools, colleges, universities, and other educational institutions (Sahu, P., 2020; UNESCO, 2020). As there were no tools available at the beginning of 2020 to deal with the virus, the closure of educational institutions was a first step in reducing the spread of infectious disease in the community, thus breaking an important transmission chain (Kawano S, et al., 2015; Luca GD, et al., 2018; Wheeler CC, et al., 2010).

Under the threat of a pandemic, most educational organizations around the world canceled events, workshops, conferences, sports activities, excursions. Simultaneously moving from face-to-face lessons to e-learning courses. The coronavirus pandemic has an adverse effect on education, school characteristics, research, academic programs, the professional development and incomes of staff and graduates, and generally jobs in the education sector (Onyema, E. M., et al., 2020). Closing schools due to coronavirus tends to increase the pressure on people with limited digital skills, education, and resources to pursue this type of education.

This research, conducted between February and May 2021 regarding students aged 7-18 years old attending lessons in private tutorial organizations in Greece, aims to investigate how schools, tuition centers and private lessons have responded to the pandemic changes regarding the functioning of educational institutions, as well as how the pandemic has affected students' learning experience. The research conclusions and implications can be used by learning services providers, curriculum planners, teachers and parents who face the problems of the education system (Narver, 2000; Harris, 2002; Helfert, Ritter, & Walter, 2002).

**Key Words:** Covid-19, Greek education, Student's anxiety, Online education.

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# EFFECTS OF THE COVID-19 PROCESS ON SURGERY AND OPERATING ROOM NURSES

Özlem Soyer Er  
Afyonkarahisar Health Sciences University, Surgical Nursing Department  
Afyonkarahisar, Turkey  
e-mail: [ozlem.er@afsu.edu.tr](mailto:ozlem.er@afsu.edu.tr)

and

Meryem Yavuz Van Giersbergen  
Ege University, Faculty of Nursing, Surgical Nursing Department  
İzmir, Turkey  
e-mail: [meryem.yavuz@ege.edu.tr](mailto:meryem.yavuz@ege.edu.tr)

## ABSTRACT

The aim of this study is to examine the studies conducted with surgical and operating room (OR) nurses in Turkey during the COVID-19 pandemic.

This study is a systematic matching study in which studies conducted with surgical and OR nurses working in Turkey during the COVID-19 pandemic were examined. The universe of the study consists of studies published in the national and international literature on the subject between January 2020 and February 2022. The keywords “COVID-19”, “operating room/ameliyathane”, “cerrahi/surgery/surgical” and “hemşirelik/nursing” were used in Turkish and English in Scopus, Embase, Pubmed/MEDLINE, Cochrane Library and Google Scholar databases. A total of 764 studies were reached. After excluding reviews, patent studies, dissertations, book and book chapters, inaccessible studies, case reports, papers, guidelines, reports, and studies published outside of English, 45 studies were analyzed. It was excluded from the study because 3 studies were repeated and 19 studies did not have data on surgical and OR nurses. 23 studies were included for review. A "Study Review Form" for the purpose of the study was developed by the researchers in order to examine the studies reached. The data obtained in the research were coded according to the coding method included in the document analysis. Under ten sub-titles (name of the study, type of publication, year, purpose, type of research, place of research, definition of sample/study group, data collection tools, data analysis and result) there is information about the study identity and study content of the studies.

Of the studies on surgery and OR nurses in the COVID-19 pandemic, 8.7% were published in 2020 (Tercan et al., 2020; Yıldırım et al., 2020), 73.9% in 2021 (Atilla, Karakaya, 2021; Çelik, Dağlı, 2021; Çınar et al., 2021; Deliktas Demirci et al., 2021; Doğan et al., 2021; Gökmen, Sarıboğa, 2021; Gümüş, Başgün, 2021; Kaplan et al., 2021; Kılınç, Sis Çelik, 2021; Özlük, Bıkmaz, 2021; Polat, Çoşkun, 2021; Ünver, Yeniğün, 2021; Yayla, Eskici İlgin, 2021; Yılmaz et al., 2021; Damar, Aktaş, 2021; Köken et al., 2021), and 8.7% in 2022 (Parlak et al., 2022; Turgut et al., 2022). 4.3% are in the publishing phase (Ünver et al., 2022). When the research methods of the studies were examined, it was determined that 26.0% of them were conducted with the qualitative research method (Deliktas Demirci et al., 2021; Doğan et al., 2021; Turgut et al., Köken ve ark., Ünver et al., 2022) and 74.6% of them were carried out in the quantitative research design (Tercan et al., 2020; Yıldırım et al., 2020; Atilla, Karakaya, 2021; Çelik, Dağlı, 2021; Çınar et al., 2021; Gökmen, Sarıboğa, 2021; Gümüş, Başgün, 2021; Kaplan et al., 2021; Kılınç, Sis Çelik, 2021; Özkan, Ünlü, 2021; Polat, Çoşkun, 2021; Ünver, Yeniğün, 2021; Yayla, Eskici İlgin, 2021; Yılmaz et al., 2021; Damar, Aktaş, 2021; Parlak et al., 2022). When the samples of the studies were examined, it was determined that 17.3% of the studies were conducted with health workers (Yıldırım et al., 2020; Atilla, Karakaya, 2021; Çelik, Dağlı, 2021; Polat, Çoşkun, 2021) and 82.6% were carried out only with nurses (Tercan et al., 2020; Yıldırım et al., 2020; Atilla, Karakaya, 2021; Çelik, Dağlı, 2021; Çınar et al., 2021; Gökmen, Sarıboğa, 2021; Gül, Kılıç, 2021; Gümüş, Başgün, 2021; Kaplan et al., 2021; Kılınç, Sis Çelik, 2021; Özkan, Ünlü, 2021; Polat, Çoşkun, 2021; Ünver, Yeniğün, 2021; Yayla, Eskici İlgin, 2021; Yılmaz et al., 2021; Damar, Aktaş, 2021;

Parlak et al., 2021). When the aims of the studies are examined, 60.8% of them examined the psychosocial effects of the COVID-19 pandemic (anxiety, fear, stress, depression, coronaphobia, etc.) (Tercan et al., 2020; Yıldırım et al., 2020; Atilla, Karakaya, 2021; Çelik, Dağlı, 2021; Çınar et al., 2021, Doğan et al., 2021; Gökmen, Sarıboğa, 2021; Gül, Kılıç, 2021; Kaplan et al., 2021; Kılınç, Sis Çelik, 2021; Özkan, Ünlü, 2021; Polat, Coşkun, 2021; Ünver, Yeniğün, 2021; Yayla, Eskici İlgin, 2021), 8.7% related to the protective equipment used in the pandemic (Parlak et al., 2022; Ünver et al., 2022), 17.3% it was determined that the employees examined their experiences (Deliktas Demirci et al., 2021; Özlük, Bıkmaz, 2021; Turgut et al., 2022; Köken et al., 2021), and 13.0% examined the knowledge and attitudes of the employees (Gümüş, Basgün, 2021; Yılmaz et al., 2021; Damar, Aktaş, 2021).

**Key Words:** Covid-19, process on surgery.

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## IMPROVED HEALTHCARE SERVICES THROUGH THE DEVELOPMENT OF SOFT SKILLS AND LINKS TO HOSPITALITY INDUSTRY

Maria - Magdalini Karalazarou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [maria.krlzr@gmail.com](mailto:maria.krlzr@gmail.com)

Evangelos Christou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [echristou@ihu.gr](mailto:echristou@ihu.gr)

Chryssoula Chatzigeorgiou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [cchatzigeorgiou@ihu.gr](mailto:cchatzigeorgiou@ihu.gr)

and

Dimitrios Stergiou  
Hellenic Open University  
Patras, Greece  
e-mail: [dstergiou@eap.gr](mailto:dstergiou@eap.gr)

### ABSTRACT

Soft skills have been a hot topic of discussion, as economies shift from industrial to service-based. Their demand in the workforce and importance to career success have been established across many industries such as, hospitality (Rerung, 2021; Smith, 2021), engineering (Yu & Liu, 2015), linguistics (Laserna & Miguel 2018), (Barczyk & Duncan, 2011), IT (Mardiana, 2016), but healthcare as well (Duncan, Yarwood-Ross, & Haigh, 2013; Goh, Chan, & Kuziemy, 2013; Raiman, Antbring, & Mahmood, 2017; Manhas & Kaur, 2018; Singla, Kumar & Badyal, 2020). Even though technical skills have always been vital for gaining employment and achieving career progression (Robles, 2012; Rao, 2018), authors nowadays suggest that soft skills play a decisive role in retaining employment (Tulgan, 2015; Chaka, 2020).

Despite being considerably hard to learn, measure and rate such skills (Stefanovski, 2020), the need of incorporating their training in the curricula of medicine, medical management and nursing educational programs (Dolev, Goldental, Reuven-Lelong & Tadmor, 2019), is clearly evident in many researches (Bordoni, Baum, García, Moriñigo, Luna, Otero & de Quirós, 2019; Stefanovski, 2020; Dolev, Naamati-Schneider & Meirovich, 2021; Daly, McCann, & Phillips, 2022). However, gaps exist on how to teach them (Bordoni *et al.*, 2019; Daly *et al.*, 2022). Their importance is also recognized by healthcare professionals themselves, who believe that soft skills are equally important to basic professional skills, in delivering healthcare of good quality (Stefanovski, 2020).

Healthcare staff is in constant contact with patients, who are often stressed, confused or even frightened, due to their poor health condition. Consequently, staff's appropriate response to patients' needs, may contribute significantly to their health maintenance. Healthcare staff is in addition interacts closely with other professionals of the field and appropriate communication among them, may contribute to achieving successful work and improving medical care, avoiding common mistakes that are mostly occurring as a result of ineffective communication and lack of teamwork (Stefanovski, 2020).

It is suggested by several researchers that teaching soft skills may increase quality of several practices and services in healthcare (Stein, & Book, 2000; Mendelson, 2003; Austin, Evans, Magnus, & O'Hanlon, 2007; Weng, Chen, Lin, Tu, Lin, & Yu, 2011; Tsey, Lui, Heyeres, Pryce, Yan & Bauld, 2018; Abraham, Steward & Solimeo, 2021), such as the provision of compassionate care (Lown, 2016;

Taylor, LeBlanc & Nosik, 2019; Andzik & Kranak, 2020) and more precise diagnoses and treatment (Nooryan, Gasparyan, Sharif & Zoladl, 2012). It is also suggested that highly developed soft skills are required in change management of health information systems (Hersh, 2010; Fenton, Joost, & Gongora-Ferraez, 2012; Konstantinidis, Leonardini, Stura, Richter, Tessari, Winters, ... & Wharrad, 2021).

Training programs can develop and improve a great variety of soft skills that are considered essential in healthcare, like empathy, communication (Stefanovski, 2020), emotional intelligence (Hall, Roter & Rand, 1981; Casey, Garrett, Brackett & Rivers, 2007), teamwork, knowledge management (Toussiant & Coiera, 2005), work ethic, networking, decision making, positivity, problem solving, critical and creative thinking (Stefanovski, 2020) as well as conflict resolution (West, 2013).

Health sector is predominantly service-based with the patient being the focus of its interest, indicating the significance of quality in delivering medical care (Brackett, Mayer, & Warner, 2004; Stefanovski, 2020; Daly, McCann, & Phillips, 2022). Therefore, it is not a coincidence that soft skills required in the field of health are similar to those required in hospitality industry. Potential links between the two fields have been anyway recognized long time ago (Bunkers, 2003; Gilje, 2004). More specifically, communication, ability to work with others and knowledge of ethics; are some of the key soft skills that are also required in hospitality industry and other competencies are also alike among the two fields (Christou & Chatzigeorgiou, 2019).

The purpose of this paper is to provide a theoretical overview of available scientific literature, with regards to valuable soft skills in healthcare, their contribution to the improvement of various medical services. Potential ways of teaching such skills will additionally be explored. It will also aim to outline similarities between healthcare and hospitality industry as well as identify potential ways for healthcare to further benefit from applying hospitality elements in its management, in an attempt to improve in overall the provided services.

**Key Words:** soft skills, hospitality, healthcare services.

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# POLICIES AND ETHICS IN HEALTH CARE

## THE HEALTH SYSTEM OF ITALY COMPARED TO GREECE SYSTEM

Antonios Kirizopoulos  
DIEK Komotinis  
Komotini, Greece  
e-mail: [antonis.k1234@hotmail.com](mailto:antonis.k1234@hotmail.com)

Gerakina Nerantzaki  
DIEK Komotinis  
Komotini, Greece  
e-mail: [nina.nertz@gmail.com](mailto:nina.nertz@gmail.com)

Dimitra Agiatzidou  
DIEK Komotinis  
Komotini, Greece  
e-mail: [dhmhtraagiatzidu@gmail.com](mailto:dhmhtraagiatzidu@gmail.com)

Georgios Karipoglou  
DIEK Komotinis  
Komotini, Greece  
e-mail: [gkaripoglou@yahoo.gr](mailto:gkaripoglou@yahoo.gr)

and

Aimilia Kazakou  
DIEK Komotinis  
Komotini, Greece  
e-mail: [emykaza@gmail.com](mailto:emykaza@gmail.com)

### ABSTRACT

The emergence and spread of the COVID-19 pandemic is a topical issue that covers a large volume of information and information locally and globally. A typical example that shocked the foreground was Italy, which is one of the European countries that experienced the extreme negative effects of the pandemic, causing internal reorganizations, mainly regarding its health system.

The present work focuses on the Italian space, focusing mainly on its health system. It begins with a reference to the general picture of the country, in order through its general evaluation to pass on specific knowledge about the basic principles, structure, institutions and reforms of the Italian Health System. Finally, the differences and similarities of the Greek with the Italian Health System are presented in a concise way.

Italy's National Health System offers universal coverage to all members of Italian society and is characterized as a system with strong decentralized structures. More specifically, it consists of the central, regional and local level (Lega, F., Vendramini, E., 2008). The central level has the responsibility to provide the basic benefits to all citizens. The regional level includes regional governments that provide health services through a network of public or private hospitals. The responsibilities of this level are administrative, legislative and aim at the organization and planning of health services, which are adapted to the needs of the population and meet the criteria of adequacy and excellent quality. The local level consists of the main bodies providing health services to the Italian community. Therefore, the local level that constitutes the Local Health Providers ASL'S, plays the role of purchaser of health services using its cooperation with the National Health System (Lega, F., Vendramini, E., 2008).

Improving the quality of health care in the regions and reorganizing primary health care (Saltman et al. 2007; Lo Scalzo, 2009) play a key role in reforms in Italy. Some of the priorities of the plan began to

be implemented with the conclusion of agreements between the central administration and the regions (Saltman et al 2007).

Italy as well as Greece are Mediterranean countries of Southern Europe as a result of which they present some similarities in the way in which their administrative culture and tradition was formed due to their integration into a common geographical area (Ongaro 2008). The Greek health system refers to a Beveridge type system with Bismarck elements because it is characterized by a peculiarity of parallel existence on the one hand of a national health system of N1397/1983 and on the other hand of the social security funds. There have been a number of reforms in this system over time. Among the reforms concerning the NPM is the project of decentralization of the health system that was a product, of successive and long-term legislative regulations. It is a fact that regarding the decentralization in the Greek public health system and with the implementation of the NPM as a springboard (Ongaro 2008).

Italy, on the other hand, has introduced more innovative reforms aimed at introducing tools of new governance structures (Stancati M., 2010). More specifically, the implementation of performance management, the market, the distinction between buyers and suppliers of health services, are some of them (Ongaro 2008).

Conducting a benchmarking of the two countries, it is found that both countries attempted to introduce changes with a variety of legislative measures in the same decade (Ongaro 2008). It follows from the above that in Italy the implementation of the NPM and the new governance structure is mainly at a micro level or at a local level in which the organizational structure of health benefits is at an advanced stage. On the contrary, in Greece the decentralized structure of the system is at a primary stage with the regional structures being far from the exercise of essential functions and at the same time the health service providers (Ongaro 2008).

In the recent period that we are going through, the arrival of the new administrative reform envisages the inclusion of the Ministry of Health in the regions in order to effectively implement a decentralized health system, something that is already applied in Italy because both the Regional Health Branches and the Local Health Bodies are included in the regions (Ongaro 2008).

It is important to note that European countries, although housed under the European institution, are distinguished by different health policies. More specifically, Greece and Italy, being European countries, have some differences.

**Key Words:** Pandemic, SARS-CoV-2, impact economics, Health sector.

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## THE EFFECTS OF THE COVID-19 PANDEMIC ON THE GREEK ECONOMY

Foteini Thanou  
DIEK Komotinis  
Komotini, Greece  
e-mail: [thanou72@yahoo.gr](mailto:thanou72@yahoo.gr)

Georgios Karipoglou  
DIEK Komotinis  
Komotini, Greece  
e-mail: [gkaripoglou@yahoo.gr](mailto:gkaripoglou@yahoo.gr)

and

Aimilia Kazakou  
DIEK Komotinis  
Komotini, Greece  
e-mail: [emykaza@gmail.com](mailto:emykaza@gmail.com)

### ABSTRACT

Of all the threats experienced by humans, the pandemics that occurred were the ones that caused the most disaster (Andersen et. Al., 2020). Among others, there are health effects on physical and mental health (Atalan, A.; 2020). According to Abouk et.al (2021), pandemics cause serious upheavals and shocks in the human economic and social life of the affected areas (Antras et. Al., 2020). The restrictive measures create critical, unexpected and unprecedented multidisciplinary problems to which societies find it difficult to respond and adapt (Ammar et. Al., 2020). In the present work, the multilevel effects of COVID-19 infection in the society and especially in the field of economy in our country are reported, highlighting the strengthening of the Health sector as a measure of treatment of the economy.

The pandemic succeeded the Greek economy in the trajectory of growth and GDP growth. However, the brake on global economies also affected the Greek economy. There was a decrease in Greek GDP during the first 9 months of 2020, mainly due to the decrease in exports by -25.1%, which had a direct impact on GDP. Indicatively, from the available data of the BoG (Bank of Greece, 2021.), the receipts from services decreased in 2020 by 17451.3 million euros, while the exports of goods by approximately 3500 million euros. The biggest factor in reducing GDP is clearly the reduced tourist traffic, as tourism for Greece in 2019 corresponded to 20.8% of its GDP (SETE, 2021). In particular, the change in the ratio of imports to the change in the sum of Domestic Final Expenditure and exports decreased to 20, 47% during the period 2019-2020. The corresponding ratio in the previous 5 years was around 70.2% as there was an increasing trend in exports and Domestic Final Expenditure (D. Maroulis, A. Ikkos, I. Kikilias, 2021). In 2020, the Domestic Final Expenditure decreased by 1.69%, which is partly due to the increase in investments in Fixed Capital by 0.8% compared to the reduced percentage in the same period in 2019, where it was recorded a reduction of 3.9%. However, during this period there was a significant decrease in Private Consumption with a rate of -4.41. Unemployment is expected to increase as restrictive measures were re-imposed which took place by the end of 2021.

The first area to be strengthened was the Health sector in order to prepare more safely for the Covid-19 incidents. Also, during the months we are facing the crisis caused by the pandemic, the government took care to support scientists, the unemployed and to arrange the salaries of employees of companies that ceased their activities by state order (Greek Government, 2021).



For the following years, studies showed that the Greek economy was going to fully recover, with GDP rates of 4.2% and 3.2% for the years 2022 and 2023 respectively. Particularly measured private consumption, according to ELSTAT and INSETE estimates, will reach 2.6% in 2022 and 2.1% in 2023. Public consumption is expected to increase by 0.7% in 2022 and by 1.5% in 2023. According to estimates, the investment sector also seems to have an upward trend, which was to increase by 13.9% for 2022 and 9.5% for 2023.

All the above prove the steady steps of Greece towards economic development with the aim of mitigating the negative effects of the pandemic in the next short-term period.

The pandemic, however, turned out to be a very basic element. That is, the strengthening of the health sector leads to improved economic indicators, liberation of the economy from restrictive measures and rapid recovery of indicators (Kosmidou, 2020). For the first time in the history of the last century, it has been demonstrated so unequivocally that the Health and Economy sectors are so inextricably linked. So, the cost of health prevention is much lower than the cost of the consequences of a weak health system.

**Key Words:** Pandemic, SARS-CoV-2, impact economics, Health sector.

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## HEALTH POLICY IN SWEDEN: DEALING WITH COVID-19

Ioanna Voutsas  
DIEK Komotinis  
Komotini, Greece  
e-mail: [voutsaiouanna@outlook.com.gr](mailto:voutsaiouanna@outlook.com.gr)

Georgios Karipoglou  
DIEK Komotinis  
Komotini, Greece  
e-mail: [gkaripoglou@yahoo.gr](mailto:gkaripoglou@yahoo.gr)

and

Aimilia Kazakou  
DIEK Komotinis  
Komotini, Greece  
e-mail: [emykaza@gmail.com](mailto:emykaza@gmail.com)

### ABSTRACT

Health is considered to be one of the essential tools that shape and characterize the development process of a state (M. Bayati, et.al, 2013). The health of the population, as a consequence of the health sector, is influenced by many factors such as economic and social conditions, inputs to the health sector and the type of health care systems. Sweden is considered to be a predominantly industrialized country with its economy being small, competitive and rapidly growing, being a welfare state, providing a basis for the health and well-being of the population, providing benefits, pensions and other benefits to those they really need it and by offering prevention, equal opportunities, fair distribution of wealth.

The Swedish Health System belongs to the category of National Health Systems and specifically to the Beveridge model, where compulsory insurance applies, coverage of the population, with increased state intervention and mostly in public infrastructure. These types of systems are characterized by high health costs and public funding through citizen taxation.

The Swedish system is organized in three levels, the national, the regional and the local (national, regional, local). A key point in acquiring its current form is the Law on Medical Services and Health Services (1982), which distributes responsibilities to county councils and municipalities for the planning and financing of health care services. Municipalities and county councils gain freedom in the organization and provision of health services (Theodorou et al., 2012; Polyzos, 2013).

The provision of primary health care is a cornerstone of the health system, with 1,100 units providing primary health care, although many primary services are provided in hospital clinics. In the counties there are about 70 public hospitals and 6 private ones while the highly specialized services (Highly specialized care) that require modern equipment are provided by the 7 public university hospitals of the country.

When the planet faced the pandemic, one country after another progressively decided to impose restrictive measures on Covid-19. Sweden was among the few countries in the world that chose to have a completely different tactic by not imposing a lockdown and automatically coming to the center of criticism. By adopting an unorthodox approach, the government not only refused to impose a lockdown but also imposed neither restrictive measures at its borders nor a curfew or even rules for the mandatory use of masks. Individual responsibility was the ideological background behind these policies. According to the logic of those in charge, the individuals themselves would have to decide how to manage the risk and risk of catching the coronavirus.

According to estimates from the University of Washington Institute for Health Measurement and Evaluation, the reported Swedish deaths from Covid account for about 90% of the extra deaths (i.e. deaths above normal levels) during the pandemic. For France the corresponding percentage is 78%, for Germany 68% and for the Netherlands only 58%. Denmark, Finland and Norway all have lower death rates than Sweden, but not low enough to approach the bridging of the mortality gap. Thus, Sweden had a moderate success in the battle with Covid-19. Given how much more successful the Scandinavian neighbors were and the fact that it entered 2021 with significant advantages, such as a very healthy population and among the highest percentages in the world of people who: live alone and can work from home, we can talk for frustration.

Sweden's approach to minimum school and business lockdowns, however, and its strong emphasis on individual responsibility seem to have worked better than the UK's ambiguous logic, which hovers between - on the one hand - severe lockdowns and - on the other - subsidizing people to visit restaurants or disagreeing with dozens of different policies pursued by state and county governments across the US.

The rise of non-cash payments following quarantine measures to address the pandemic has accelerated the role of technology in changing forms of money. The Swedish government announced a few months ago that it was considering switching to digital currency, signaling another step towards the unknown. The Riksbank, Sweden's central bank, estimated in October that cash use in Sweden had fallen to its lowest point ever as the pandemic accelerated the shift from banknotes and coins. Less than 10% of all payments are made in cash in Sweden, according to a bank survey.

With regard to the COVID-19 pandemic in any case, it is too early to draw conclusions from the successful and failed approaches of the pandemic. There is a very basic reason for this, and that is that we are talking about a multi-factorial issue: lockdown enforcement, the state of health systems, belief in institutions and science, and vaccination rates.

**Key Words:** Pandemic, SARS-CoV-2, impact economics, Health sector.

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# ELECTRONIC HEALTH RECORDS: ETHICAL ISSUES IN THE INTEROPERABILITY OF INFORMATION SYSTEMS

Iraklis Chasiotis  
Microbiology and Molecular Testing Laboratory  
Katerini Gen. Hospital  
e-mail: [irachas@gmail.com](mailto:irachas@gmail.com)

and

Evangelia - Zoe Chasioti  
Nutritional Sciences and Dietetics  
International Hellenic University  
e-mail: [evahasiotieh@gmail.com](mailto:evahasiotieh@gmail.com)

## ABSTRACT

The adoption of electronic systems in healthcare through Information Systems Technologies (ICT) has led to an increase in the quality of health care provided, the creation, collection, transfer and storage of healthcare data as well as their retrieval by authorized health professionals. The use of ICT leads to the reduction of medical errors, the reduction of costs, the immediate retrieval of data at any time and at any point and finally to the satisfaction of patients. The transfer of patients between different health care providers leads to the need for electronic means of recording examinations and reports so that they can be retrieved whenever necessary. The interoperability of information systems with each other for timely access to patient information such as Personal Electronic Patient Record (PHR) containing information such as history, diagnoses, medical and imaging examinations is considered necessary for data security. (Sarwal and Gupta 2021)

Health informatics involves the design and use of information and communication technologies in healthcare. The active involvement of users in the design, development, implementation and evaluation can contribute to the understanding of the needs and behavior of Information and Communication Technologies (ICT). The sensitivity of personal health data raises ethical concerns for the development of electronic records. This is due to the movement of patients to different health districts resulting in information being spread in different databases. However, the concept of interoperability becomes necessary to retrieve the complete medical record and patient history from certified health professionals in a consistent, reliable and transparent manner.

However, many ethical challenges arise such as the confidentiality of data traffic, access control and retrieval, invasion of privacy, storage, preservation and distribution of data. (Fatt 2016)

The discussion and recommendations that should take place concern the informed consent of patients and the right to autonomy, the security of personal data through the General Regulation of Personal Data (GDPR-Law 2016/679), Quality Assurance and planning safe and integrated interoperability of healthcare systems and how they can be addressed. (Rivera-Romero et al. 2020)

**Key Words:** AHFY, Ethics, Interoperability, GDPR, Information Systems.

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## WAYS OF EMPOWERING CITIZENS TO STRENGTHEN THE HEALTH CARE SYSTEM.

Stergiani Spyrou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [ssspyrou@gmail.com](mailto:ssspyrou@gmail.com)

and

Ioanna Argyriou  
Associate Professor in Secondary Education  
Thessaloniki, Greece  
e-mail: [argyriouioanna@hotmail.com](mailto:argyriouioanna@hotmail.com)

### ABSTRACT

This paper is a literature review and aims to explore the importance of empowering citizens to strengthen the health care system. In the last year, the health care system of Greece, as well as, the health care systems of the whole world, have experienced many difficulties. Citizens were confronted with events and decisions that cost them their freedom, their habits and, for many, the greatest good, their lives. Frequently, patients were unaware of the treatment chosen or its possible consequences. According to the World Health Organization, "Health promotion is the process of enabling people to increase control over, and to improve their health" (WHO, 1986).

Through empowerment we strive to achieve promotion of health. The main part of this paper presents some of the ways by which citizens, and medical and nursing staff, can contribute to the promotion of health. Furthermore, it is described how enhancing patients' autonomy and their active participation in decision-making affect the health care system and improve patients' nursing care. The importance of telehealth and telemedicine is analyzed, as they constitute two very important and evolving areas in the fields of medicine and empowerment. Reference is made to 5 applications that have been created and implemented in the European countries of Finland, Estonia, the Netherlands, Norway, and Greece. Finally, the benefits of empowerment through e-health, as well as, the ways it can be improved in Greece, are presented.

The main purpose of this review is to inform the citizens about the importance of their active participation in decision-making regarding their health. Another objective of this work is to inform the medical and nursing staff and to demonstrate ways of empowering the citizens. It has been proven that using the internet with all the new possibilities it offers, has positive effects on the health care system. After all, the use of the internet has greatly contributed in the creation of the patients' electronic record, a utility that is the main way of empowerment in Greece.

However, Greece should continue to develop in the field of empowerment of its citizens. As a member of the European Union, Greece should follow the example of other EU member-states that vigorously follow and implement the European directives, while offering innovative proposals in the field of health.

**Key Words:** citizens, health care systems

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## QUALITY OF HEALTH CARE SERVICES AND CLINICAL GOVERNANCE

Vasiliki Zelka  
MSc. Health Care Management  
Administrative Officer  
General Hospital of Chania  
Chania, Greece  
e-mail: [vasilikizelka@yahoo.gr](mailto:vasilikizelka@yahoo.gr)

Georgios Nikolaou  
MSc. Health Care Management  
Administrative Officer  
General Hospital of Chania  
Chania, Greece  
e-mail: [nikolaou\\_g@yahoo.gr](mailto:nikolaou_g@yahoo.gr)

and

Euaggelia Xidaki  
Head Nurse of Cardiology Department  
General Hospital of Chania  
Chania, Greece  
e-mail: [euaxidaki@gmail.com](mailto:euaxidaki@gmail.com)

### ABSTRACT

The concept and use of the term "clinical governance" began in the late 1990s in the United Kingdom, with the aim of creating a new health care system to improve the quality of health care services provided and the implementation of clinical quality standards by creating a patient safety culture in different countries (Gauld and Horsburgh, 2015). One definition of clinical governance is that "*a system through which NHS organisations are accountable for continuously improving the quality of their services and safeguarding high standards of care by creating an environment in which excellence in clinical care will flourish*". (Sally and Donaldson, 1998).

Clinical Governance is a systematic approach to ensuring and continuously improving the quality of health care services provided. It is a modern and effective institution, which is based on a framework that helps health care professionals to continuously improve the quality of health care services offered and to ensure standards of care (Sally and Donaldson, 1998; Papanikolaou, 2007).

The purpose of Clinical Governance is to provide the opportunity to ensure the essential elements for providing high quality care by creating an environment of learning, exploration, tolerance and balance in health care professionals. (Veenstra et al, 2017; Balding, 2008; Raftopoulos, 2009)

The primary goal of Clinical Governance is to adopt a culture of quality in health care services, in order to provide the best health care services, in the light of patient safety and quality. The main axes for the Clinical Governance system are a dynamic set of quality improvement processes:

1. The clinical audit
2. Clinical effectiveness
3. Risk management
4. Management of information in health care services

Other functions included are research and development, continuing education and training of staff, the establishment of protocols, and medical and nursing documentation.

In order to achieve an efficient Clinical Governance, all levels of operation of an Organization must be involved (Raftopoulos, 2009). Health care professionals have the ability to make changes and adjust care systems and procedures to optimize patient safety (Kadda, 2019).

The need to apply the principles of clinical governance in the Greek Health System to ensure and continuously improve the quality of health care services provided as well as the recording of the existing legal framework for quality management and clinical governance.

A bibliographic review of Greek and international bibliography of the last 20 years was carried out. Material was searched in electronic databases, libraries and on the website of the National Printing Office.

It becomes necessary to adopt and implement the clinical governance model in health care organizations. The existence of an adequate legislative framework facilitates its universal implementation.

Clinical governance contributes to improving the efficiency, safety and quality of health care systems, in order to achieve the best health care outcomes. An important role is played by the existence of an appropriate organizational culture in the environment of the health care organization for the successful implementation of Clinical Governance and Total Quality Management. The current Greek legal framework of administration reveals a multitude of laws that support and guide the actions and implementations of clinical governance and quality in health care services, however it is fragmentary. The recent establishment of the Organization for Quality Assurance in Health (ODIPY S.A.) is an effort to coordinate actions for the implementation of principles and standards of quality of health care services, enhance patient safety and the rational reorganization of health care services. Considering how much the proper functioning of the health care systems has been disrupted both in Greece and internationally in recent years due to the COVID19 pandemic, the need to implement drastic measures and integrated policies to meet the needs and expectations of those involved is understood.

**Key Words:** Clinical Governance, Clinical audit, Quality of healthcare services, Total Quality Management, clinical effectiveness, risk management.

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## PATIENTS' SATISFACTION IN THE PAIN CLINIC OF ANTICANCER HOSPITAL IN NORTHERN GREECE

Ioanna Valasiou  
Registered Nurse, Theageneio Hospital

and

Maria Lavdaniti  
Nursing Department, International Hellenic University  
e-mail: maria\_lavdaniti@yahoo.gr

### ABSTRACT

Pain is one of the most common and distressing symptoms among cancer patients. Measuring patient satisfaction by health services in the last decades is an important tool for assessing the quality of these services.

The purpose of this study was to assess the pain in advanced cancer outpatients and the influence of demographic characteristics on the same. Also, was to assess the satisfaction of cancer patients with chronic pain by providing health services Outpatient (EI) Pain at a large oncology hospital in Northern Greece in " as well as the factors affecting the level of satisfaction.

This was a cross-sectional study performed in a pain clinic at the aforementioned hospital. A questionnaire to determine the participants' demographic characteristics, the Patient Satisfaction Questionnaire - Short Form (PSQ-18) as well as the Brief Pain Inventory were used in this study.

The majority of patients were women ( $n = 82$ , 52,6%) and married ( $n = 74$ , 47.4%). The mean age of the sample was  $58,73 \pm 13,47$  years. Most of them had lung cancer ( $n = 33$ , 21.2%). The mean pain intensity (sensory dimension) level was  $5.44 \pm 1.34$ , and the interference of pain in the patients' life (reactive dimension) was  $5.67 \pm 2.87$ . A comparison of the pain intensity and demographic characteristics revealed statistical differences between the sensory dimension (pain intensity) and gender ( $p < 0.050$ ) but not between the reactive dimension (patient's life) and gender ( $p = 0.132$ ). To investigate the demographic factors (age, educational status, occupational status, family status, place of residence) that affect participant scores in the Brief Pain Inventory, a series of non-parametric tests were implemented. No statistically significant differences were detected in most variables ( $p = ns$ ). The Spearman correlation revealed a negative correlation between age and the sensory ( $p = 0.241$ ,  $r = -0.002$ ) and reactive dimensions ( $p = 0.281$ ,  $r = -0.001$ ) of pain. A correlation was found between satisfaction level and pain in the patients of the study ( $p < 0.05$ ). Regarding occupational status, civil servants showed a higher degree of satisfaction as well as those with private insurance, a high level of education, living in urban areas and having no co-existing diseases ( $p < 0.05$ ).

The majority of the patients in the pain clinic suffer from pain. Both the satisfaction and pain level of these patients are influenced by different socio-demographic and clinical factors. The assessment and effective management of cancer-related pain is an important measure in cancer care. It is recommended that health care professionals take these results into consideration to provide effective care in similar clinical settings.

**Key Words:** patients' satisfaction, anti cancer hospital.

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# ORGANIZATION AND ADMINISTRATION OF HEALTH CARE UNITS

## FUNCTIONAL ADDICTION AS A MEANS OF MOTIVATION IN HEALTH UNITS

Maria V. Letsiou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [maraki80@live.com](mailto:maraki80@live.com)

and

Spyros Avdimiotis  
Associate Professor  
International Hellenic University  
e-mail: [rdoffice@gmail.com](mailto:rdoffice@gmail.com)

### ABSTRACT

In the present work, an attempt is made to investigate whether the theory of functional addiction or enhancement of B.F. Skinner (1944) is a form of motivation for Health and Welfare staff, that is, whether a positive or negative reinforcement or reward, based on the consequences, can motivate them as well as the relationship of functional addiction to job satisfaction and leadership (Batiou and Valkanos, 2013). Recognizing also through a literature review, that the closeness of relationships - sociability and communication are the connecting link of all the above is additionally investigated their relationship with functional addiction. In the Greek Health Units of today, the employees, adopting an attitude of responsibility and reciprocity towards the society as a whole, (Tsounis et al 2013) must be more efficient and competitive as the new needs demand it. Leaders also need to guide, motivate and adopt a leadership style that will lead employees and the organization to excel (Aziri, 2011). In this new demanding and uncertain environment due to economic and social conditions, the performance of the employees of the Hellenic Health Units should be maintained at high levels. Therefore, it is considered appropriate for the management of the Health Units to seek new methods of motivation (Avdimiotis, 2019). The research is directed by five research cases, was implemented in the period January-February of the year 2021 and was attended by 129 employees of Hellenic Health and Welfare Units. It was done online using a structured questionnaire built through a Google application, with convenience sampling. Descriptive and inductive statistical analysis was used. For the data analysis the statistical program SPSS 17 was performed and in addition the software Amos 17 for the construction of the structural equation model. It proves to be a positive correlation between all the factors. All hypotheses are confirmed. Conclusions and suggestions follow, restrictions are identified and suggestions for future research are made.

**Key Words:** functional addiction, motivation, health care units.

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## ORGANIZATION AND ADMINISTRATION OF HEALTH CARE IN PRIMARY SCHOOL UNIT, IN THE CONTEXT OF HEALTH CRISIS COVID-19

Eleni Athanasiadou  
School nurse in primary education  
Msc International Hellenic University  
Thessaloniki, Greece  
e-mail: [nellyaaaaa@hotmail.com](mailto:nellyaaaaa@hotmail.com)

and

Ourania Gkouna  
PhD, University College London  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [ouraniagouna@gmail.com](mailto:ouraniagouna@gmail.com)

### ABSTRACT

With the outbreak of the pandemic of Covid-19, the present time is classified as a period of crisis. Byrd and colleagues (2017), characterize crisis as a sudden uncontrollable and extremely negative event that has the potential to affect the entire school community. For this reason, the school units should have set up response plans to deal with this crisis (Saitis & Saiti, 2018). School units should allow for flexibility, the ability to react at a sudden change, to be able to monitor current situations, and have organizational skills (Prayag, 2018). Also, every school should have crisis management plans tailored to its needs (Kraker, 2017).

The existence of the crisis management team is a crucial part in dealing with a crisis. This team is the first line of defense at school (Brock, Sandoval & Lewis, 2001). Therefore, it is important to provide this team with continuous, adequate and specialized training (Unesco, 2015). In this pandemic, education has been re-crafted, re-designed and re-booted as a home-based, technology enabled, on-line activity. However it is important to mention, that Greek schools had developed only one crisis management plan namely the one for earthquakes. This plan was organized and developed by the Greek Earthquake Planning and Protection Organization (OASP). It exclusively concerns the preparation for, treatment and prevention of injuries in an impending earthquake (Saiti & Saitis, 2012).

The goal of this study is to determine the attitudes and perceptions of school nurses who worked at Greek primary schools during the pandemic of Covid-19, as well as the preparedness of school units in facing potential crises. This research took place during the school year in 2021, April to June, with the participation of 275 school nurses. The methodological tool used was a digital questionnaire, with mostly closed-ended questions that provided quantitative data. It consisted of forty seven (47) questions, five-point Likert scale. It included seven thematic sections that concerned: a) Demographics, b) Crisis Management In The School Unit, c) Crisis Management Instruction Protocol d) School Unit Preparedness, e) Digital communication f) Communication with the family, g) Preparation for the School Year 2021-2022.

The results of the survey show that the majority of schools were not sufficiently prepared to be able to manage the pandemic Covid-19. The same applies for students and their families. Most school units work through virtual communication applications such as Webex or Zoom and most school nurses are not familiar with using this type of software. However, there were schools adequately equipped with the necessary material and logistic techniques. In a comparative review of international surveys, it was found that school units at other countries were more prepared than Greek school units, and had more material and equipment to provide their students with.

**Key Words:** School Nurse, School Unit, Crisis Management, Crisis Management Team, Crisis Management Plan, Pandemic Covid-19.

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## ORGANIZATION AND ADMINISTRATION OF PUBLIC HEALTH UNITS, COVID-19 CRISIS MANAGEMENT BY HEALTH PROFESSIONALS

Ourania Koumoutsou  
Preveza / Public Primary Health Care  
MSc International Hellenic University  
Preveza, Greece  
e-mail: [uraniakum@gmail.com](mailto:uraniakum@gmail.com)

and

Ourania Gkouna  
PhD, University College London  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [ouraniagouna@gmail.com](mailto:ouraniagouna@gmail.com)

### ABSTRACT

Severe Acute Respiratory Syndrome from Coronavirus (SARS-CoV-2) was initially detected in Wuhan of China. The disease caused by this coronavirus was named Coronavirus 2019 (Covid-19) (WHO, 2020; Aspriadis, 2021). The world community was called upon to deal with the Covid-19 pandemic and the ensuing health crisis (Farsalinos et al., 2021). The main strategy was the introduction of social distancing to reduce spread of the virus and avoid overwhelming the health care services, since the pandemic has put a lot of pressure on health care services and healthcare workers (Kanu et al., 2021). Health care professionals were on the frontline against Covid-19 Pandemic (Winkelmann et al., 2021). Engagement of staff involves motivation, acknowledgement of incentives and disincentives that affect human behaviour (Kanellopoulos, 2012). Incentives may change over time and they are also shaped by the current conditions (Franco et al., 2002). The Covid-19 pandemic has affected healthcare professionals in multiple ways, by increasing stress, emotional distress, uncertainty, fear, exhaustion, due to personal safety concerns (Huang et al., 2020; Mefi & Asoba, 2021).

In a working environment under pressure recognition of incentives is crucial for management as they can affect the performance of staff. Broadly, incentives could be divided into either internal or external. Internal incentives relate to how satisfied employees are from their work (Theodorakis et al 2015; Baljoonet al., 2018). Employees with internal motivations work and do their work responsibly without considering financial exchanges (Ryan & Deci, 2000; Gagne & Deci, 2005.) External incentives involves financial benefits, that would motivate staff to engage with personal or organisational targets and aspirations (Karagounis & Bellali, 2018) or could have the form of better working environment and flexible ways of working (Sato et al., 2017). External incentives promote staff engagement and contribute to the wellbeing and development of staff as well as of the organizations (Dixit & Singh, 2020). Education, financial incentives, organisation culture, opportunities for promotion and personal development are factors that are associated with better management and engagement of staff (Elsafy & Ragheb 2020). On the other hand, the absence of incentives has been associated with low performance on the part of staff (Okello & Gilson, 2015).

The main objective of this study was to identify the internal and external incentives used by health care organizations during the Covid-19 pandemic and how these could be modified and evolved to promote staff engagement and performance. The method used is a primary quantitative research and the study sample concerns 161 healthcare professionals. The data were gathered through a questionnaire exploring incentives affecting healthcare providers' motivation, based on the aspects of "Management", "Performance" and "Individual Aspects" as well as the impact of the demographic factors in terms of each one of the various aspects. In addition, there was an analysis of the aspects of "Human Resources during the pandemic of Covid-19", in relation to healthcare professionals' motivation. As far as the three dimensions (Management, Performance and Individual Aspects) are concerned, the research revealed that training seminars, the employment contract, and rotating hour shift schedule affect the motivation of healthcare professionals, while as far as the dimension of

“Human Resources” is concerned, endogenous motivation, wages and general motivation are the factors determining the support of healthcare providers during the pandemic Covid-19. Health care organizations should be exploring incentives that are associated with better engagement of human resources, such as working environment and conditions while also taking into account the fact that the presence of adequate resources and financial incentives are associated with better staff performance.

**Key Words:** Management crisis, motivation, encouragement, Human Resources, healthcare professionals, job satisfaction, efficiency, Covid-19, Greece.

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## ORGANIZATION AND CRISIS MANAGEMENT OF HEALTH AND WELFARE UNITS. THE CASE OF COVID-19 IN A REFERENCE HOSPITAL OF THESSALONIKI.

Aggeliki Manesioti  
Msc International Hellenic University  
Thessaloniki, Greece  
e-mail: [aggelikimanesioti70@gmail.com](mailto:aggelikimanesioti70@gmail.com)

and

Ourania Gkouna  
PhD, University College London  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [ouraniagouna@gmail.com](mailto:ouraniagouna@gmail.com)

### ABSTRACT

The state of crisis is the state of emergency, which can be caused by either natural or man-made disasters (Coombs, 2014). Managing this type of crises is a modern concept of management. Crisis management is defined as the process that includes predicting and dealing with the consequences of the events that were caused by the crisis (Obergatal, 2011). Managing a pandemic became much more important in 2020, when a disease caused by a new RNA virus, better known as Covid-19, led to a global pandemic (Jones, 2020). The aim of the present study is to investigate how a large hospital in the prefecture of Thessaloniki managed the health crisis of Covid-19. In particular, it involves the extent to which employees were satisfied with the hospital's coping strategies with Covid-19, their degree of familiarity with the hierarchy system in a crisis, and their satisfaction with job related support during the crisis. This study was based on the article of Yong et al., (2020) and in terms of methodology it used a combination of quantitative and qualitative research with the aim of receiving strong and compact feedback.

A structured questionnaire was delivered to 131 employees in public hospitals and 4 case studies of health professionals were studied with specific quality criteria. Based on the analysis of the data, the research concludes, among others, that the health professionals were moderately to slightly satisfied with the crisis management by the organization. The preparation on the part of organization was judged as insufficient and to a very small extent they were happy with the support they received. However, the preparation for dealing with a crisis begins when the existing crisis is over. Thus, the identification of the factors that made it difficult for health professionals to cope with this crisis and achieve its management is the framework for substantiating a more efficient management plan.

Training health professionals in crisis-free times is especially important. In addition, the improvement of communication methods in combination with the increase of the credibility of the public Health sector regarding the quality of the provided services gives validity. Communication strategy planning should be based on simplicity, consistence and accuracy. It is extremely important that the information be conveyed to the employees in a clear and comprehensible way. Establishing teams of health professionals to support staff could help in order to identify and address the occurrence of post-traumatic stress disorder and its effects.

**Key Words:** organizational management, crisis, hospital

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## COMMUNICATION, ORGANIZATIONAL CULTURE AND PROMOTION OF A HEALTH UNIT OF THE REGIONAL UNIT OF THESSALONIKI

Dimitra Patsiavoura  
MSc in Health & Welfare Management Units  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [dimitrabraxeiaogko@gmail.com](mailto:dimitrabraxeiaogko@gmail.com)

Ioanna Grigoriadou  
MSc, PhD candidate, International Hellenic University  
Department of Organization Management, Marketing & Tourism  
Thessaloniki, Greece  
e-mail: [ioanna.grig@outlook.com](mailto:ioanna.grig@outlook.com)

Dimitrios Theocharis  
MSc, PhD candidate, International Hellenic University  
Department of Organization Management, Marketing & Tourism  
Thessaloniki, Greece  
e-mail: [dim.theocharis@yahoo.gr](mailto:dim.theocharis@yahoo.gr)

Greta Hoxha  
MSc in Health & Welfare Management Units  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [iwannachotza@gmail.com](mailto:iwannachotza@gmail.com)

and

Dr. Georgios Tsekouropoulos  
Assistant Professor, International Hellenic University  
Department of Organization Management, Marketing & Tourism  
Sindos Thessaloniki  
e-mail: [geotsek@bua.teithe.gr](mailto:geotsek@bua.teithe.gr)

### ABSTRACT

The service is a benefit that provides an object of transaction, an abstract activity or process of activities that are essentially produced, placed on the market, and consumed in a simultaneous interaction (Lehtine and Järvinen, 2015). The quality provision of health services contributes fundamentally to the state of health of the population, along with other factors, including social determinants of health (WHO, 2010). Health organizations are now called upon to operate in a framework defined by intense pressure to increase the quality of the services provided, but also to limit costs. The aim of this study is to examine communication - marketing, organizational culture and the promotion of a health unit in the Municipality of Thessaloniki.

The four primary goals of service marketing are to build trust, empower service staff, establish unified processes, and promote customer satisfaction (Sravana, 2015). In the case of health units, this is complemented by the characteristics of the health good, such as behaviour, consumer/patient expectations and perceptions, ethical standards, the need for personal interaction, the nature of demand and supply, technological innovations (Verma, 2001; Rădulescu et al., 2008; Vijaywargia, 2012; Gunawardane, 2020). The importance of the marketing plan on the part of the health units is also noted. However, little research has been carried out in this field, especially in Greece. For the most part, health organisations are not the subject of empirical research in the context of the marketing plan. In addition, Folland, Goodman and Stano (2013) mention a key feature of the health sector, which is the existence of demand and supply uncertainty. Consumers are unsure of their state of health and need

health care at any time. Uncertainty also prevails on the supply side. Consumers are often unaware of the expected results of various treatments without the advice of doctors, and in many cases the doctors themselves cannot predict with certainty the results of the treatments.

With the present study, the above is examined in the case of a hospital unit. The method used for the purposes of this research is quantitative and specifically polling and correlative. The questionnaire of this research was designed by the researcher exclusively for the purposes of this work in the database of the international literature. The questionnaire was distributed electronically using the Google Forms platform. The sample of the present survey consists of a total of 109 people, including 37 patients and 70 health professionals of a nursing unit in Thessaloniki.

The result that this research has led us to is that the hospital has a marketing department and an existing marketing plan. However, it does not focus on very much at the resources and does not invest heavily in exploring the views of internal and external customers. It also emphasises communication with patients, but not so much with employees, despite creating value for the latter. Regarding communication, it was found that the hospital makes use more of new technologies and less of traditional communication tools. Moreover, respondents tend to be informed about the hospital more than new technologies, while at the same time a higher degree of satisfaction was noted from online versus offline advertising. Overall, to a considerable extent, hospital marketing is adequate and effective on the basis of the current health situation. Finally, the demographic characteristics of the respondents were found to influence some of the responses that were noted in the investigation.

The final conclusion is that there should be greater and more effective projection of the hospital. There is also the need to reshape the marketing plan in order to increase its effectiveness. Internal and external analysis can assist in this direction. Overall, the creation of a "roadmap", i.e. a set of guidelines, involving all stakeholders, could be very useful to hospital units aiming to implement a marketing plan.

**Key Words:** Communication, organizational culture, marketing, health services, hospital unit.

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## ORGANIZATIONAL CULTURE AND LEADERSHIP

Kristina Hoxha  
Med in Special Education  
Frederick University  
Limassol, Nicosia  
e-mail: [chotzachristina@gmail.com](mailto:chotzachristina@gmail.com)

and

Dimitris Theocharis, PhDc  
Hellenic International University  
Thessaloniki, Greece  
e-mail: [dim.theocharis@yahoo.gr](mailto:dim.theocharis@yahoo.gr)

### ABSTRACT

The aim of this study is to show through a literature review, the importance of the impact that leadership has within a health care organization. The term “culture” is a complex concept with many definitions that vary depending on the researcher and represents something deeper. While the term “climate” is a closer concept and is more related to the current situation of an organisation (Koutouzi & Pavlakis, 2018). Culture as a broader sense, includes the concept of climate (Stolp & Smith, 1995). The concept of “organizational culture” refers to the values and ideology of an organisation and includes the habits and perceptions that differentiate it from other organizations (Hatzipanagiotou, 2012). In particular, we will focus on organizational learning culture, as learning is one of the parameters that also have an effect on the community in general. A health care provider is a complex organization socially and politically (Brown, 2004). Culture influences all areas within the organization, as in the personnel’s behavior, on issues for discussion, in the learning process etc. Therefore, it affects the effectiveness of employees and thus patients’ health improvement (Kowalski & Reitzug, 1993).

In recent decades, the issue of learning leadership has developed. Research on the different effects of educational - learning leadership in the health care organization continues to this day (Alger, 2008). Surveys that took place the last decades, show that organizational culture and leadership in an organization is the key to its success (Bass & Avolio, 1992). Implementation of appropriate leadership and culture to health and social care organizations, reveals that it works efficiently (Goula, Kefis, Stamouli, Pierrakos & Sarris, 2014). Last but not least, the role of the leader is paramount in shaping the organizational culture. A leader- director should aim at creating a productive organizational climate, to create a steady organizational educational culture aimed at the efficiency and improvement of employees’ learning and skills (Alger, 2008).

**Key Words:** Organizational culture, educational leadership.

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# DIGITAL TECHNOLOGIES IN HEALTH CARE

## PATIENT SATISFACTION WITH THE USE OF TELEMEDICINE DURING COVID-19 PANDEMIC

Nikola Savić  
Medical school "Dr Miša Pantić"  
Valjevo, Serbia  
Singidunum University, Faculty of Health and Business Studies  
Valjevo, Serbia  
e-mail: [nikolasavicvzs@gmail.com](mailto:nikolasavicvzs@gmail.com)

Sanja Kocić  
Institute of Public Health  
Kragujevac, Serbia  
University of Kragujevac, Faculty of Medical Sciences  
Kragujevac, Serbia  
e-mail: [kocicsanja@yahoo.com](mailto:kocicsanja@yahoo.com)

and

Zoran Jokić  
Polyclinic Jokić  
Valjevo, Serbia  
Singidunum University, Faculty of Health and Business Studies  
Valjevo, Serbia  
e-mail: [zjokic@singidunum.ac.rs](mailto:zjokic@singidunum.ac.rs)

### ABSTRACT

The use of telemedicine in the treatment of patients began more than 50 years ago. Despite the intensive advances in technology, the use of telemedicine is still low. In order to reduce exposure to infection COVID-19 and to improve the availability of health services, telemedicine is becoming the choice of many health professionals (Shahzad et al., 2020). According to the World Health Organization, telemedicine is the provision of health services using technology. Telemedicine is a live, two-way interaction through audio and visual communication (Layfield et al., 2020). Patient satisfaction with telemedicine is high. Telemedicine has various benefits, provides continuous health care and lowers treatment costs (Orrange et al., 2021). According to a study by the World Health Organization, conducted in 155 countries, most countries have reported a partial interruption in the continuity of health services. Because the health service had to be organized in such a way as to respond to the demands of the global pandemic. More than 50% of countries have postponed preventive examinations and screening tests. Telemedicine has proven to be a useful method of working in a pandemic (Aashima and Sharma, 2021). Research conducted in the United States proves a high degree of patient satisfaction (74%) with telemedicine services during a pandemic, especially audio-visual contact with a healthcare professional (Mortezavi et al., 2021). Telephone consultations are of great importance in non-covid patients with chronic non-communicable diseases (Zammit et al., 2020). The research is designed in the form of a cross-sectional study. The research instrument is a questionnaire on patient satisfaction with telemedicine during a pandemic. The study involved 120 health care users. Necessary consents for conducting a scientific study have been obtained. The research was realized in the Polyclinic Jokić, Valjevo, Serbia. The research was voluntary and anonymous. The survey of respondents was conducted by researchers in person. The criterion for the inclusion of respondents in the research is that they have given their personal consent to participate in the research. The criterion for not including the respondents is that they did not give their consent to participate in the research. Also, the reason for exclusion from the research is the attitude of the respondents that they do not want to answer all the questions from the questionnaire. The analysis of the obtained data was performed using the statistical program SPSS. The ANOVA test was used as a statistical method. The main results show that telemedicine is still in most cases inaccessible to health care users (ANOVA- 10.247,  $p=0,002$ ). The level of satisfaction with the use of telemedicine is high



(82%) in the sample of respondents who used this method of communication with health professionals ( $p=0,001$ ). Telemedicine was most commonly available in dentistry and psychiatry. Patients point out that a sense of security and access to health care is the greatest advantage of telemedicine during a pandemic ( $p=0,002$ ).

**Key Words:** Telemedicine, health care, health services, pandemic COVID-19.

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## BLOCKCHAIN TECHNOLOGY APPLICATIONS IN HEALTHCARE INDUSTRY

Panagiotis Moschotoglou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [dommt00920@ommt.ihu.gr](mailto:dommt00920@ommt.ihu.gr)

Stella Tsifitopoulou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [dommt01420@ommt.ihu.gr](mailto:dommt01420@ommt.ihu.gr)

Vasiliki Kefalidou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [dommt00620@ommt.ihu.gr](mailto:dommt00620@ommt.ihu.gr)

Spyros Avdimiotis  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [soga@ihu.gr](mailto:soga@ihu.gr)

and

Panagiotis Kassianidis  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [kassianp@ihu.gr](mailto:kassianp@ihu.gr)

### ABSTRACT

Blockchain is considered by many to be a destructive core technology (Xu et al., 2019), which is expected to have a significant impact in many industries including the healthcare industry (Agbo et al., 2019). Blockchain is ostensibly a decentralized and distributed digital database containing and storing in chronological order sets of digital records and transactions, which are interconnected together in a list of blocks using cryptography. A time-stamped data block (containing these transactions) is created through a decentralized consensus mechanism among the nodes according to predefined protocols (Hassan et al. 2019), providing a reliable storage and efficient use of data (Novikov et al., 2018; Xu et al. 2019). Blockchain provides trust in transactions through distributed databases and cryptographic algorithms to ensure data integrity in the network. Thus, the two key properties of blockchain are decentralization and immutability. Decentralization refers to a situation where no single entity controls the processing of a transaction (Treiblmaier, 2020). Since a blockchain is distributed in nature, no single hardware infrastructure or master computer is available to manage the entire network (Kim, 2021). Decentralization also enables a participant to have access to information even when a system on the network shuts down. Immutability is similar to tamper resistance in that blockchain data are difficult to alter or modify, preventing unauthorized access of data because an attacker has to manipulate every single piece of the information on the blockchain (Kim, 2021). This research paper strives to illuminate the role and the contribution of blockchain to this industry. One of the focal points of the conducted research is whether blockchain can advance healthcare system. Furthermore, it is investigated the way this newly invented technology can refine medical healthcare system. Additionally, this research paper tries to identify the characteristics of blockchain that would amend a lot to medical healthcare system. Moreover, there is an attempt to emphasize the reliability of blockchain to healthcare system emphasizing to the fundamental properties of blockchain that are decentralization and immutability. Lastly, it is highlighted the demand to assure the quality of services provided.

This research paper has an attempt to shed light to the key problems in existing healthcare industries. Through the application of blockchain in healthcare industry, these weaknesses could be considered as opportunities in the future. Respectively, it would be recommended beneficial solutions based in blockchain technology. The research has been done by bibliographical research and more specifically by employing international articles published from 2018 until 2021. Since one of the research aims of this research paper is exploratory, the research methodology that it has been conducted is qualitative approach. Stated differently, the paper is trying to clarify blockchain and its implementation in healthcare industry.

Nowadays, several studies have stated that blockchain technology and its aspects impact significantly healthcare industry (Agbo & Mahmoud, 2020; Hussien et al. 2021; Sharma et al. 2021). Recently, due to the immense emergence of the pandemic wave, a new challenging reality has been revealed for the healthcare system worldwide. Since the management of a health crisis is regarded as extremely difficult, current situation has forced in a way to re-examine healthcare delivery results, in order to protect constancy of services. Meanwhile the majority of people worldwide is obliged to stay at home and keep social distancing. Onward new priorities need to be redefined to ensure the sustainability of a healthcare system, that is more patient-centric. The recent pandemic has functioned as a motivation and thus the digitalization of healthcare system is deemed crucial, in order to facilitate both probable patients and health units. The lack of interconnection and interoperability of the systems has led to an untapped wealth, creating significant opportunities to exploit blockchain in the future. Another fundamental point that should be taken into consideration is the fact that blockchain provides a reliable storage and efficient use of data (Pirtle & Ehrenfeld, 2018; Daraghmi et al., 2019; Zhou et al., 2019; Rajeb et al. 2021). Apart from that blockchain ensures data integrity in the network (Yaqoob et al. 2021). For the time being blockchain is expected to be adopted almost universally in medical organizations around the world (Kuo et al. 2017). Blockchain technology is decisive not only for biomedical but also for human service applications since social insurance has proven to be one of the most outstanding areas of the blockchain technology. Blockchain is a promising and evolutionary technology and healthcare industry is one of the most essential and forthcoming area for adoption of this new underlying technology.

**Key Words:** blockchain technology, healthcare industry, decentralization, immutability.

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## INVESTIGATION OF THE EFFECTIVENESS OF ONLINE VIDEO IN SKILLS LEARNING OF NURSING STUDENTS

Meryem YAVUZ Van GIERBERGEN  
Lecturer, Professor, RN, MSc, PhD  
Department of Surgical Nursing, Ege University Faculty of Nursing  
Izmir, Turkey  
e-mail: [meryem.yavuz@ege.edu.tr](mailto:meryem.yavuz@ege.edu.tr)

Gamze İNCİ  
Ege University Faculty of Nursing, Grad student  
Izmir, Turkey  
e-mail: [gamze\\_inci\\_95@hotmail.com](mailto:gamze_inci_95@hotmail.com)

Beyzanur EĞRİ,  
Ege University Institute of Medical Sciences, Msc student  
Izmir, Turkey  
e-mail: [beyzanuregri12@gmail.com](mailto:beyzanuregri12@gmail.com)

and

Burçak ŞAHİN KÖZE  
Lecturer, Research Ass, RN, MSc, PhD  
Department of Surgical Nursing, Ege University Faculty of Nursing  
Izmir, Turkey  
e-mail: [burcak.sahin.koze@ege.edu.tr](mailto:burcak.sahin.koze@ege.edu.tr)

### ABSTRACT

This study was conducted to examine the effectiveness of online video use in nursing students' skill learning.

This is a descriptive study. The research was conducted between February 2021 and June 2021. The population of the study consisted of 1300 students studying at the Faculty of Nursing of a university in Turkey, and 708 students who agreed to participate in the study, the sample consisted of. The research data consists of 23 questions prepared by the researchers in line with the literature and was collected through an online questionnaire. The obtained data were transferred to the SPSS 26 (Statistical for Social Sciences) program and analyzed as numbers, percentages and averages.

In the study, the mean age of the students was  $21.65 \pm 1.74$  (min:18 max:38), 83.3% (n:590) were female, 27.3% (n:193) were first class, It was determined that 51% (n:361) followed the registered courses later. 70.9% (n:502) of the students thought that Microsoft Teams provided convenience in watching the course videos recorded in distance education, 31.9% (n:226) had technical problems while watching the video, 34% (n :241) stated that the sound quality was not good while watching the video, 70.9% (n:502) stated that the videos were uploaded to the system, 64.3% (n:455) stated that the links related to the videos were given. It was determined that the effect of the videos shown in the theoretical lessons on the learning levels of the students was  $5.97 \pm 2.13$  out of 1 to 10, the effect of the videos shown in the laboratory lessons on the learning levels was  $5.81 \pm 2.33$  on average, the effect of the videos shown in the practical lessons on the learning levels was  $5.76 \pm 2.35$ . It was seen that the effect of video use in lessons on students' learning levels was  $5.85 \pm 2.10$ , the effect of video use in lessons on students' understanding of the subject was  $6.18 \pm 2.12$ .

In the study, it was determined that the students watched the videos of the recorded lessons in distance education later, followed the recorded lessons with Microsoft Teams, and sometimes had a technical problem while watching the video. It is recommended to increase the number of videos and enrich the video content for distance education to be more efficient.

**Table 1. Socio-Demographic Characteristics of the Students**

<b>Age</b>	21,65±1,74 (min:18 max:38)		
<b>Gender</b>	<b>Number (n)</b>	<b>Percentage (%)</b>	
Female	590	83.3	
Male	118	16.7	
<b>Grade level</b>	<b>Number (n)</b>	<b>Percentage (%)</b>	
1st Class	193	27.3	
2nd Class	172	24.3	
3rd Class	170	24	
4th Class	173	24.4	
<b>Total</b>	<b>708</b>	<b>100</b>	

**Table 2. Students' Data on Online Video Use**

<b>Watch status of recorded lecture videos</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
Yes	361	51
Sometimes	308	43.5
No	39	5.5
<b>Ease of viewing recorded lecture videos</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
Microsoft Teams	502	70.9
University's own system	196	27.7
Zoom	3	0.4
YouTube	3	0.4
Other	4	0.4
<b>Technical problem during video watching</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
Yes	226	31.9
Sometimes	421	59.5
No	61	8.6

<b>Technical problem during video watching</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
Sound quality was not good	241	34
Image quality was not good	225	31.8
The sound never came	64	9
Other	178	25.1
<b>Status of uploading videos to the system</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
yes installed	502	70.9
sometimes loaded	194	27.4
No not loaded	12	1.7
<b>Status of giving links to videos to students</b>	<b>Number (n)</b>	<b>Percentage (%)</b>
yes given	211	29.8
Sometimes given	321	45.3
No not given	176	24.9
<b>Total</b>	<b>708</b>	<b>100</b>
The contribution of the videos shown in the theoretical lessons to your learning level (1 very little, 10 the highest)	5.97±2.13	
The contribution of the videos shown in the laboratory lessons to your learning level (1 very little, 10 the highest)	5.81±2.33	
The contribution of the videos shown in the practice lessons to your learning level (1 very little, 10 the highest)	5.76±2.35	
The effect of video use in lessons on your learning level	5.85±2.10	
The effect of using video in lessons on your understanding of the subject	6.18±2.12	

**Key Words:** Nursing students, online video, skill acquisition.

## FEEDBACK OF NURSING STUDENTS ON THE EVIDENCE BASED NURSING COURSE IN THE PROCESS OF DISTANCE EDUCATION

Meryem Yavuz van Gierbergen  
Ege University Faculty of Nursing  
Department of Nursing  
Izmir Turkey  
e-mail: [meryem.yavuz@ege.edu.tr](mailto:meryem.yavuz@ege.edu.tr)

Züleyha Aykut  
Ege University Faculty of Nursing  
Department of Nursing  
Izmir Turkey  
e-mail: [zuleyha.aykut@ege.edu.tr](mailto:zuleyha.aykut@ege.edu.tr)

and

Burçak Sahin Koze  
Ege University Faculty of Nursing  
Department of Nursing  
Izmir Turkey  
e-mail: [burcak.sahin.koze@ege.edu.tr](mailto:burcak.sahin.koze@ege.edu.tr)

### ABSTRACT

This study was conducted to evaluate the course feedback of nursing students about Evidence Based Nursing course in the distance education process and to guide the creation of the course content for the next term.

It is a descriptive study. The research was conducted with 60 third-year students who agreed to participate in the study enrolled in a Faculty of Nursing Evidence Based Nursing course between September 2021 and December 2021. The data were collected with the Evidence Based Nursing course evaluation form consisting of 25 questions. Students were asked to give 1-10 points to their evaluations about the course. The data were transferred to the SPSS 22 (Statistical for Social Sciences) program and analyzed as numbers, percentages, and averages.

The mean age of the students in the study was  $21.97 \pm 1.22$  (n:37) and 61.7% of them were women. 63.3% (n: 38) of the students were graduated from Anatolian High School, 66.7% (n:40) of them used mobile internet, 61.7% (n:37) of them had a time between 1-5 hours a day. it was determined that they allocate to internet use and use 96.7% (n:58) of this time for education/information. It was observed that 95% (n: 57) of the students had previously experienced making presentations in the course, 65% (n: 39) of the students made a guide presentation and 33.33% (n: 20) made a topic presentation. When the years of the guides presented are examined (n:6) 15.4% are 2021; (n:5) 12.8% 2020; (n:3) 7.7% of 2019; (n:5) 12.8% 2018; (n:20) 51.3% of them were published in 2017 and before. When the number of recommendations of the guides was examined, it was found that min:6, max:100, the mean was  $21.35 \pm 19.21$ , the degrees of the recommendations were stated in 76.9% (n:3) and 61.5% of the presented guidelines (n:24) was found to belong to RNAO (Table 1).

The course-related evaluation averages of the students; the level of satisfaction with the course being taught with Microsoft Teams is  $8.93 \pm 1.43$ ; the level of satisfaction with communication via WhatsApp about the course was  $8.88 \pm 1.60$ ; the level of satisfaction with sending exam-homework through the University Ege course was  $8.77 \pm 1.54$ ; the overall satisfaction level of the course was  $8.35 \pm 1.52$ ; the effect of integrating the course contents with the guide on your understanding of the subject is  $7.88 \pm 1.77$ ; the level of satisfaction with the "topic-guide presentation" application used in the course content was  $7.83 \pm 1.87$ ; the contribution of the guides to your education is  $7.67 \pm 1.82$ ; it was seen that the effect of your presentation practice in the lesson on your learning level was  $7.60 \pm 2.05$  (Table 2).



More than half of the students did not have knowledge about evidence-based practices before the lesson; With the course, it was seen that the students had knowledge about evidence-based practices, how to access the guides and how to evaluate the existing guides. It was determined that the students were generally satisfied with the course content and teaching. It is thought that in the distance education process, students' presentation of topics and guides so that they can contribute actively to the lessons and integrating the course topics with the guides contribute positively to the learning level and satisfaction of the students.

**Table 1 Course and Student Profile**

	Number	Percent
<b>Gender</b>		
Woman	37	61,7
Male	23	38,3
<b>High school he graduated from</b>		
Anatolian High School	38	63,3
Science High School	10	16,7
Other	5	8,3
Health vocational high School	4	6,7
Industrial Vocational School	3	5,0
<b>The environment in which you use the Internet is mostly</b>		
Mobile	40	66,7
House	30	50
University	18	30
<b>Your time spent on the Internet</b>		
1-5 hours	37	61,7
6-10 hours	23	38,3
<b>Internet usage purpose</b>		
Education/Information	58	96,7
Social media	56	93,3
Communication	54	90,0
Other	37	61,7
<b>Cases of trying to make a presentation in the lesson before</b>		
Yes	57	95,0
No	3	5,0
Guide presenter	39	65
Presenter of the topic	20	33,33
Not presenting	1	1,66
<b>Guide years</b>		
2021	6	15,4
2020	5	12,8
2019	3	7,7
2018	5	12,8

2017 and before	20	51,3
<b>Grade specified in the guides</b>		
Yes	30	76,9
No	9	23,1
<b>Featured guides</b>		
RNAO	24	61,5
Other	15	38,5

**Table 2**  
**Student Evaluations**

Question	Min.	Max.	Average	Std. Deviation
The level of satisfaction with the course being taught with Microsoft Teams	4	10	8.93	1.43
Satisfaction level of communication via WhatsApp about the course	3	10	8.88	1.60
The level of satisfaction with sending exam-homework through the University system	3	10	8.77	1.54
The level of satisfaction with the overall course	3	10	8.35	1.52
The effect of integrating the course contents with the guide on your understanding of the subject	3	10	7.88	1.77
The level of satisfaction with the “topic-guide presentation” application used in the course content	3	10	7.83	1.87
The contribution of the guides to your education	3	10	7.67	1.82
The effect of your presentation practice in the lesson	1	10	7.60	2.05

**Key Words:** Evidence Based Nursing course, Student, Distance education.

# ALTERNATIVE ASPECTS OF HEALTH CARE MANAGEMENT

## REAL TIME RT-PCR LABORATORY SURVEILLANCE FOR SARS-COV-2 IN THE POPULATION OF THE PIERIA PREFECTURE AT THE KATERINI GENERAL HOSPITAL

Iraklis Chasiotis  
Microbiology and Molecular Testing Laboratory  
Katerini Gen. Hospital  
e-mail: [irachas@gmail.com](mailto:irachas@gmail.com)

Ioannis Zormpas  
Blood bank and Molecular Testing Laboratory  
Katerini Gen. Hospital  
e-mail: [zorbasj@outlook.com](mailto:zorbasj@outlook.com)

Eleftherios Zormpas  
Faculty of Medical Sciences, Biosciences Institute  
Newcastle University, United Kingdom  
e-mail: [zormpaslef@outlook.com](mailto:zormpaslef@outlook.com)

and

Evangelia – Zoe Chasioti  
Nutritional Sciences and Dietetics  
International Hellenic University  
e-mail: [evahasiotieh@gmail.com](mailto:evahasiotieh@gmail.com)

### ABSTRACT

Early diagnosis is important in the identification, isolation, contact tracing and containment of COVID-19, limiting the propagation of the disease. Real time reverse transcription PCR (rtRT-PCR), due to its sensitivity and specificity, is the reference method for the diagnosis and confirmation of SARS-CoV-2 infection((WHO) 2020),(CDC 2020).

The objective of this study was the epidemiological documentation of the SARS-CoV2 laboratory surveillance of the Pieria prefecture population, and was limited to individuals who underwent molecular testing at the Katerini Hospital Molecular Testing Laboratory.

From January 2021 to January 2022, 15486 nasopharyngeal and/or oral samples were examined for SARSCoV-2RNA within 24 to 48 hours from sampling. Viral RNA was extracted from collected samples with the Mag MAX Viral/Pathogen II Nucleic Acid Isolation Kit (Applied Biosystems) and it was amplified with the rtRT-PCR TaqPath COVID-19 kit at the QS5x thermocycler (Thermo Fisher) (*Emerging Variants - GVN n.d.*).

The reports were generated using the Applied Biosystem COVID-19 Interpretive Software.

We examined 15486 samples, 8051 (52%) from women and 7435 (48%) from men. The patients' ages ranged from 7 days to 103 years, with the age group 40-79 years being the predominant (56,46%). Of these samples, 4627 (29.9%) concerned hospitalized patients, while the remainder came from the Prefecture's regional health structures. First time testing was performed on 13828 (89.3%) patients and retesting on 1658 (10.7%). Positive samples were 3771/15486 (24.3%), 1890 (50.8%) from men and 1881(49.2%) from women, with predominant (29.9%) the age group of 40-59 years (Table 1).

**Table 1.**  
**Positivity distribution (%) in men and women age groups**

Age group (years)	Men	Women	Total
0-19	24.2	21.7	23
20-39	20.7	21.3	21
40-59	27.7	32.0	29.9
60-79	21.2	16.9	19
Over 80	6.1	8.1	7.1

The majority of the positive samples (3352/3771, 88.9%) came from newly diagnosed patients. The monthly positivity distribution ranged from 6.24% to 59.76%, UK variant wave: 6.24- 15.69%, Delta variant wave: 17.38-52.89% and the Omicron variant wave: 59.76% (Table 2). Because the PCR kit allows the B.1.1.7 (UK variant) and B.1.1.529 (Omicron variant) detection via absence of the Spike protein gene target (S dropout effect), the S dropout effect was detected in 1371 of the 3771 positive samples (36.4%). The highest values of S dropout were observed in April 2021 (89.8%) and January 2022 (93%), during the UK and Omicron variant waves respectively, and the lowest (0%) in October and November 2021 during the Delta variant wave (Table 2). The PCR Ct values for the positive samples, were evenly distributed (18-38) during the UK and Delta waves in contrast to the respective ones during the Omicron wave (12-38, mostly 14-22), indicating higher viral load.

**Table 2.**  
**Monthly samples tested, positivity and S dropout distribution**

Month	Samples	Positive Samples (%)	Positive Samples with S Dropout (%)
January 2021	719	59 (8.21%)	11 (18.64%)
February 2021	1353	132 (9.76%)	51 (38.64%)
March 2021	1495	214 (14.31%)	166 (77.57%)
April 2021	1192	187 (15.69%)	168 (89.84%)
May 2021	946	100 (10.57%)	87 (87.00%)
June 2021	926	67 (7.24%)	29 (43.28%)
July 2021	1074	67 (6.24%)	18 (26.87%)
August 2021	1151	200 (17.38%)	11 (5.50%)
September 2021	635	124 (19.53%)	4 (3.23%)
October 2021	893	242 (27.10%)	0 (0.00%)
November 2021	1735	501 (28.88%)	0 (0.00%)
December 2021	1953	1033 (52.89%)	40 (3.87%)
January 2022	1414	845 (59.76%)	786 (93.02%)
<b>Total</b>	<b>15486</b>	<b>3771 (24.30%)</b>	<b>1371 (36.36%)</b>

The positivity was lower (6.24- 15.69%) during the UK wave, compared to that of the Delta (17.38- 52.89%) and the Omicron (59.76%) waves, in accordance with the strain contagiousness and viral load of the samples. In the laboratory of our hospital, since the beginning of 2021, we examined a large number of samples and, using the above-mentioned kit, contributed to the immediate and accurate diagnosis of COVID-19, distinguishing the viral strain variants via the S dropout effect and allowing the clinical management of hospitalization, tracking of transmission clusters, contact tracing and containment of COVID-19 in the different regions of Pieria prefecture.

**Key Words:** Real time RT-PCR, SARS-CoV-2, Variants, epidemiological documentation.

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## ASSESSMENT OF SAFETY CLIMATE AND INTERCOLLABORATION IN THE OPERATING ROOM DURING PANDEMIC COVID 19 PERIOD

Associate Professor Maria Malliarou  
University of Thessaly  
Larisa, Greece  
e-mail: [malliarou@uth.gr](mailto:malliarou@uth.gr)

Magdalini Soutzidou  
Hellenic Open University  
Patras, Greece  
e-mail: [linasoutzidou@gmail.com](mailto:linasoutzidou@gmail.com)

and

Associate Professor Pavlos. Sarafis  
University of Thessaly  
Larisa, Greece  
e-mail: [psarafis@uth.gr](mailto:psarafis@uth.gr)

### ABSTRACT

Nursing perspectives are central to a fully interprofessional approach. In particular, patient safety and quality of care in hospital settings are closely related to nursing practice, as are the sheer size of the nursing force, its relationship with medical practice (both maladaptive and complementary), and nursing shortages. (Kenaszchuk et al. 2010) The purpose of the study was to investigate the safety culture and inter-collaboration in the operating room. The sample consisted of 76 physicians and nurses who were asked to answer the Safety Attitude Questionnaire (SAQ), which deals with safety behaviors and Interprofessional Collaboration Scale which measures communication, accommodation, and isolation. This 13-item scale aims to measure perceptions of interprofessional collaboration between nurses, physicians and other health professionals. The items were written from the perspective of respondent groups to name other professionals as targets of the item concepts (e.g. 'nurses have a good understanding with physicians about our respective responsibilities'). Items were adapted from the Nurses' Opinion Questionnaire (Adams et al. 1995). The scale's items were written in a round-robin format to specify 'target' groups and 'rater' groups. The three underlying subscales address communication with other groups, accommodation and isolation/autonomy (Kenaszchuk et al. 2010) The SAQ is comprised of 30–60 items measured on a 5-point Likert scale (Sexton et al, 2006). Participants when asked if they apply the safety checklist to surgery, 59.2% of them answered positively, while a corresponding percentage of participants (55.3%) answered positively to the question whether during the pandemic period received some training on the use of personal protective equipment in the operating room. Also noteworthy is the fact that only 47.2% of the participants stated that there is an adequacy of personal protective equipment for Covid 19 in the operating room. The score of the participants in the "Communication" scale ranged between 7 and 17 points, with the average value being equal to 13 points (SD = 2 points) and 50% of the participants having a score less than or equal to 13 points. Also, their score on the "Accommodation" scale ranged between 8 and 19 points, with the average value being equal to 12.9 points (SD = 2.3 points) and 50% of the participants having a score less than or equal to 13 units. Finally, the score of the participants in the "Isolation" scale ranged between 3 and 10 points, with the average value being equal to 7.8 points (SD = 1.5 points) and 50% of the participants having a score less than or equal to with 8 units. There was a statistically significant positive correlation between the "Joint Education - Teamwork" scale and the same two scales ("Safety Climate" and "Job Satisfaction"), indicating that individuals with a greater orientation towards interdisciplinary education and interprofessional collaboration, tend to have better perceptions of a strong organizational commitment to safety, as well as more positive views of their work experience. At the same time, a statistically significant positive correlation of these two scales ("Safety climate" and "Job satisfaction") was identified with the scale "Care versus treatment", indicating that individuals who have a more positive view of nurses' contribution to psychosocial and educational aspects of patient care, tend to have better perceptions of a strong organizational commitment to safety, as well as more positive views of their work experience.

**Key Words:** safety climate, intecollaboration, operating room covid 19.

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## PERFORMING DAY CASE SURGICAL PROCEDURES ADDITIONALLY TO THE STANDARD WORKING HOURS AND SERVICE OF GREEK NHS HOSPITALS: BENEFITS AND CHALLENGES

Michail Litos  
Konstantopouleion General Hospital  
Athens, Greece  
e-mail: [mlitos@hotmail.com](mailto:mlitos@hotmail.com)

Alexis Papazotos  
Konstantopouleion General Hospital  
Athens, Greece  
e-mail: [alexispapazotos@yahoo.com](mailto:alexispapazotos@yahoo.com)

Maria Papadaki  
Konstantopouleion General Hospital  
Athens, Greece  
e-mail: [mapadh@yahoo.gr](mailto:mapadh@yahoo.gr)

and

Konstantia Bakalianou  
Konstantopouleion General Hospital  
Athens, Greece  
e-mail: [dbakalianou@yahoo.gr](mailto:dbakalianou@yahoo.gr)

### ABSTRACT

The existing legal frame (N.2889/2001, N.3868/2010, KYA.Y4α/147881,2010) allows the Greek NHS hospitals to extend their working hours to perform day case surgical procedures. The fees charged are based on the Diagnosis Related Groups (DRGs) and are paid by the social security system or privately, according to the same system that applies during standard working hours. The remuneration for the non-medical staff is 8€/hour while the medical staff receive 150€/case (60% for the surgeon, 20% for the assistant surgeon and 20% for the anaesthetist). These provisions are yet to be applied and the issue is once again on the spotlight. We aim to study the benefits and challenges of applying the existing legislation and performing day case surgical procedures additionally to the standard NHS working hours and service.

We identified all the surgical procedures that can be performed as day cases according to the list of DRGs issued by the Greek Ministry of Health (KYA Y4α/οικ.18051) and calculated the income they generate for the NHS hospitals by subtracting the 150€ medical fees from the DRG charge.

The surgical procedures that can be performed as day cases, the relevant DRG charges and the income generated for the hospital are presented in table 1.



Table 1		
Day case surgical procedures, charges and income produced (according to the Diagnosis Related Groups (DRG) list of the Greek Ministry of Health)		
Diagnosis Related Group (DRG / KEN)	DRG Fee(€)	Income for the hospital (=DRG-150€)
<b>OPHTHALMOLOGY</b>		
Retina procedures	731	581
Ascorinostomia	700	550
Strabismus	450	300
Eye lid procedures	450	300
Cornua procedures	530	380
Tear duct procedures	305	155
Glaucoma procedures	531	381
Lense procedures (cataract etc)	466	316
<b>ENT &amp; DENTAL</b>		
Myringotomy	150	0
Tooth removal	350	200
Nose procedures	241	91
Teeth and mouth procedures	150	0
<b>THORACIC</b>		
Other lung procedures	621	471
Bronchoscopy	240	90
Pace maker replacement	2227	2077
<b>GASTRETEROLOGY</b>		
Gastroscopy	180	30
Colonoscopy	150	0
<b>ORTHOPAEDICS</b>		
Carpal tunnel syndrome	250	100
Removal of internal osteosynthesis materials	350	200
Arthroscopy	710	560
Hand procedures	707	557
<b>GENERAL SURGERY</b>		
Different procedures of skin, breasat etc	367	217
<b>UROLOGY</b>		
Lithotrepsy	482	332
Testicular procedures	300	150
Circumsision	400	250
Cystoscopy	217	67
<b>OBSTETRICS &amp; GYNAECOLOGY</b>		
Laparoscopic gynaecological procedures	603	453
Hysteroscopy and/or Dilation and Curretage	296	146
Termination of pregnancy	200	50

By extending their working hours, the NHS hospitals can increase their productivity and generate significant additional income making better use of the existing infrastructure. The additional procedures performed can significantly reduce the waiting lists and improve the accessibility to the health system. The cost per case for the social security system is no different and more patients can have access to services needed. The hospital staff can work overtime on a voluntary basis and create additional income for themselves. Overall, the NHS increases its capacity with no extra investment, the hospitals and their staff increase their income, and the patients have lower waiting times and better access to the health services.

Introducing innovations is always challenging. Adopting and implementing new operational procedures requires determination, strategic planning, and methodical materialization. For some hospitals that already run day surgery units it could be easy to extend their working hours while for the rest adaptation may be harder. The profit margin for the hospitals comparing the DRG charges to the resources consumed and the staff remuneration is an important issue even though NHS Hospitals are non-profit organizations. The statutory framework and the level of payment that would be enticing to the medical and non-medical staff is also a matter of debate and would have to be updated. Last but not least, political disputes or even politics between stakeholders can create obstacles difficult to overrun.

In conclusion, performing surgical procedures beyond the standard working hours of the operating theatres is feasible and advantageous and could be implemented with thorough consideration.

**Key Words:** Day surgery, surgical procedures, over time, private practice, national health system NHS.

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# EMPLOYING THE “TIME TRADE-OFF” METHOD IN ORTHOPAEDICS: COULD THIS BE THE SOLUTION-TO ISSUES ASSOCIATED WITH COST- EFFECTIVENESS AND WELL-BEING

Konstantinos A. Sidiropoulos  
“Mamatsio” General Hospital of Kozani  
Univerisity of Patras  
Thessaloniki, Greece  
e-mail: [kcdroq@yahoo.gr](mailto:kcdroq@yahoo.gr)

and

Ourania S. Gkouna  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [ouraniagouna@gmail.com](mailto:ouraniagouna@gmail.com)

## ABSTRACT

The Time trade-off (TTO) method or tool is a way of a determining technique, which identifies a patient's preference on theme as of therapeutic intervention (surgery, medication etc.) according to their health status (Lugnér and Krabbe, 2020). Participants are asked a hypothetical question: “Supposing you are going to live for another 10 years (Life expectancy) in your current health condition. How many of those years would you be willing to trade in exchange for perfect health?”

The TTO concept describes the percentage of a patient's life that he or she would be willing to trade to enjoy perfect health. The utility score is calculated from subtracting the TTO percentage from ‘1’. Thus, if a patient was willing to trade 30% of their life for perfect health, the utility score would be 0.7 (1-0.3). Utility scores therefore range in value from 0 (death) to 1 (perfect health) (Stewart 2019). So, the question is conventionally formed as such: “For an impaired state h. which is considered better than death (BTD), the respondent faces a series of choices between two hypothetical life scenarios: one involving x years of healthy life, followed by death (alternative 1); the other involving t years in h (where  $x \geq t$ ), followed by death (alternative 2). Time t is fixed, whereas time x is varied until the respondent's point of indifference is identified. If the respondent prefers alternative 2 to alternative 1, x is increased to make alternative 1 more attractive; if the respondent prefers alternative 1 to alternative 2, x is reduced to make alternative 1 less attractive. This iterative procedure continues until the respondent is unable to choose between the two alternatives. (Oppe et al, 2016)”. The application of TTO in orthopaedics is limited, as a systematic review and metanalysis that has been conducted, but not yet published, revealed.

However, important conclusions could be drawn regarding the extent to which it can affect common orthopaedic problems and conditions of the elderly, such as osteoarthritis, osteoporosis, fragility fractures and risk of fall (Salkeld et al, 2000; Ethgen et al, 2003; Gu et al, 2009) or even more common in younger population as flat foot deformities (Aldebayan et al. 2018). Under the perspective of a limited health budget and the high cost of orthopaedic implants and procedures, TTO could rationalize and justify surgical orthopaedic interventions not only in the case of the aging population but also of younger individuals with skeletal deformities. TTO, in combination with other indicators such as the Visual Analog Scale, Short-Form 36 and EQ-5D, seems to be providing detailed information on the health benefits involved while also taking into account the amount of reimbursement resources spent. In this hypothetical scenario patients prefer to reduce their own life expectancy if it means that they can achieve a better state of health.

This statement could be regarded as being the best proof of the real value quality of life has. This utility index seems to be able to bridge the gap between cost-effectiveness, the quality-of-life and prevention

strategies in welfare systems worldwide. Individual preference could prove to be a solid well-being value, in a format conforming to economic reasoning, in terms of opportunity cost.

**Key Words:** Time trade-off, health status, cost-effectiveness, well-being, welfare systems, orthopaedics.

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## POLICIES AND ETHICS IN HEALTH CARE

### ETHICAL DILEMMAS IN HEALTH CARE: ADOPTING A FOUR – PILLAR APPROACH OF MEDICAL ETHICS.

Anastasia Sofia Alexiadou  
PhD, LLM, MA Phil, M.Ed.  
Lecturer in Ethics-University of Macedonia  
Thessaloniki, Greece  
Research Fellow, Research Center of Biopolitics  
Panteion University-Social and Political Sciences  
Athens, Greece  
e-mail: [as.alexiadou@gmail.com](mailto:as.alexiadou@gmail.com)

#### ABSTRACT

Generally, ethical discourse involves the quest for justification of human action and conduct. Therefore, in healthcare settings medical ethics constitutes an indispensable guide for health care actors in order to take crucial and, sometimes, hard decisions concerning patient care as well as to take seriously patients' desires and best interests (Mason and Laurie, 2006). In fact, the ultimate question for medical ethics or for ethics in general, is: what renders human life valuable? Although, *prima facie*, it seems merely a rhetorical question, in medical practice such a question needs to be addressed (Beauchamp and Childress, 2001; Harris, 1985). Thus, an "ethical dilemma" appears in every set of circumstances, where there are two or perhaps more courses of conduct that need to be justified with potentially opposed outcomes. Notably, in the contemporary medical ethics there is a plethora of philosophical theories interweaving one another, whose purpose is to help individuals decide what is morally right or wrong. However, two strands of philosophical thought, the Deontological with Immanuel Kant and the Utilitarian with Jeremy Bentham and John Stuart Mill, are particularly prevalent (Mason and Laurie, 2006).

In addressing these issues the debate raises significant questions. How do we know what is the "right" thing to do? Thus, Beauchamp and Childress (2001) hold that both the ethical dilemmas as well as the ethically appropriate conduct could be resolved and determined by the application of the four – pillar approach of medical ethics, namely (i) the pillar of respect for patient autonomy, patients must be treated as independent moral agents exercising freely the right to consent and to decision –making about their lives; (ii) the pillar of beneficence, healthcare professionals should strive for the patient's good; (iii) the pillar of non – maleficence, one should avoid doing harm to other people. Of note, this principle has a long history of being most indispensable to health care contexts. In fact, in the Hippocratic Oath where a number of physician guidelines are laid down, the principle of primary importance as well as of ethical teaching constitute the principle of non – maleficence -"primum non nocere"- "above all do no harm"; (iv) the pillar of justice, individuals should be treated fairly in terms of health equality and health equity among the patients. In addition, the pillar of justice also refers to fairness within medicine and equal distribution of resources (Beauchamp and Childress, 2001; Harris, 1985; Mason and Laurie, 2006; Page, 2012).

In view of the above, by drawing on existing research and evidence, the present paper seeks to examine a vital debate regarding the adoption of the four – pillar approach of medical ethics when addressing ethical dilemmas in health care. Although this four – pillar approach of medical ethics is by no means utterly accepted as the "lingua franca" of ethics (Mason and Laurie, 2006; Savulescu, 2003), however it does serve as a pivotal example of how ethical discourse claims for reflection and justification of our actions by reference to universally established values and mores (Gillon, 2003; Mason and Laurie, 2006).

**Key Words:** Ethical dilemma, Four – pillar approach, Health Care, Medical Ethics.

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# POSITIVE YOUTH DEVELOPMENTAL ASSETTS AND 5 C-S ON ROMA AND EGYPTIAN MINORITY ADOLESCENTS IN ALBANIA DURING COVID-19

Eglantina Dervishi

Department of Psychology and Pedagogy, Faculty of Social Sciences, University of Tirana

Tirana, Albania

e-mail: [egladervishi@gmail.com](mailto:egladervishi@gmail.com)

Silva Ibrahimi

Department of Psychology, Albanian University

Tirana, Albania

e-mail: [ibrahimi.silva@gmail.com](mailto:ibrahimi.silva@gmail.com)

Diana Miconi

Department of Educational Psychology, Université de Montréal

Montréal, Canada

e-mail: [diana.miconi@umontreal.ca](mailto:diana.miconi@umontreal.ca)

and

Nora Wiium

Faculty of Psychology, University of Bergen, Norway

Bergen, Norway

e-mail: [nora.wiium@uib.no](mailto:nora.wiium@uib.no)

## ABSTRACT

The benefits of Positive Youth Development assets for the 5C-s (Competence, Confidence, Character, Caring, and Connection) have gained significance among researchers around the world (Fernandes et al., 2021; Ferrer-Wreder et al., 2021; Kozina et al., 2021). However less is known about the benefits of the 5C-s on Internal and External assets and on the general well – being of the adolescents. This paper aim to explore the associations between Internal and External assets and the 5 C-s of PYD. The paper utilizes data collected from a representative sample of 14-20 years old adolescents in Albania after the first waves of Pandemic COVID-19. Positive youth development assets are measured using The Developmental Assets Profile (DAP) and the short form of PYD questionnaire was used to measure the 5C-s. The distribution and descriptive analysis statistics were obtained using the Statistical Package for Social Sciences SPSS 22. Pearson's Correlation coefficients were used to explore the association between internal and external assets of DAP and 5 C-s, t-test, one-way ANOVA were used to explore the differences between groups for PYD assets and 5C-s. A multi regression was performed to determine how much variance could be explained by each variable. In total 201 adolescents for Roma and Egyptian minorities were included in those analyses. Lower scores on PYD and 5C-s are present in both groups. Higher level of 5C-s was associated with higher scores on the two of the 5C-s of PYD especially character and caring. Analyses revealed that minority groups differed in some internal and external assets and in the some of the 5C-s of PYD. Adolescents from Egyptian minority seems to have higher level for internal and external assets for support, Expectations and boundaries and Commitment to learning, compared to Roma minority. Regarding the 5C-s, boy adolescents reported having highest confidence and competence and girl adolescents are more caring. Finding imply that there are strong links between External and Internal Assets and 5C-s of PYD especially Connection (5C-s) with Support, Expectations and boundaries, and Commitment to learning, also for Competence (5C-s) and Support, Empowerment, Expectations and boundaries, and Commitment to learning. To our knowledge, this is the first study focused on Roma and Egyptian minority adolescents on 5 C-s of PYD and Internal and External Assets. This study highlights the need to encourage adolescents to participate actively in vary ways on their positive development during and in the aftermath of the COVID-19. The more assets that Roma and Egyptian adolescents have, the more likely they will make healthy lifestyle choices, regardless age, race, gender, or geographic origins.

**Key Words:** Adolescents, minority, internal assets, external assets, the 5C-s, positive developmental assets.

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## HUMAN RIGHTS AND HEALTH WORKFORCE EDUCATION: TOWARDS STRENGTHENING HEALTH SYSTEM GOVERNANCE

Dr. Elisavet Athanasia Alexiadou, LL.M., LL.M., M.Sc.

AUTH/Faculty of Law\*

Thessaloniki, Greece

e-mail: [ea.alexiadou@gmail.com](mailto:ea.alexiadou@gmail.com)

### ABSTRACT

Admittedly, the COVID-19 pandemic revealed not only the considerable risks to the life and health of individuals posed by communicable disease outbreaks, but also the pivotal role of the health workforce in responding to such outbreaks (WHO, 2020). In its Global Strategy on Human Resources for Health: Workforce 2030, the World Health Organization explicitly underscored the instrumental role of health workforce in building resilient health systems, in enhancing health service coverage and ultimately in realizing the right to health for all (WHO, 2016). However, in health and human rights discourse, it is argued that despite the values and ethical commitments of the medical profession, health workforce education (involving medical education and mid-level training) does not sufficiently address human rights issues, the corrupting influence of industry interests on medicine and/or the adverse impacts of discrimination and stigmatization on patient care, especially in relation to groups in vulnerable situations, by means, for instance, of standardized curricula (UN General Assembly, 2019; Gostin et al, 2020). Thereto, there is a need for a paradigm shift and it is incumbent upon States to ensure that health workforce education integrates all the components of a human rights approach within the context of standardized authoritative educational resources and eliminates potential bias in knowledge (Ibid). Human rights education must become central to the health curriculum and training of health workforce towards strengthening health system governance. Schools of medicine and those who train health care workers should ground health training curricula in a right to health framework and provide systematic programmes for continuous professional development of health workforce (UN General Assembly, 2019).

Hence, drawing on existing evidence the purpose of this paper is to examine the value of applying a human rights approach to health workforce education towards strengthening health system governance. Without any doubt, it must be conceded that empowering health workforce with rights-based competencies and skills not only prevents human rights violations in patient care, but also it promotes and protects health workers rights by: (i) minimizing power asymmetries within the health workforce; (ii) preventing health sector corruption; (iii) contributing to decent working conditions and a climate of mutual trust and respect within and beyond health systems and (iv) rendering health systems more participatory, transparent, accountable, inclusive and non-discriminatory (UN General Assembly, 2019). The paper is based on a systematic legal analysis of human rights documents and literature research. The applied interpretation is in accordance with the treaty interpretation rules as enshrined in the Vienna Convention on the Law of Treaties (Articles 31-32 VCLT). This paper aims at bringing existing theory into practical use and positively affecting law, policies and practices in the field of health workforce education. The findings of this paper can be used to provide insights for the future development and/ or advancement of national health workforce education plans in a participatory way, with representation from key stakeholders, involving health workers, civil society and users of health services.

**Key Words:** Accountability, Governance, Education, Health Workforce, Human Rights, Patient Care.

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## INDUSTRY 4.0: IMPLICATIONS FOR HEALTHCARE

Majda Kocić  
University of Ljubljana, Slovenia  
School of Economics and Business  
e-mail: [kocimajda@gmail.com](mailto:kocimajda@gmail.com)

Sanja Kocić  
University of Kragujevac, Serbia, Faculty of Medical Sciences  
Department of Social medicine  
Institute of Public Health Kragujevac  
Department of Social medicine  
Kragujevac, Serbia  
e-mail: [kocicsanja@yahoo.com](mailto:kocicsanja@yahoo.com)

Nikola Savić  
Medical school "Dr Miša Pantić", Valjevo, Serbia  
Singidunum University  
Faculty of Health and Business Studies  
Valjevo, Serbia  
e-mail: [nikolasavicvzs@gmail.com](mailto:nikolasavicvzs@gmail.com)

Nebojša Ranković  
Institute of Public Health Kragujevac  
Department of Hygiene and ecology  
Kragujevac, Serbia  
e-mail: [n\\_rankovic@yahoo.com](mailto:n_rankovic@yahoo.com)

Ana Miljanović  
Institute of Public Health Kragujevac  
Department of Epidemiology  
Kragujevac, Serbia  
e-mail: [veljkan@yahoo.com](mailto:veljkan@yahoo.com)

and

Marija Karajović  
Institute of Public Health Kragujevac, Quality department  
Kragujevac, Serbia  
e-mail: [marija\\_karajovic@yahoo.com](mailto:marija_karajovic@yahoo.com)

### ABSTRACT

Currently, the world is witnessing a tremendous transformation as a result of Industry 4.0. This trend is expected to have a profound impact on all areas of economic life, including healthcare. A survey conducted by McKinsey (2020) indicates that the Covid-19 pandemic has largely accelerated the digital transformation activities of companies in all sectors. The digitalization of products and interactions has been sped up for several years. Because of the dynamics and radicality of these changes, countries, and organizations that fail to transform will be left behind with severe consequences. It is beyond any doubt that technology is no more just a means to optimize processes and reduce costs, but a source of competitive advantage of the utmost strategic importance.

The aging population, expectations of constantly improving treatment methods and the recent pandemic crisis have all put healthcare in the spotlight. To overcome these challenges and avoid the uncertainty of the future, countries need to exploit and invest in processes such as the Internet of Things, Cloud and Fog Computing, and Big Data Analytics (Aceto et al,2020). For instance, through the Internet of Things, physicians can automatically access the values of certain health parameters measured by sensor-equipped smart devices worn by patients. This is especially valuable for patients in

rural developing areas who do not have access to healthcare institutions. Also, the availability of data regarding different health variables contributes to the more holistic approach to treatment which leads to better health care outcomes for the population. Hence, the existing systems of diagnosis-related groups could be modified to a more personalized approach where each patient would be approached uniquely because of all the valuable data available (Aceto et al, 2020). Chronic patients can benefit from this, because they can also get health instructions from these intelligent devices, thus avoiding going to the doctor that often. The data is processed through Cloud Computing in real-time which increases efficiency, reduces costs, and improves the quality of services. Big Data provides the possibility of creating information-rich electronic health records and can enable extraordinary advancements in preventive medicine which can largely diminish the cost of illnesses (Razzak et al, 2019).

All these developments require innovative management as well as strong government involvement to create an enabling environment for the organizations to implement the changes. Another challenge that is of high importance are the ethical concerns related to the vast amounts of patient data that is now accessible to different institutions and stakeholders. Policymakers need to be aware of potential problems and implement proper security systems because data is becoming the ultimate source of competitive advantage and growth in the 21st century.

Finally, the introduction of smart hospitals that are grounded on the pillars of Industry 4.0 is a necessary step for all societies. However, that brings new challenges regarding staffing, training, and managing employees. Educational institutions need to be updated in accordance with the skills and knowledge that health workers will need in the future. That is why the governments must establish ecosystems based on knowledge sharing, together with proper infrastructure and funding to enable the interconnectedness and coordination of all links of society (Schwab, 2016). The necessary investments to only keep track of this global transformation are vast, however, in the long run, they will produce unimaginable benefits and savings.

**Key Words:** Industry 4.0, Internet of Things, cloud computing, Big Data, Digital Transformation, healthcare.

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# DIGITAL TECHNOLOGIES IN HEALTH CARE MANAGEMENT

## DIGITAL TECHNOLOGIES IN EDUCATION AND TRAINING OF HEALTHCARE PROFESSIONALS IN CLINICAL GOVERNANCE

Kleanthis A. Konstantinidis  
KAT General Hospital of Attica  
Athens, Greece  
e-mail: [konstantinidiskleanthis@gmail.com](mailto:konstantinidiskleanthis@gmail.com)

and

Ioannis A. Apostolakis  
School of Medicine, National & Kapodistrian University  
Athens, Greece  
e-mail: [ioannis.a61@gmail.com](mailto:ioannis.a61@gmail.com)

### ABSTRACT

Clinical governance is defined as the framework through which healthcare organizations are accountable for continuously improving the quality of their services and safeguarding high quality of patient care, by creating an environment in which excellence in clinical care will flourish (UK Department of Health, 1997). Clinical governance encompasses seven concepts, which are the pillars of clinical audit, staff management, risk management, use of information and information technology, clinical effectiveness, education and patient involvement (Macfarlane, 2019). Quality in healthcare and patient safety are growing concerns for health and social care services globally, as several patients are daily harmed due to human errors or critical incidents. Australia, New Zealand and United Kingdom which are pioneers in healthcare quality and patient safety culture, have deployed high-level frameworks to address these concerns and push their healthcare providers towards the direction of excellence in patient care. Other countries have already taken actions towards this direction, like Canada, Holland and Ireland. Greece lags this culture, with clinical governance be currently subject of postgraduate and lifelong learning programs and without a clear framework for Greek NHS. However, efforts have begun in this direction with the establishment of the Health Quality Assurance Agency, which is supervised from the Greek Ministry of Health (Ministry of Health, 2021).

The first educational intervention of the newly established Health Quality Assurance Agency carried out last October and the program was targeted to the managers of the hospitals (Iatronet, 2021). As the clinical governance encompasses the concepts of staff management and education, it is mandatory all levels of clinical staff in healthcare hierarchy to be involved in future educational interventions. Educational initiatives should be orientated to an engaged, effective workforce that works together with the patients and participates in an ongoing process of self and peer review. Such initiatives are continuing professional development to maintain skills and competence, interdisciplinary collaboration and communication workshops, training in patient safety, risk management and quality improvement through clinical audit, management of information and information systems according to data protection regulations.

To create a national educational framework for clinical governance, it is also mandatory to bring together healthcare professionals from all around the country without the need of traveling. Information and Communication Technologies can be utilized to support on-demand training through Internet and remote collaboration among healthcare professionals in a national level. Also, due to COVID-19 restrictions for social gatherings, digital technologies and web 2.0 tools have already facilitated the dissemination of critical information, remote collaboration and sharing of new strategies among healthcare professionals during the pandemic. These available technologies can be combined in a

framework of on-demand educational activities, towards the direction of a shared language for patient safety, risk management, quality assurance and improvement among healthcare professionals.

**Key Words:** clinical governance, digital technologies, safety, quality, education, healthcare professionals.

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# THE USE OF DIGITAL HEALTH AS A PRIORITY OF STRATEGIC HEALTH MANAGEMENT IN THE POST-COVID ERA

Sofia Voutsidou  
Central Services, 4<sup>th</sup> Regional Health Authority Macedonia and Thrace  
Thessaloniki, Greece  
e-mail: [svoutsidou@gmail.com](mailto:svoutsidou@gmail.com)

## ABSTRACT

Modern health systems are increasingly experiencing the effects of ongoing economic, humanitarian and health crises, such as the recent COVID-19 pandemic (ECDC, 2020; WHO, 2020). In order to face these challenges, they need to change their priorities and to transform their strategic health management (Begun and Jiang, 2020). Thus, there is a need for the adjustment of care and the utilization of digital health tools, in order to achieve decongestion of hospitals and reduction of medical expenditure (Begun and Jiang, 2004; Prasad, 2020). The aim of this presentation is to highlight the role that Digital Health is called to play in the post-COVID era, as a key parameter of the new strategic management of healthcare systems.

A systematic review of the Greek and international literature related to the subject was carried out. For the needs of the research, the relevant decisions of the European Commission and the European Parliament were studied together with the reports of international organizations, such as WHO and ECDC. In addition, electronic libraries and valid databases were utilized, like PubMed, Google Scholar, Medline, Cochrane Library και Embase.

The role of information and communication technology is extremely important in the context of modern health management. Digital Health refers to a wide range of products, systems and tools, which build their operation around the advanced ICT (WHO, 2016; European Commission, 2015). Digital Health is a broad concept and encompasses Electronic Health (eHealth), Mobile Health (mHealth), sources and types of “big data” as well as new technologies (Fahy and Williams, 2021). Digital health applications like the electronic health record, the electronic prescription, telemedicine or mHealth, are addressed both to health professionals and patients-users adopting a philosophy of an holistic approach, as they handle the prevention, diagnosis, treatment and later monitoring (Callens and Cierkens, 2008; Kluge, 2011).

The implementation of Digital Health is not a recent issue. Globally, it is delimited by the eHealth resolution of the 58th World Health Assembly (WHO, 2005) in conjunction with the eHealth standardization and interoperability report (WHO, 2013). The promotion of Digital Health is also a key component for the European Union, in the context of setting the goals for Europe 2020 (European Commission, 2012; European Commission, 2016). However, the explosion of COVID-19 led to a widespread use of Digital Health. During the pandemic, using digital health tools became an immediate necessity (Fahy and Williams, 2021). The European Observatory on Health Systems and Policies, in cooperation with the WHO Regional Office for Europe, focuses on the use of digital health tools during the pandemic in four principal areas: (1) communications, for example to combat misinformation, (2) monitoring and surveillance (e.g. through the use of contact-tracing apps or genomic surveillance), (3) supporting provision of health services, in particular with remote medical consultations or surge planning tools, and (4) facilitating the initiation of vaccination programs and the monitoring of vaccine adverse reactions. Furthermore, in many European countries Digital Health was utilized to support certification of immune status or recovery (Fahy and Williams, 2021).

At European level, the “EU4Health” program is one of the most important European Union’s responses to the recent pandemic, aiming to assist in the transformation of NHS. It’s the largest health program, with a total budget of 5.1 billion Euros, which is adopted for the years 2021-2027. The basic keys for achieving this program are to focus on prevention through Public Health and Primary Health Care and at the same time to use the benefits provided by Digital Health (Giannoudi and Voutsidou, 2021).

In Greece, the program “Next Generation EU-Greece 2.0” for Health, sets four strategic goals regarding the implementation of Digital Health. The first goal involves the creation of a digital patient



record and the achievement of interoperability between health structures. The second goal envisages the creation of a national cancer registry, in order to enable the collection and organization of data. The third goal is related to the modernization of medical records, in combination with the parallel modernization of hospital infrastructure and local networks. Finally, the fourth goal emphasizes the importance of further developing telemedicine within the appropriate institutional framework (Greek Ministry of Health, 2021).

In combination with organizational, financial and legislative changes, appropriate medical equipment and trained staff, Digital Health is expected to be a key axis for strategic management on healthcare systems in the post-COVID era. In this context, human-centered orientation, its ethical use, and the resolution of digital inequalities are required, as well as the active participation of all stakeholders (medical staff, service providers, patient associations, government officials and hospital managers).

**Key Words:** COVID-19, Digital Health, Strategic Health Management, post-COVID era.

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# HOW THE ELECTRONIC ORDER OF LABORATORY EXAMS REDUCES THE COST IN HEALTH UNITS. CASE STUDY PAPAGEORGIOU GENERAL HOSPITAL

Athina Gerolymatou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [athina7.11@gmail.com](mailto:athina7.11@gmail.com)

and

Stergiani Spyrou  
International Hellenic University  
3<sup>rd</sup> Regional Health Authority  
Thessaloniki, Greece  
e-mail: [ssspyrou@gmail.com](mailto:ssspyrou@gmail.com)

## ABSTRACT

Health care digital reformation is driven by controlling the cost of health care services along with improving their level of transparency and efficiency, and ultimately improving the quality of provided services. For this reason, the systems of diagnostic related groups (DRGs) were created to achieve the above objectives, which in Greece appeared in the form of Fixed Categorised Hospitalisation Costs (F.C.H.C.). In the context of the present study, an attempt was made to investigate the application of the electronic order of laboratory exams at the Papageorgiou General Hospital, as a means of reducing operating costs. The study period was from 2012 to 2016 and 2020. In the first period the “e- order for laboratory exams” software for was first used in 2014, which followed the introduction period of F.C.H.C. in hospitals while year 2020 is under examination as it is the year in which the global health crisis due to the new coronavirus had manifested. Data were collected regarding the cost of lab exams, the number of patients and the number of examinations to evaluate the effectiveness of the (online) electronic order of laboratory exams from this hospital. It is necessary to note that in the case of the laboratory exams used, all were included in the F.C.H.C., hence the connection of the literature with the subject of this study. The results of this study demonstrate that the introduction of F.C.H.C since 2012 as well as the introduction of the e- order software since 2014 led to the reduction of the cost of laboratory exams by 15%.

In addition, a quantitative, primary study was conducted which examined the attitude of the health professionals of Papageorgiou General Hospital towards the electronic order of the laboratory exams. The results of this study confirmed those of the international literature regarding the efficiency of F.C.H.C. in terms of holding the operating costs of hospitals, while the implementation of the electronic order of laboratory exams also contribute to this. Finally, we should not overlook the fact that health professionals had a positive attitude towards this application who expressed their high level of satisfaction but also the benefits in terms of ordering exams and collecting results.

**Key Words:** DRGs (Diagnostic Related Groups), Laboratory Information Systems, Online Order, Health Information Systems, DRGs (Diagnosis Related Groups).

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## NURSES' IT SECURITY PRACTICES: A SURVEY CONDUCTED IN GREEK HOSPITALS

Andriana Magdalinou  
National and Kapodistrian University of Athens  
Athens, Greece  
e-mail: [alfami@nurs.uoa](mailto:alfami@nurs.uoa)

Flora Malamateniou  
University of Piraeus  
Athens, Greece  
e-mail: [Flora@unipi.gr](mailto:Flora@unipi.gr)

Athena Kalokairinou  
National and Kapodistrian University of Athens  
Athens, Greece  
[athkal@nurs.uoa.gr](mailto:athkal@nurs.uoa.gr)

and

John Mantas  
National and Kapodistrian University of Athens  
Athens, Greece  
e-mail: [jmantas@nurs.uoa](mailto:jmantas@nurs.uoa)

### ABSTRACT

The evolution of technology and in particular the development of robust software devoted to mitigate IT security breaches are not adequate solutions to prevent data being compromised as human factors may increase systems vulnerability and cause privacy related issues. Non secure practices followed by employees may result in healthcare data breaches leading to financial losses and reputation damages to organizations as well as stigma to patients (Gaunt, N. 2000),(Albrechtsen, E. 2007)

The most common non secure IT practices are accessing dangerous email (Silvius, A.J. et al. 2012), (Alqahtani, F.H. 2017), using unknown usb (Guo, K.H et al. 2012) exchanging passwords (Hedström, K. et al. 2013), not changing password, unattended active accounts Connolly, L. et al. 2015), lack of security breaches reporting (Kirlappos, I. 2016), and allowing others to access computers (Hovav, A. et al. 2012). Knowledge of and staff attitude towards IT security policies, the perception of danger, training, and strict IT security policies can affect employees IT security practices (Topa, I. et al. 2015).

This paper presents a survey conducted in order to assess nurses' IT security practices in Greek Hospitals using HAIS-Q tool. Researchers (Pattinson, M. et al. 2015) consented to the use of the tool.

HAIS-Q consists of 45 Items in a Likert scale (1-5) related to Information management, Password Management, Email usage, Internet usage, and Incidence reporting. Three Hypotheses were formed:

H1: Better attitude towards IT security policies is linked to less non secure practices.

H2: Better knowledge of IT security policies is linked to less non secure practices.

H3: Better knowledge of IT security policies is linked to better attitude towards IT security policies.

The sample was 285 registered nurses. SPSS software was applied to analyze the data using ANOVA and multiple regression analysis. Anonymity and informed consent was achieved. Consent by seven Hospital Boards was given according to regulations.

The majority of respondents (82.5%) were women with half of the respondents aged 40 and over and working in the same organization for more than 11 years. 52.6% received a formal announcement of IT security policies in their organization and 53.3% searched for related information elsewhere. Nurses had good knowledge of policies related to password management and email policies but neutral on internet usage policies, information management and printing as well as reporting security breaches. Nurses showed a good attitude towards the management of passwords and e-mail, a neutral to good attitude in the management of information and printing, while a neutral attitude in the use of the

internet and the reporting of security breaches. Finally, nurses seem to follow neutral practices in the use of the internet and the management of information and prints while neutral to good practices follow in the management of codes and e-mail. Their practices regarding the reporting of violations of IT security are divided between good and bad. Regarding the overall awareness of nurses on IT security, nurses remain neutral in most categories with the exception of managing passwords where they remain positive. The attitude of the nursing staff in the policies for it security is strongly and positively related to the knowledge in these policies (Table 1)

**Table 1**  
**ANOVA and Multiple Regression Analysis: Correlation between Security Practices and Knowledge of policies and Security Practices and Attitude towards Security policies**

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	,832 <sup>a</sup>	,692	,690	,27101	,692	316,688	2	282	<,001

a. Predictors: (Constant), STASI, GNWSI

ANOVA <sup>a</sup>					
Model		Sum of Squares	df	Mean Square	F
1	Regression	46,520	2	23,260	316,688
	Residual	20,712	282	,073	
	Total	67,232	284		

a. Dependent Variable: PRAKTIKES

b. Predictors: (Constant), STASI, GNWSI

Coefficients <sup>a</sup>								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	,383	,089		4,294	<,001	,207	,558
	GNWSI	,348	,050	,367	6,954	<,001	,249	,446
	STASI	,489	,050	,513	9,724	<,001	,390	,588

a. Dependent Variable: PRAKTIKES

Correlations			
		STASI	GNWSI
Pearson Correlation	STASI	1,000	,780
	GNWSI	,780	1,000
Sig. (1-tailed)	STASI	.	<,001
	GNWSI	,000	.
N	STASI	285	285
	GNWSI	285	285

and the practices that nurses follow are strongly and positively related to both the knowledge and their attitude in these policies as per Table 2.

**Table 2**  
**ANOVA and Multiple Regression Analysis: Correlation between Security Practices and Knowledge of policies and Security Practices and Attitude towards Security policies**

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
1	,780 <sup>a</sup>	,608	,606	,32024	,608	438,671	1	283	<,001

a. Predictors: (Constant), GNWSI

ANOVA <sup>a</sup>					
Model		Sum of Squares	df	Mean Square	F
1	Regression	44,987	1	44,987	438,671
	Residual	29,023	283	,103	
	Total	74,010	284		

a. Dependent Variable: STASI

b. Predictors: (Constant), GNWSI

Coefficients <sup>a</sup>							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	,477	,101	4,700	<,001	,277	,676
	GNWSI	,775	,037	20,944	<,001	,703	,848

a. Dependent Variable: STASI

### Regression

Descriptive Statistics			
	Mean	Std. Deviation	N
PRAKTIKES	2,5722	,48655	285
GNWSI	2,6901	,51325	285
STASI	2,5626	,51049	285

Correlations				
		PRAKTIKES	GNWSI	STASI
Pearson Correlation	PRAKTIKES	1,000	,767	,799
	GNWSI	,767	1,000	,780
	STASI	,799	,780	1,000
Sig. (1-tailed)	PRAKTIKES	.	<,001	<,001
	GNWSI	,000	.	,000
	STASI	,000	,000	.
N	PRAKTIKES	285	285	285
	GNWSI	285	285	285
	STASI	285	285	285

The overall IT security awareness of nurses range from neutral to positive. However, areas such as knowledge of and attitudes towards policies related to internet use, information management and reporting of security breaches as well as practices in these areas could be improved.

This work presented nurse's knowledge and attitudes towards IT security, related practices and total awareness and correlations were established. Commitment of management in IT security, positive

organizational culture and the development of engaging training could improve the areas under research.

**Key Words:** Nursing, Information security, Practices.

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## THE DIGITAL MARKETING AND ITS IMPACT IN SPECIAL TREATMENT CENTERS IN THESSALONIKI

Dimitra A. Anastasiadou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [anastasiadoudimi@gmail.com](mailto:anastasiadoudimi@gmail.com)

Greta Hoxha  
Msc in Health & Welfare  
Management Units  
International University of Greece  
Thessaloniki, Greece  
e-mail: [iwannachotza@gmail.com](mailto:iwannachotza@gmail.com)

Georgios Tsekouropoulos,  
Assistant Professor  
International Hellenic University  
Department of Organization  
Management, Marketing & Tourism  
Thessaloniki, Greece  
e-mail: [geotsek@bua.teithe.gr](mailto:geotsek@bua.teithe.gr)

and

Theodoros Kargidis  
Professor  
International Hellenic University  
Department of Organization  
Management, Marketing & Tourism  
Thessaloniki, Greece  
e-mail: [kargidis@ihu.gr](mailto:kargidis@ihu.gr)

### ABSTRACT

In the age of digital communication, and with the emergence of personalised forms of medicine, there is an rising opportunity for customized, highly responsive campaigns in primary care involving health promotion and lifestyle modification of individuals. The research deals with the application of digital Marketing in special treatment centers in Thessaloniki. Initially, it refers to health services marketing , which mentions its advantages and disadvantages, tools for the development of health services marketing, while a separate reference is made to Social Media Health Services Marketing and the use of social media among healthcare providers (Syed et al.,2021). In 1980 published the first article in health marketing, which is considered the fastest developed industry services in the whole world (Kotler et al., 2016). The field of health can use marketing techniques such as audience research, product analysis, message design, distribution, "advertising", evaluation and feedback considering the interests, values and goals of the consumers making the consumers' needs a priority (Radu et al, 2017). Micro, small and medium-sized enterprises can use these techniques to modernize and acquire the tools they need to gain a foothold in the marketplace and successfully locate their customers online (Nosrati et al., 2013). Nowadays Social Media provide a huge market for the evolution of health with million of customers depend on internet (3,6-5,6% of the customers search about health treatment via Google) (Lupton, 2014). Moreover they can be used for the transmission of a huge amount of information about health and from the health providers and public health institutes for the education. Specifically Social Media give a unique opportunity to link the communication gaps between the audience and the authorities. Furthermore, Social Marketing can use all the feedback of users and adjust information to suit the target audience (Copley, 2004). So digital commercials which are showed in Social Media aim to specific audience. It's remarkable that due to Pew Research Center (2017) 70% of Americans use generally Social Media in order to connect with one another and specifically more than 40% of consumers of health treatment use Social Media to get information about health, while 40% choose

Social Media to decide the provider of medical care. The 90% of target group in age 18-24 use and believe information about therapies, which represents in Social Media. In fact a recent review study found that health data from social sources has improved disease prediction. Even the 26% of hospitals of USA present their services via Social Media (Chretien & Kind, 2013). Subsequently, a primary quantitative research is carried out in order to study how digital Marketing can be applied in centers providing special therapies (speech therapy, occupational therapy, psychological support, special education) and whether it contributes to the positive image of the industry. The results of the research show that in general , digital Marketing is used in centers providing special treatments in Thessaloniki. The majority of the representatives of the centers for the promotion of their services on the internet , use both the Website of the center and pages on social media, while recognize the multiple benefits of digital display of the treatment center. In the end it emerged that the centers of special treatments in Thessaloniki can obtain information about the wishes and needs of their customers, through digital Marketing.

**Key Words:** Digital Marketing, specialist treatment centers, promotion, benefits.

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## LEADERSHIP 4.0: LEADERSHIP IN THE AGE OF DIGITAL TRANSITION

Anastasia Vasileiou  
International Hellenic University / Papageorgiou Hospital  
Thessaloniki, Greece  
e-mail: [anastasia74gr@hotmail.com](mailto:anastasia74gr@hotmail.com)

Euthymia Theodoridou  
International Hellenic University / Papageorgiou Hospital  
Thessaloniki, Greece  
e-mail: [efitheodorid@gmail.com](mailto:efitheodorid@gmail.com)

and

Apostolos Fardis  
International Hellenic University / Agios Pavlos Hospital  
Thessaloniki, Greece  
e-mail: [fardisapo@gmail.com](mailto:fardisapo@gmail.com)

### ABSTRACT

The year 2020 was an unplanned milestone in the progress of the digital transformation. Because of the social distance required by Covid-19, many employees are teleworking and leveraging new technologies, even in hospital administration sector. At the same time, companies and organizations were given the opportunity to adapt business models to the requirements of the new era.

In this context, digitization places new demands on the way we manage basic social functions and processes, mainly because 2020 changed the global economy and the world of work, imposing the digital transformation once and for all. The digital upheaval caused by the technologies of the 4th Industrial Revolution also poses new challenges for leadership with a significant impact on all sectors of the working world as it drastically influences the strategies, structures and processes of organizations.

Therefore, the study of leadership is vital for the progress of digital transformation in all sectors and especially in Health as digitization contributes to tackling crises such as the Covid-19.

Brief Historical Review (Sikora 2017)

- "Computerization" (1960s).
- "Introduction to EDP (Electronic Data Processing)" (1970s).
- "Personal Computing" (1980s).
- "Internet Computing" (1990s).
- "Digitalization" (2010).

### Implications, challenges and prospects for leadership in the era of the 4th Industrial Revolution

The 4th Industrial Revolution, known as "Industry 4.0", and the underlying digital transformation, is a topic of cutting-edge research in various industries. Through the systematic study of cases of global scope and in particular a research model of the Technical University of Munich, a series of changes related to the new developments in the era of digitization came to the fore, such as:

1. Changes in the ways of influence of the executives
2. Increased importance of behaviors that promote relationships
3. Increased skills for managers
4. Performance and performance-oriented evaluation of results
5. Increased management of employee health and well-being
6. Increasing leadership technology
7. Increasing pressure on executives
8. Increased continuing education of employees

Do we need new approaches to leadership in the age of digitalization?

This challenge is taking place in the context of disorganizing social and economic change. There is a strong innovative force and rapid change, but also through the promotion of globalization and demographic growth (Laloux 2014, Kolbjornrud et al. 2016). In this context, we often refer to a VUCA environment (from the words Volatility, Uncertainty, Complexity, Ambiguity) (Mack & Khare 2016).

Due to the above new data and changes in the digital age, it is clear that there is a need for new approaches to leadership. For this reason, organizations have placed great emphasis on digital transformation in order to keep up with these changes. After all, digital transformation can be disorienting, leading businesses to dangerous paths. However, if leaders are confident about the changes and how they will benefit everyone, adapting becomes easy.

In addition to the general working conditions in a digital world, people's demands on work are also changing. In each case, they have seized it, despite obstacles we can scarcely imagine. " (Pathak 2021).

The research of Schwarzmüller et al. (2016) showed that transformational leadership builds trust. In particular, this leadership model is based on incentive structures, promises effective adaptation to the requirements of the VUCA environment, and focuses on trusting collaboration between employees and managers.

Continuous change is the new normal in today's age of constant change. Thus, transformational leadership, which is based on incentive structures, promises to effectively adapt to the requirements of the VUCA environment and focuses on trusting cooperation between employees and managers. To date, it is considered the most popular leadership model, which can contribute to the digital transformation of an organization (Wang & Zheng 2018, Antonopoulou, 2021).

The central question to which the concept of transformational leadership provides answers is: How can a manager convey inspirational goals in a work environment characterized by complexity and uncertainty and gain the trust of his employees in order to motivate them to achieve top performance beyond their own imagination?

To this end, transformation managers set demanding goals, empower their team members, and address individual needs and personal development opportunities. Plus, the qualities of Digital Transformational Leadership are the following (Winkler et al. 2020):

1. Individualized consideration
2. Inspirational motivation
3. Idealized influence
4. Intellectual stimulation
5. Comprehensive support.

**Key Words:** Leadership 4.0., Digital Transformation, Digital Leadership, Digital Transformational Leadership.

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# ALTERNATIVE ASPECTS OF HEALTH CARE MANAGEMENT

## COVID FESTIVAL MANAGEMENT

Panagiota Dichala  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [p.dichala@gmail.com](mailto:p.dichala@gmail.com)

Evangelos Christou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [echristou@ihu.gr](mailto:echristou@ihu.gr)

and

Chryssoula Chatzigeorgiou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [cchatzigeorgiou@ihu.gr](mailto:cchatzigeorgiou@ihu.gr)

### ABSTRACT

Festivals play a central role and are part of the fabric of world society. They take place in a variety of locations, both indoors and outdoors, as well as in virtual and are organized by public sector bodies, sometimes non-profit and private organizations. There is a wide range of genres from food festivals, theater, dance, music or a combination of art forms, ranging from smaller community festivals to large-scale festivals with more than 100,000 participants. They can be world-wide, scattered (for example, Chinese New Year celebrations) or have their roots in local or religious traditions (Newbold & Jordan, 2016). Festivals expand the opportunities for encounter with the arts, offer collaborative experiences, and involve people in far greater numbers and compositions than conventional cultural institutions - concert halls and theaters - could achieve. The motivation of individuals to attend festivals includes escape from everyday life and socialization, while many people aim to attend many different festivals year after year and build their personal identities through these transformative experiences (Jepson et al., 2019).

However, the global COVID-19 pandemic crisis has had a serious impact on the way societies operate, both in terms of economic activity and the way people spend their free time. The SARS-CoV-2 virus has significantly affected the health, economy and socio-economic fabric of global society by disrupting the economies and lives of individuals around the world. Suddenly, with the outbreak of the virus, world production stopped, bookstores, cinemas, concert halls, clubs, museums, theaters, cultural heritage sites and art galleries closed, while festivals were postponed or canceled. According to the European Festival Union (EFA), for 2020 the average value of the estimated loss is 150,000 euros and the median price is 40,000 euros per festival, with huge impacts on the tourism sector and the local economy (Viberate, 2020).

Smaller non-profit festivals in particular, have found themselves at the mercy of market forces more than many others, due to high costs and low profit margins. In addition, due to the huge number of people attending, they require a huge focus on health and safety regulations and crisis and risk management (Fernandes, 2020; McKibbin & Fernando, 2020). Since festivals were considered as one of the major sources of transmission of infectious diseases, their cancellation or postponement was deemed necessary in a pandemic situation (Ahmed & Memish, 2020). However, no risk assessment in the world could have prepared the industry for lock-down and social distance measures we are currently experiencing, as many event companies were not insured against pandemics (Szatan, 2020).

In fact, the costs of reducing and treating this infectious disease are too high, which even the richest and most developed countries find difficult to bear (McCloskey et al., 2020).

Furthermore, with the events being considered an integral part of world tourism and currently experiencing enormous turmoil in the form of cancellations or postponements thanks to the recent outbreak of coronavirus which has been declared a pandemic of the 20th century, the recent outbreak of COVID-19 has had a devastating impact on various spectrums of economic activity in the tourism industry (Gautret, Al-Tawfiq, & Hoang, 2020). In addition to reduced revenues from tickets, grants, sponsorships and donations, commercial dining arrangements, advertising revenue or in some cases charges expected from organizers and participants in workshops and master classes described the impact of the pandemic. The festivals reported various reductions that took place under the pressure of the pandemic, with the range including the reduction of the program, the resignation of international performers, the hiring of fewer technicians, etc. (Rappeport & Smialek, 2020).

In conclusion, the COVID-19 pandemic as the largest pandemic of the 21st century has had a devastating impact on almost all sectors of economic activity with global events as one of the crucial wings of tourism being one of the sectors most affected (Fernandes, 2020 ; McKibbin & Fernando, 2020), (Ahmed & Memish, 2020; Ebrahim & Memish, 2020; McCloskey et al., 2020).

**Key Words:** covid-19, festival, management

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# CO-CREATING AGRITOURISM ACTIVITIES TO SUPPORT LOCAL DEVELOPMENT: AN EXAMINATION OF THEIR HEALTH-RELATED CONSEQUENCES IN THE COVID-19 ERA.

George Skourtis  
Department of Tourism, Hospitality and  
Sports School of Business and Economics  
Deree-The American College of Greece  
Athens, Greece  
e-mail:

Antonios Giannopoulos  
International Hellenic University  
Thessaloniki, Greece  
e-mail:

Chryssoula Chatzigeorgiou  
International Hellenic University  
Thessaloniki, Greece  
e-mail:

and

Ioanna Simeli  
Hellenic Open University  
Thessaloniki, Greece  
e-mail:

## ABSTRACT

The importance of agritourism in supporting pro-health services and providing healing benefits for both patients and tourists is well established (Chin & Pehin Dato Musa, 2021). Parallel agritourism has rapidly increased and emerged as an alternative economic activity. The purpose of this paper is to adopt an S-D Logic and co-creation perspective to demonstrate the role of agritourism in local development by highlighting its mental-health positive effects as a course of action to cope with the COVID-19 crisis. Despite that agritourism effects on local development are well-known and its healing benefits are well-established previous studies (Karampela & Kizos, 2018.) have largely neglected the agritourism experience on a service-dominant-logic-based. Based on S-D logic and its developments (Vargo and Lusch, 2016) (i.e., service ecosystem perspective) the purpose of this paper is to examine how different actors (e.g travellers, residents) co-create several agritourism activities (e.g vegetable- or fruit-picking, sampling of local wines, planting rice or root crops) and thus co-creating value for themselves as well as increase their well-being (mental health). From a service-ecosystem perspective understanding, these activities, contribute to our understanding of how interactions unfold and how they influence the co-creation of agritourism experience at the micro, meso and macro levels which in turn can enhance the viability of the tourism ecosystem-a response strategy towards COVID-19. Local communities can profit and support in this way the “green care” activities. This paper shows that agritourism and its supporting healthcare services can profit from the adoption of the service ecosystem perspective and a resource-based approach. Ultimately, specific strategies are recommended for improving the agritourism system’s success and consequently the enhancement of actors’ well-being. Theoretical and managerial implications are provided. Future research can consider the role of institutions in coordinating such resource integration activities.

**Key Words:** agritourism, local development, covid-19 era



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## DETERMINANTS OF SUBOPTIMAL ADHERENCE OF CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES MELLITUS

Mirjana Smudja  
The Academy for Applied Studies Belgrade  
Department of Higher Medical School; Belgrade; Serbia  
University of Novi Sad, Faculty of Medicine, Novi Sad; Serbia  
e-mail: [mirjana.smudja@uns.ac.rs](mailto:mirjana.smudja@uns.ac.rs); and  
e-mail: [mirjana.smudja@vzsbeograd.edu.rs](mailto:mirjana.smudja@vzsbeograd.edu.rs)

Tatjana Milenkovic  
Department of Endocrinology  
Mother and Child Health Care Institute of Serbia "Dr Vukan Cupic"  
Belgrade, Serbia  
e-mail: [tanjamil5e@gmail.com](mailto:tanjamil5e@gmail.com)

Vera Zdravkovic  
University of Belgrade, Faculty of Medicine  
Faculty of Medicine, University Children's Hospital  
e-mail: [vera.zdravkovic@udk.bg.ac.rs](mailto:vera.zdravkovic@udk.bg.ac.rs)

Silvija Sajic (meanwhile retired)  
University of Belgrade, Faculty of Medicine  
Faculty of Medicine, University Children's Hospital  
e-mail: [s\\_sajic@yahoo.com](mailto:s_sajic@yahoo.com)

and

Dragana Milutinovic  
University of Novi Sad, Faculty of Medicine  
Department of Nursing; Novi Sad, Serbia  
e-mail: [dragana.milutinovic@mf.uns.ac.rs](mailto:dragana.milutinovic@mf.uns.ac.rs)

### ABSTRACT

Despite considerable advances in medical technologies aimed at adequate glycoregulation, a significant percentage of adolescents with type 1 diabetes mellitus (T1DM) are failing to achieve optimal adherence and satisfactory metabolic control (Gandhi et al., 2015; Hood et al., 2009; Westen et al., 2018). Therefore, the aim of this study was to assess the degree of adherence to the recommended/agreed-upon therapeutic regimen and examine factors that contribute to the suboptimal adherence of children and adolescents with T1DM.

The data for this descriptive, analytical cross-sectional study was obtained by surveying the participants and examining their medical records held in the electronic database *Heliant*, in the period from December 2019 to December 2021. Purposeful sampling technique was adopted to recruit 182 children and adolescents (aged 8–18 years) diagnosed with T1DM at least six months prior. The youth recruited for the study either came for a regular check-up appointment or were hospitalized at the Institute for Maternal and Child Health "Dr Vukan Čupić" or at the University Children's Clinic in Belgrade. When distributing the questionnaire, the researchers verbally explained the purpose and goal of the study to prospective respondents and their parents, and assured them of the anonymity of the research participants and the confidentiality of the data they provided. Children aged 15 and older that agreed to participate signed the voluntary consent form, whereas parents' signature was obtained for children under the age of 15. The questionnaire designed for the current study probed into the

following sociodemographic and clinical data: respondent's age and sex, T1DM duration, presence of comorbidities, and subjective indicators of adherence (degree and implementation of recommended blood glucose monitoring, regularity with which self-monitoring diary was kept, insulin administration along with adherence to a dietary regime/calculation of carbohydrates per meal and in accordance with the planned physical activity level). In addition, glycosylated hemoglobin (HbA1c%) values were recorded in the documentation sheet as an objective indicator of adherence (ideal – HbA1c < 5.7%, good – HbA1c = 5.8–7.4%, unstable – HbA1c = 7.5–8.5%, and poor metabolic control – HbA1c > 8.5%). The study was approved by the Ethics Committees of the tertiary-level health institutions in which the research was conducted.

The average age of our respondents was 12.68 years (SD = 3.32), and females comprised 62.09% of the sample. The average diabetes duration was 4.43 years (SD = 3.36), while 42.31% of respondents noted presence of comorbidities. In 59.34% of the sample, non-adherence was determined on the basis of self-reported subjective indicators. As expected, these results were consistent with the HbA1c% values as an objective indicator of unstable (37.91%) and poor (21.43%) metabolic control in non-adherent subjects. Based on the Wilcoxon test results, the differences in adherence with respect to sex, age, diabetes duration, and presence of comorbidities did not reach statistical significance at the  $p < 0.05$  level. Therefore, none of these factors emerged as the key determinant of suboptimal adherence in the analyzed sample.

Given that suboptimal adherence is associated with inadequate metabolic control of the disease and poorer long-term health outcomes (clinical, humanistic, economic), monitoring of the objective and subjective adherence indicators in pediatric patient populations with T1DM is vital (Westen et al., 2018).

**Key Words:** Type 1 diabetes, Adherence, Children, Adolescents, Glycated Hemoglobin A, Pediatric.

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## SOCIO-EMOTIONAL ASPECTS OF THE “SHARED DECISION-MAKING” CONCEPT IN PEDIATRIC HEALTHCARE

Mirjana Smudja  
The Academy for Applied Studies Belgrade  
Department of Higher Medical School; Belgrade; Serbia  
University of Novi Sad, Faculty of Medicine, Novi Sad; Serbia  
e-mail: [mirjana.smudja@uns.ac.rs](mailto:mirjana.smudja@uns.ac.rs); and  
e-mail: [mirjana.smudja@vzsbeograd.edu.rs](mailto:mirjana.smudja@vzsbeograd.edu.rs)

Dejan Zivanovic  
University of Novi Sad, Faculty of Medicine, Novi Sad; Serbia  
Department of Biomedical Sciences  
College of Vocational Studies for the Education  
of Preschool Teachers and Sports Trainers  
Subotica, Serbia  
e-mail: [dejanzivanovic@vsovsu.rs](mailto:dejanzivanovic@vsovsu.rs)

and

Jovan Javorac  
University of Novi Sad, Faculty of Medicine, Novi Sad; Serbia  
Department of Biomedical Sciences  
College of Vocational Studies for the Education  
of Preschool Teachers and Sports Trainers  
Subotica, Serbia  
Institute for Pulmonary Diseases of Vojvodina  
Sremska Kamenica, Serbia  
e-mail: [jovanjavorac@vsovsu.rs](mailto:jovanjavorac@vsovsu.rs)

### ABSTRACT

The default behavioral pattern among healthcare professionals when making medical decisions for a pediatric patient is the delegation of authority to an adult (parent or guardian) caring for the child. This important, sensitive, and complex domain has been regulated by laws in different countries, whereby the boundaries of childhood are viewed differently. In the Republic of Serbia, the basic provisions of the "Law on Patients' Rights" stipulate that “a person under 18 years of age is considered a child” ("Official Gazette of RS", No. 45/2013 and 25/2019 – state law, Article 2, paragraph 4:1). “The reasoning ability of a child who has reached 15 years of age implies the child's ability to understand the nature of his/her health condition, the purpose of the proposed medical measure, the risks and consequences of taking and failing to take action, and the capacity to evaluate the obtained information in the decision-making process” ("Official Gazette of RS", No. 45/2013 and 25/2019 – state law, Article 2, paragraph 5:1).

However, findings reported in pertinent literature indicate that the participation of pediatric patients in medical decision-making is adapted to different situations and circumstances, primarily disease severity and the need for rapid solutions to life-threatening conditions (Coyne et al., 2014; Santoro & Bennett, 2018). The need to balance the right of pediatric patients to participate independently in the decision-making process with their needs and right to protection can cause moral distress for healthcare professionals, parents of sick children and adolescents, as well as for patients themselves. Therefore, the aim of this paper was to consider the socio-emotional aspects of medical decision-making in pediatric patients.

This was a literature review study, whereby sources considered for analysis were obtained using keywords: Children, Shared decision-making, Information, Participation, Pediatric.

In the pediatric population, brochures, manuals, books, and other visual aids are often used to familiarize patients with the medical terminology that will be used in communication with healthcare professionals. In this way, children and adolescents are given the opportunity, in accordance with their age and cognitive abilities, to engage in communication with healthcare professionals and to be involved in making various medical decisions based on informed consent, in order to minimize the discomfort induced by the forthcoming treatment and care (Coyne et al., 2014; Katz et al., 2016; Santoro & Bennett, 2018). In addition, the ability of pediatric patients to make "small decisions" that would not jeopardize their well-being can contribute to building trust between healthcare professionals and young patients. Empirical evidence indicates that, due to the sense of helplessness and loss of control over what is happening in their lives, many adolescents with severe and chronic illnesses express feelings of frustration, and are thus inclined to entrust their parents with making medical decisions on their behalf, but nonetheless appreciate healthcare professionals' efforts to provide them with appropriate information related to their health (Coyne et al., 2014; Katz et al., 2016; Liverpool et al., 2020).

It is evident that in practice, there are almost no ideal circumstances for perceiving situations involving choice. Particularly sensitive issues arise in the decision-making involved in the terminal stages of various pathological conditions (Santoro & Bennett, 2018). Sometimes, the opinions of the members of the professional team and the attitudes of the parents/guardians may not align with the young patient's decision not to accept the treatment and care. In these circumstances, possible solutions should be analyzed at the level of the Ethics Committee, while respecting ethical principles.

Pediatric practice is unique in that developmental maturation allows, over time, increasing participation of pediatric patients in shared decision-making, thus strengthening the autonomy of the young patient (Katz et al., 2016).

**Key Words:** Children, Shared decision-making, Information, Participation, Pediatric.

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## STRESS AS A SIGNIFICANT FACTOR OF ENTROPY DURING KNOWLEDGE TRANSFER PROCESS

Ioannis Konstantinidis  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [ioannis.consta@gmail.com](mailto:ioannis.consta@gmail.com)

and

Spyros Avdimiotis  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [soga@ihu.gr](mailto:soga@ihu.gr)

### ABSTRACT

Over the centuries knowledge has been the subject of philosophical discussion seeking to address the pursuit of righteous life (Avdimiotis, 2016). In this context, Aristotle referred to knowledge as *Techne* answering to the question “know how”, *Episteme* answering to “know why” and *Phronesis* “the reasoned and true state of capacity to act with regards to human goods” (Aristotle, Nicomachean Ethics, 1998 vol.1, p. 63) Aristotle among other philosophers prepared the ground for the advent of the industrial revolution era, where knowledge gained a powerfully utilitarian character, attempting to give results mainly in production issues. Peter Drucker (1954) pinpointed that one of the main facts depicting the changing aspect of knowledge was the publication of the Encyclopedia (Encyclopédie, 1772) in France, which converted the experience into knowledge, the apprenticeship into schoolbook, the confidentiality into methodology, the act into applied knowledge. Nowadays knowledge transfer and learning capabilities remain buzzwords that need to be further addressed and exploited in order to enhance the levels of knowledge acquisition capacity.

In this paper researchers seek to map the bio-chemical process of learning and indicate the role of stress and its association with knowledge entropy during the process of knowledge transfer, identifying the levels of productive and non-productive stress. For this purpose, an experiment is conducted, using a modified Trier’s Social Stress Test experimental protocol. Subjects participating were 30 postgraduate students of Organizations Management, Marketing department of the International Hellenic University, which at the initial phase- to define the basis measurement level-, the dermal electrical conductivity (EDA), heart rate (HR), stress, excitement, interest, engagement, focus, relaxation were measured, using an EEG device, (Emotiv Epoc+) and a wearable device (Empatica, E4). In the second phase of the experiment which took place 3 weeks after the initial phase, postgraduate students separately filled in the STAI Y1 (State- Trait Anxiety Inventory) questionnaire and then, the same items separately again, have been measured at the same indices during a 15-minute written and 20-minute of oral examination, while at the end of the procedure the STAI Y2 questionnaire was fulfilled. Being at the process of data evaluation and control the existence of anxiety will be ascertained and compared to those under calm conditions. Entropy levels will also be calculated employing Shannon’s mathematical formula which will be also associated with the final grade gained from the written and oral examination.

$$E(s) = \left( \sum_{i=1}^{30} p \log p \right) / (g)$$

Where  $E(s)$  is the entropy,  $p$  is the probability of knowledge transfer,  $\log$  is the logarithm of probability,  $(g)$  is the oral and written examination grade.

The overall purpose of the experiment is to locate any mutual (EEG, EDA, HR, Stay Y1 and Stay Y2) data patterns among the subjects, to understand the role of stress in knowledge transfer process and finally to determine the level of distortion/ entropy during knowledge transfer process. The overall

object of the research is to identify the balancing point between the productive and non-productive stress in the process of knowledge convey in a learning organization structure, restraining at the same time the level of knowledge entropy.

**Key Words:** stress, factor, knowledge transfer

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# QUALITY ASSURANCE IN HEALTH CARE UNITS

## EMERGING TRENDS IN INTERNAL AUDIT IN PUBLIC HEALTHCARE UNITS

Ekaterini Chroni  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [aikxro@gmail.com](mailto:aikxro@gmail.com)

and

Stefanos E. Karakolias  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [stefkara@bua.teithe.gr](mailto:stefkara@bua.teithe.gr)

### ABSTRACT

The present study aims at presenting and analyzing the emerging trends in the implementation of the institution of internal audit in the Greek public sector and especially in healthcare units, along with highlighting the new role of internal audit as was recently defined by Law 4795/2021. For the very first time, policy makers intended to regulate in a unified way issues relating to the provision and operation of the so called “internal audit system” as well as the establishment of “internal audit units” in all general government bodies. For the conduct of the research, a literature review was initially conducted, analyzing the concept, types, and objective of internal audit in the Greek public sector, focusing, however, on the investigation of the latest reforms as they have been formulated recently, in accordance with laws and regulations, and in addition, the qualitative research approach was chosen with the main means of data collection being the personal semi-built interview.

The results revealed an effort to modernize public administration and improve the effectiveness, efficiency and credibility of the public bodies, while at the same time the principles of good governance are expected to be strengthened. These new trends also bring about changes in the perceptions-culture of employees and enhance the independence of the internal audit units, with the establishment of the “code of conduct”, the implementation of audit standards, the thorough scientific training of internal auditors and the introduction of the institution of integrity consultant, promoting transparency, integrity and accountability in all areas. However, to successfully reach any changes and applications of reforms it is necessary for everyone to realize the importance of internal audit as a process in order to be more effective in its performance. What comes to the conclusion is that this brand-new environment in the field of internal audit is about to develop a strong basis of conceptual - thematic reference, accountability and integrity. Within this particular concept internal audit seems to be transformed from a typical and bureaucratic process into an essential and necessary management tool that above all adds value to healthcare organizations. This is also a capable condition for attracting capable executives in administrative positions held especially in public hospitals.

**Key Words:** Internal audit, Reforms, Ethics, Public health services.

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## RISK MANAGEMENT PRACTICES IN GERMANY AND POSSIBLE ADJUSTMENT IN THE GREEK HEALTH CARE SYSTEM.

Aikaterini Valsamatzi-Panagiotou  
Resident doctor in Family Medicine  
General hospital Papageorgiou  
Thessaloniki, Greece  
e-mail: [valsamatziaikaterini@gmail.com](mailto:valsamatziaikaterini@gmail.com)

Mathias Zink  
Professor in Psychiatry  
Chief in the Department of Psychiatry  
Psychotherapy and Psychosomatics  
Bezirksklinikum Ansbach  
Ansbach, Germany  
e-mail: [mathias.zink@bezirkskliniken-mfr.de](mailto:mathias.zink@bezirkskliniken-mfr.de)

Stergiani Spirou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [sspyrou@gmail.com](mailto:sspyrou@gmail.com)

Spyros Avdimiotis  
Associated Professor  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [soga@ihu.gr](mailto:soga@ihu.gr)

and

Anna-Maria Papastavrou  
Resident in Psychiatry  
Department of Psychiatry  
Psychotherapy and Psychosomatics  
Bezirksklinikum Ansbach  
Ansbach, Germany  
e-mail : [annam2801@gmail.com](mailto:annam2801@gmail.com)  
<mailto:mathias.zink@bezirkskliniken-mfr.de>

### ABSTRACT

In the past few years, healthcare systems face serious problems worldwide. The current pandemic revealed a lot of gaps, especially in the field of health management, and lead to a variety of alterations in the strategies and operation techniques in health care facilities. In this changing environment, the inability of the health care systems to cope with the arising risks such as errors misses, and adverse events, negatively affect the patient's safety, aggravates the exhaustion of health personnel, and at the same time enhances the financial burden for the healthcare. All those mentioned above highlight the significance of the introduction of risk management in all healthcare systems (Kreuzer et al., 2020). A special field in management, clinical risk management (CMR) exists which focuses on clinical processes to improve the quality and services in health care. The establishment of CMR is a way to handle the present and future challenges (Briner, Kessler, Pfeiffer, Wehner, & Manser, 2010; Briner, Manser, & Kessler, 2013; Farokhzadian, Dehghan Nayeri, & Borhani, 2015; Power, 2004).

There are some countries where legal conditions demand the introduction of risk management such as Germany, the UK, the Netherlands, or several Scandinavian countries. Contrary to other countries, it is not mandatory in the Greek healthcare system. However, its importance is inevitable to prevent future

risks and emergencies (LEPPING et al., 2009). The current study aims to the evaluation of the necessity of the CMR system in Germany and the assessment of the possibility of its adjustment in the Greek health care system (Ernstmann et al., 2009). The research was conducted in Germany. The method which was used is quantitative with the use of interviews which were audio-recorded and transcribed for review and discussion in the research team. Ten key informants who work in the CMR field participated. The data were collected from the participants and subsequently analyzed. The results indicated that the use of risk management in health care units is of great importance. It contributes to the reduction of mistakes which minimizes the risk in the field of health and subsequently reduces financial and human losses and contributes to the prevention of high quality of services.

The results indicated that risk management can be adjusted in the Greek health care system under consideration. The composition of a special team that is going to be responsible for the field of risk management is required. Risk and quality managers should be present in every health care unit. The risk manager is the main person who identifies and monitors the risks, coordinates the team, and searches for possible solutions. Although the rest of the health care workers should take some special courses in the field, to take part in the process of risk identification, recording, and monitoring. Quality management and risk management are closely related. Quality systems are inevitable for the health care units. The use of certifications as International Organization for Standardization (ISO) included in the process of risk and quality management. A reporting system as Critical Incident Reporting-System available anonymously for all the healthcare workers also constitutes a precondition. Software for the record of the risks is required to simplify the process of recording, controlling, and monitor of the risks. All the measures which are going to be implemented should be cost-effective. In conclusion, it should be highlighted that patient safety is a major concern in health care, nevertheless, the risks related to patient care can be reduced but can never be eliminated. The purpose of CMR use is the improvement of the healthcare quality, insurance of patient's safety, and the reduction of costs.

**Key Words:** Risk assessment, risk management, hospitals, Germany, clinics, patient safety, quality improvement.

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# THE QUALITY OF MIDWIFERY AND GYNECOLOGICAL SERVICES PROVIDED THROUGH A HEALTH CRISIS. ATTITUDES AND PERCEPTIONS OF MIDWIVES.

Pinelopi Batsi  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [pinelopibatsi@gmail.com](mailto:pinelopibatsi@gmail.com)

and

Irini Leimoni  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [ileimoni@gmail.com](mailto:ileimoni@gmail.com)

## ABSTRACT

The definition of quality is difficult to be determined, because there are several different meanings given for the quality of goods and for the quality of the provided services.

Provided services are a rapidly growing factor during the recent years and human resources have a key role to it (Eurostat, 1994). For that reason, health care providers pay great attention in the proper organization of their staff and their respected satisfaction, aspects that contribute to the improvement of the quality of the services provided to their customers.

The contribution of the staff involved in health care services is of major importance and for that reason, satisfying the needs of the staff constitutes an important research aspect that troubles researchers during the recent years (Papageorgiou et al. 2014, Kalogeropoulou, 2011, Martel and Dupuis, 2006, Paleologou et al. 2006).

The definition of the quality in the services provided by the midwifery and gynecological sector is also difficult to be determined. Women near childbirth, women after childbirth and women experiencing other gynecological problems are in need of greater care and support, due to the fact that they feel significantly vulnerable when they address to the aforementioned sectors. The satisfaction they feel that derives from the specialized treatment and care they receive, is a very important quality indicator that is taken into serious consideration from the midwifery and gynecological centers (Hadizadeh Talasaz et.al. 2014).

The goal of this research paper is to investigate midwives' expectations for the quality of the provided services in health facilities, as well as define the grade of their satisfaction for the provided services in the institutions they work for.

The total number of the sample was a hundred and seventy-four (174) respondents. The sample was comprised of midwives from all over Greece, who work both in the private and in the public sector in midwife and obstetrics centers. The research took place from 5/4/2021 until 14/6/2021. A SERVQUAL questionnaire was used in which there were 22 questions concerning the expectations for the provided health services and 22 questions which formulate the midwives' opinions for the health services that are provided in the centers they work for. A descriptive analysis of the results method was used. The processing and analysis of the data took place using Microsoft Office Excel 2007.

99,5% of respondents were female. The majority of individuals, 49,5%, were ages 35-49. Concerning their educational background, they were 60,5% Technical Institute Graduates. The majority of them, 59%, are working in Thessaloniki and the majority of them, 46,5%, are working in the public sector.

The results have shown that the greatest satisfaction for midwives is to be found in the constant responsiveness to the patients' demands from the staff members, even at the busiest of times. The discrepancy between their expectations and reality is much smaller. On the other hand, the largest

discrepancy is shown in the question concerning the support hospital employees receive, so that they can do their job well. The satisfaction rate is at the lowest for this question.

**Key Words:** Quality of services, health services quality, midwives.

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# INVESTIGATION OF THE POSSIBILITIES OF INTERNAL AUDIT AS A STRATEGIC FACTOR OF EFFECTIVE RISK MANAGEMENT OF A COMPANY: CASE STUDY OF THE PRIMARY HEALTH CARE SECTOR OF A PRIVATE ENTITY (REFERENCE CENTERS - BIOPATHOLOGICAL LABORATORIES)

Dr. Dimitrios M. Mylonas  
Economist-Legal-Accountant A Class-Education consultant  
International University of Greece  
Thessaloniki, Greece  
e-mail: [dimmylonas@gmail.com](mailto:dimmylonas@gmail.com)

Antigoni A. Michou  
Manager of Laboratory Network  
at Euromedica Healthcare Group  
University of Winchester  
Thessaloniki, Greece  
e-mail: [antigonimichou@gmail.com](mailto:antigonimichou@gmail.com)

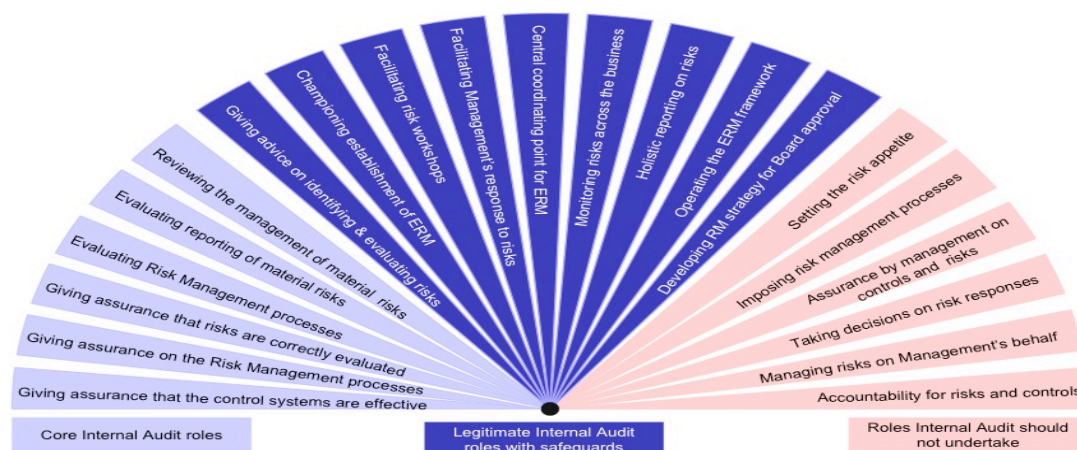
and

Menelaos D. Mylonas  
Economist-MBA  
University of Winchester  
Thessaloniki, Greece  
e-mail: [menmyl96@gmail.com](mailto:menmyl96@gmail.com)

## ABSTRACT

The current economic reality and the new challenges with which it becomes fully intertwined bring the managements of organizations and modern business entities in front of new and higher business risks, with the ultimate goal of achieving corporate goals (Drogalas,G. & Siopi,S.,2017). Internal Audit is the support tool for assessment and proper management of business risks (Allegrini,M. & D'Onza,G.,2003).

**Figure 1.**  
**The Role of Internal Audit in Enterprise-wide Risk Management**  
**(The Institute of Internal Auditors, 2009)**



This dissertation deepens the process of Internal Audit as a strategic factor of effective risk management in the field of Primary Health Care. More specifically, the study focused on private biopathological laboratories in Eastern Macedonia and Thrace, Central Macedonia, Epirus, Thessaly and Central Greece. The purpose of this study is through the scientific and systematic analysis of the existing literature, not the elimination of risks but their more rational management and the proposal of workable solutions in the above areas of research.

From the theoretical part of the work (secondary research), it became clear that Internal Audit has surpassed its traditional role. It continues to be constantly upgraded globally, emphasizing risk management in order to plan out its periodically and annual plans.

The pilot tests (primary research) were carried out using a questionnaire, based on the objectives of the research which was distributed electronically to a total of 205 biopathologists throughout Greece. The structure of the questionnaire groups and investigates factors related to internal control and risk management. Respondents were asked to answer agreement or disagreement according to the Likert five-point scale: not at all, on a small scale, on a medium scale, on a large scale, too much. The questions were closed-ended, in order to achieve the collection of the desired quantitative data. Statistics analysis was performed in the statistical program IBMSPSS Statistics(Version25). In addition,  $p < 0.05$  was used as the level of statistical significance.

In order for private health care units to be viable today conducive to ensure access to care for the whole population based on clinical need and not on the patient's ability to pay, they must be managed in whose main purpose is to safeguard the interests of the Laboratory and those associated with it, so that in an environment of limited resources to achieve cost reduction, improving the efficiency, effectiveness and quality of health services. In Greece there is no relevant governance framework so the adjustment is up to the will and ability of every Biopathologist to adopt them.

The complexity of the operation of a Laboratory obliges the existence of internal control that supports decision making through observation, review and evaluation of activities, highlighting its weaknesses, strengths, risks, operation of systems, the degree of compliance with laws and regulations as well as and the observance of the prescribed procedures. It is considered effective when it operates independently while at the same time it is supervised by the doctor Biopathologist.

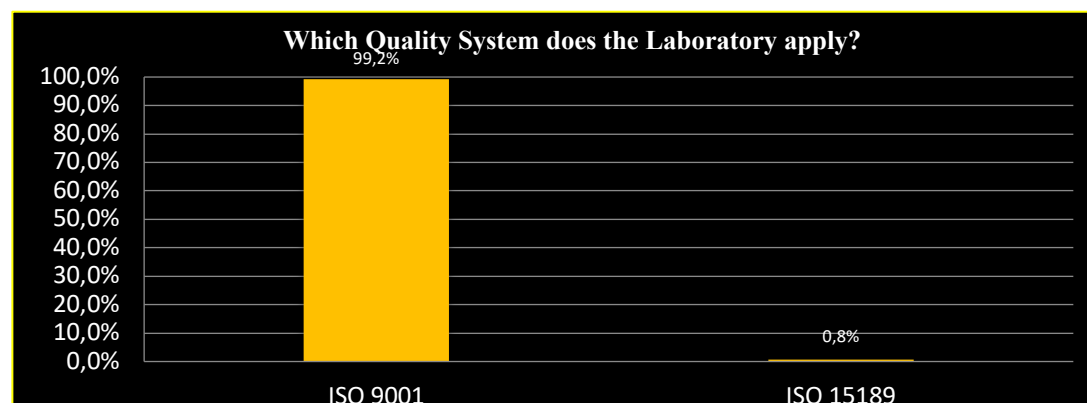
As confirmed by the research, the largest percentage of participants does not have an internal audit officer. The auditor is the doctor himself, a fact that contradicts international standards and limits its effectiveness.

The system that preserves the integrity, transparency and achieves the preservation of the assets belonging to the laboratory is considered effective and efficient, freeing it from essential errors. Its functions are formulated in writing and communicated to the staff, thus ensuring the implementation of decisions and effectiveness. Otherwise there is a risk of errors, omissions and disclaimers as the auditors cannot verify compliance with the procedures. Laboratories that do not have a written detailed Rules of Operation for all their activities must proceed immediately to its drafting as required by applicable law (article 25, law4025/11)and international regulations.

The quality system is not involved in medical decisions but only in organizational processes promoting staff-friendly improvements. It would be appropriate for them to incorporate in their Rules of Procedure, even informally, the relevant quality standards, which they can communicate to the public, thus establishing standards of application by the staff, giving value to both the company and the patient.

Regarding whether there are weaknesses in the legal and regulatory framework, article 25n.4025/11 was organized like most things in Greece, casually and hastily. The majority of the laboratories that participated in the research are smaller regional laboratories with minimal staff, low number of patients and low turnover, feel more the pressure of implementing a demanding standard both in terms of requirements and cost, considering the need for quality improvement more important and for safety in the laboratory examination. In contrast to the heads of laboratories of network units, which are provided with an internal control package without financial burden and consider as the most important reason the need to comply with the relevant legislation(Law4025/2011).

The need for Internal Audit becomes obvious, considering the difficult modern economic environment faced by clinical laboratories in Greece. Defining the role and responsibilities of internal auditors is the most important factor in the effective organization of the system. The research shows that there is a common model, as the majority apply ISO:9001.



**Graph 1: Distribution of the question "Which Quality system does the laboratory apply?"**

It is concluded that the application of the combined Model ISO:9001-E.F.Q.M, reduces their weaknesses and fully covers all alternative types of controls, contributes to the most effective treatment of any problems and pending issues and contributes significantly to the financial management of Biopathological Laboratories.

In conclusion, this model is considered more complete for dealing with all variables, requiring adjustments in order to implement it more effectively so that laboratories can meet their obligations and their patients with the same quality and reliability over time.

**Key Words:** Internal Audit, Risk Management, Biopathological Laboratories, Biopathologists, Auditor.

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# "ORGANIZATION AND OPERATION OF INTERNAL AUDIT, A STRATEGY FOR COST RATIONALIZATION IN A PUBLIC ORGANIZATION: A CASE STUDY OF THE HOSPITAL UNITS OF THE 3RD & 4TH HD. (HEALTH DISTRICT OF MACEDONIA - THRACE ".

Dr. Dimitrios M. Mylonas  
Economist-Legal-Accountant A Class-Education consultant  
International University of Greece  
Thessaloniki, Greece  
e-mail: [dimmylonas@gmail.com](mailto:dimmylonas@gmail.com)

Menelaos D. Mylonas  
Economist-MBA  
University of Winchester  
Thessaloniki, Greece  
e-mail: [menmyl96@gmail.com](mailto:menmyl96@gmail.com)

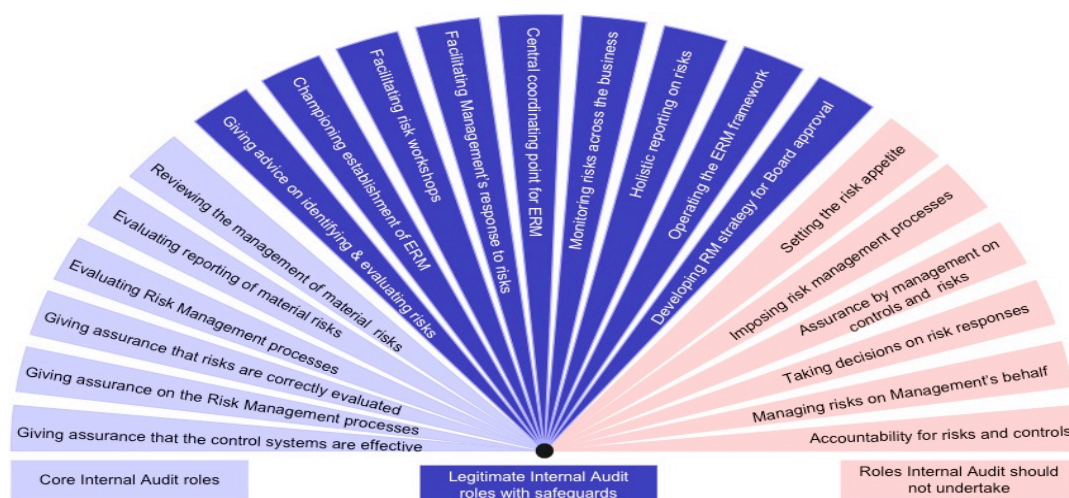
and

Antigoni A. Michou  
Manager of Laboratory Network  
at Euromedica Healthcare Group  
University of Winchester  
Thessaloniki, Greece  
e-mail: [antigonimichou@gmail.com](mailto:antigonimichou@gmail.com)

## ABSTRACT

Internal Audit is an essential tool for management, contributing in its own way to the correct diagnosis and management of risks, creating value in a business, while providing the general rules, terms and conditions for financial and management control in every organization that aims at the preservation and proper management of financial resources and foreign assets (Karamanis, 2008).

**Figure 1.**  
**The Role of Internal Audit in Enterprise-wide Risk Management**  
**(The Institute of Internal Auditors, 2009)**



This dissertation deepens the process of Internal Audit as a strategic factor of effective risk management in the field of Primary Health Care. More specifically, the study focused on private biopathological laboratories in Eastern Macedonia and Thrace, Central Macedonia, Epirus, Thessaly and Central Greece. The purpose of this study is through the scientific and systematic analysis of the existing literature, not the elimination of risks but their more rational management and the proposal of workable solutions in the above areas of research.

At a theoretical level, the necessity of Internal Audit was identified and whether through it cost control is possible. Strategies for cost management and the International Models of Internal Audit were analyzed while, the most appropriate one was selected for the data and needs of the specific industry.

At a research level, the existence of procedures or organized Internal Audit departments in the Nursing Institutions of the 3rd & 4th Health District of Macedonia and Thrace (3rd & 4th HD) were investigated, whether or not, models were applied by the Internal Audit department of each hospital and finally the contribution of the applied Internal Audit model in monitoring the operating costs of each unit was evaluated.

Quantitative, primary research was selected as a method for gathering data. The reason is that the development of the mathematical model required for the study, can only be done through the collection and utilization of specific information, which is currently not available anywhere else.

The primary survey was conducted using semi-structured questionnaires. The questionnaires were designed based on the objectives of the research and were distributed electronically to the Internal Auditors of the twenty-nine hospitals of the 3rd & 4th Ministry of Health of Macedonia-Thrace. The questionnaires were written in Greek and sent via e-mail, to save resources and provide faster data collection. The questionnaire addressed to the Internal Auditors of the hospitals includes thirty-three close ended questions: six questions concern the profile of the respondent and twenty-seven questions concern the experience of the Internal Auditor, specialized questions on the use of Internal tools and methods, the main problems they face during the performance of their duties and whether their proposals are accepted and implemented by the executives, as well as, whether Internal Audit procedures and investigation result in the financial management and Audit of the operating costs of the hospital.

Regarding the existence and structure of the Internal Audit Department of the hospitals, it is concluded that they exist and are integrated in the hospitals as independent and autonomous departments. Regarding the staffing of the Administrations of the organizations as well as of the Internal Audit departments, it was observed that they consist mainly of men, who are relatively young and have a lot of work experience. The executives are of high and very high educational levels. The diversity of work experience, the age of the executives as well as their very high level of education creates a "suitable" ground for the change of mentality through the promotion and implementation of continuing education programs, the transfer of new skills to older employees as well as younger employees, in order to modify their attitude and behavior, which as found by our research has not been developed in most organizations.

There is also a need for modernization of hospital information systems, as the existing "hospital information systems" do not provide full coverage for all functional units of the units. This can only be achieved by the implementation of an integrated enterprise resource management information system (ERP).

The Internal Auditors of the hospitals carry out regular Audits of cash flows, receivables, liabilities, stock of materials and medicines and the payment of taxes, as well as monitoring doubtful receivables. In all the hospitals that were surveyed, these Audits are done regularly with a frequency of mainly two or three months. It is also concluded that the Audits performed in the hospitals, whether general, specialized and targeted, are more suppressive than preventive. Considering that the Administration gives the directions and suggests to the Internal Auditor, it is found that the objectives that are set, mainly concern the detection and suppression of specific and targeted irregularities. However, developing and promoting Audit systems that prevent errors and omissions adds more value to an organization. This should be the main goal of hospital Administrations.



The results of the research show that most of the executives and employees of the hospitals have not understood the meaning and the importance of conducting Internal Audit, as "an integrated system whose implementation adds value to the organization. At the same time, no serious problems or reluctance of the staff of the hospital departments were observed during the inspections. Also the recording of the essential problems and malfunctions of the departments would help in reducing the costs and in their better operation. Often the sudden intrusion of the Internal Auditor, disrupts the smooth operation of the department and causes a negative mood of cooperation to employees.

Regarding the Internal Audit models, applied by the Internal Auditors in the hospitals, it is observed that there is no common used model, but the C.O.S.O. model is preferred. It also appears that most Internal Auditors are very satisfied with the Internal Audit model they have adopted and apply to health units. Of course, many of the Internal Auditors consider the model that they apply quite satisfactory in terms of the expected results to reduce the operating costs of the health unit they control.

In conclusion, Internal Audit (according to the conducted primary research), can become an important factor in auditing the operating costs of the hospitals in this difficult economic situation that Greece is in when it is carried out according to auditing standards, by professional internal auditors, who understand the culture of the organization and have a deep knowledge of control systems and procedures. With these factors the internal control mechanisms are sufficient to eliminate the risk, and its objectives are met.

**Key Words:** Internal Audit, Internal Auditing Models, C.O.S.O, Hospitals, Audit in Hospital units, Greece.

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# ALTERNATIVE ASPECTS OF HEALTH CARE MANAGEMENT

## PROVIDING PALLIATIVE CARE FOR ELDERLY POPULATION WITH OR WITHOUT DEMENTIA SYMPTOMS, WHO LIVE IN NURSING HOMES

Theodora Aligizaki  
Psychologist  
PhD Candidate, University of Crete  
graduate student of MSc "Management of Health and Welfare Units"  
International Hellenic University  
e-mail: [doraligizi88@gmail.com](mailto:doraligizi88@gmail.com)

### ABSTRACT

Palliative care in the elderly population, who live in nursing homes with or without dementia symptoms, is a very important chapter of care. In this bibliographic review, which was the thesis of the MSc program "Health Unit Management" of the International Hellenic University; the integration of palliative care in the health system, the basic principles of palliative care and its usefulness in geriatric patients in nursing homes were investigated (STERILISATION, 2015). Geriatric patients are faced with a multitude of physical and psychiatric / neurological symptoms while 40 million people each year (usually over the age of 65) need the provision of holistic palliative care. Unfortunately, only 20 countries (8%) worldwide have a built-in palliative care system within their health facilities (Harding, & Higginson, 2014). Alzheimer's and other forms of degenerative diseases affect approximately 47 million people worldwide and it is estimated to affect 131 million by 2050 (Mason, 2015). Due to the nature of end-stage dementia and the complex needs experienced by patients, both individuals and their families need to be able to receive holistic care. Although the approach would be ideal when applied from the first moment of diagnosis, it is also a necessity for people who are in an advanced stage (van der Steen et al., 2014).

Numerous studies show that people who live in a nursing home and receive palliative care through an interdisciplinary team that follows the basic ethical principles of palliative care, show improved quality of care, mental and physical health (Neville et al., 2015). Interventions in both traditional forms of care and alternative therapies seem to be particularly helpful for people with dementia (for example music therapy, art therapy and drama therapy) (Ridder et al., 2013; Melhuish, Beuzeboc & Guzmán, 2017). All interventions focus on both the patients themselves and their families while the grief management is crucial during care (Ferrell et al., 2018). Furthermore integrated palliative care takes into account the psychological, spiritual, social and cultural needs of individuals (Lee et al., 2016).

In concluding the application of palliative care, particular emphasis should be placed on the various ethical dilemmas and "end-of-life concerns" as well as the ethical dilemmas of the elderly living in a nursing home (Schaffer, 2007).

**Key Words:** palliative care, dementia syndrome

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# THE PSYCHOLOGICAL IMPACT OF COVID-19 ON THE GENERAL POPULATION AND HEALTHCARE WORKERS IN GREECE DURING TWO CONSECUTIVES LOCKDOWNS: IMPLICATIONS FOR HEALTH POLICY

Argyroula Kalaitzaki  
Department of Social Work  
Hellenic Mediterranean University  
Laboratory of Interdisciplinary Approaches  
for the Enhancement of Quality of Life  
University Research Centre ‘Institute of AgriFood and Life Sciences’  
Heraklion, Greece  
e-mail: [akalaitzaki@hmu.gr](mailto:akalaitzaki@hmu.gr)

Alexandra Tamiolaki  
Department of Social Work  
Hellenic Mediterranean University  
Laboratory of Interdisciplinary Approaches  
for the Enhancement of Quality of Life  
Heraklion, Greece  
e-mail: [alexandratmk93@gmail.com](mailto:alexandratmk93@gmail.com)

George Tsouvelas  
Department of Psychology  
National and Kapodistrian University of Athens  
Laboratory of Interdisciplinary Approaches  
for the Enhancement of Quality of Life  
Athens, Greece  
e-mail: [tsouvelasgiorgos@gmail.com](mailto:tsouvelasgiorgos@gmail.com)

and

George Konstantakopoulos  
Department of Psychiatry  
National and Kapodistrian University of Athens  
Eginition Hospital  
Athens, Greece  
Research Department of Clinical  
Education and Health Psychology, University College  
London, UK  
e-mail: [gekonst@otenet.gr](mailto:gekonst@otenet.gr)

## ABSTRACT

People around the world have experienced significant challenges due to the COVID-19 (e.g., social distancing measures, uncertainties and fears associated with the virus) with detrimental effects in their mental health (Moreno-Jiménez et al., 2021). Accumulated evidence has demonstrated that the general population are at great risk of developing symptoms of posttraumatic stress disorder (PTSD; Hong et al., 2021) and healthcare workers (HCWs) are also at risk of suffering from secondary traumatic stress symptoms (STS; Kalaitzaki et al. 2021). STS includes symptoms similar to those of the PTSD and it develops from one’s vicarious exposure to other people’s suffering (Manning-Jones et al., 2015). Although research in different time-points could better clarify the longitudinal effects of the COVID-19 pandemic on the mental health of the general population and HCWs (Kalaitzaki et al., 2022; Wang et al., 2020), studies comparing the mental health symptoms between two timepoints during the pandemic are still few (Valiente et al., 2021). Therefore, this presentation aims to (a) examine PTSD and STS symptoms among the general population and HCWs respectively in Greece across two consecutive

lockdowns and (b) provide recommendations regarding how governments and policy measures can best support vulnerable populations to reduce the dramatic mental health consequences of COVID-19.

Cross-sectional online data was collected during the COVID-19 first lockdown in Greece (23 March - 03 May 2020) and the second one (15 November– 12 December). The overall sample enumerated 2,083 participants; 1,361 participants were recruited from the general population (1,009 during the first lockdown and 352 during the second one) and 1,076 were HCWs (647 during the first COVID-19 lockdown and 429 during the second one). The participants completed an online questionnaire. The PTSD Checklist for DSM-5 (PCL-5; Weathers et al., 2013) and the Secondary Traumatic Stress Scale (STSS; Bride et al., 2004) were used to measure PTSD and STS, respectively. Our results showed that compared to the first lockdown, during the second one, the majority of the participants from the general population reported statistically significant higher levels of PTSD, whereas the majority of the HCWs reported lower levels of STS symptoms. Although higher levels of STS could have been anticipated at the second lockdown because of the exponential rise of confirmed cases (e.g., Kalaitzaki et al., 2022) this was not the case for the HCWs. This may reflect an increased ability to adjust and manage the COVID-19-related stress (e.g., fear of contagion and spreading the virus). Moreover, increased knowledge about COVID-19 and of using personal protection measures (Kalaitzaki et al., 2020; Li et al., 2020) may have mitigated initial fears and uncertainty and related stress. On the other hand, the general population was shown to be more vulnerable to the psychological impact of pandemic. Overall, the findings of the present study highlight the mental health needs of the general population, and these should be the epicenter of the healthcare policies during this and similar crises. As the pandemic continues to surge, identifying individuals at risk could potentially pave the way for the development and implementation of innovative interventions to support vulnerable groups and safeguard their mental health and well-being. Actions and interventions that should be prioritized by healthcare policies and have the potential to combat the detrimental effects of the pandemic and promote positive impacts for the vulnerable subgroups of the general populations will be presented.

**Key Words:** Secondary Traumatic Stress, Posttraumatic stress disorder, COVID-19, vicarious trauma, mental health.

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## EXPLORING MEDICAL TOURISM DESTINATION: THE CASE STUDY OF THESSALONIKI, GREECE

Maria, Panidou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [panidou\\_maria@yahoo.com](mailto:panidou_maria@yahoo.com)

Fotios, Kilipiris  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [fotis.e.kilipiris@gmail.com](mailto:fotis.e.kilipiris@gmail.com)

and

Spyridon, Avdimiotis  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [rdoffice@gmail.com](mailto:rdoffice@gmail.com)

### ABSTRACT

Medical and Health Tourism is a fast growing industry which contributes to the enhancement of the employability, building infrastructure, expansion of knowledge globally and considered to be a great asset to society as well (Wang, 2020). Medical Tourism refers to people who are either traveling within or outside the borders of their country with various types of health problems and the provision of medical monitoring and care, which aims to prevent, diagnose and maintain their personal health (Sarantopoulos and Laloumis, 2015; Connell, 2011).

The rise of Medical Tourism is an emerging form of tourism that attracts research interest due to the fact that it has potential to contribute to economic growth and at the same time reconsider the quality of healthcare service delivery (Noor Haziha et al., 2015; Yeoh et al., 2013). More and more countries are trying to find ways to attract health tourists by offering high quality services, low cost and specialized services. According to current research the key factors that affect the decision of a Medical Tourism Destination (MTD) considered to be the service quality, quality of healthcare, doctors expertise, hospital or clinic reputation, low cost and accessibility (Wang, 2020; Bartzis et al., 2020).

This study focused on the case study of the city of Thessaloniki and explored the possibilities of becoming an attractive pole for medical tourism destination. More specifically, the main aims and objectives of the research were to consider the perspective of developing the city of Thessaloniki as a medical tourism destination taking into consideration the key factors that seem to influence the medical tourism destination choice. Moreover, the authors explored the current target markets, distribution channels, offered medical services-treatments, assessments costs, accreditation and expertise of the doctors, technologically advanced equipment (Velissaridis and Tzioumis, 2014). The survey was conducted among Directors and managers of the private clinics and rehabilitation centres. Furthermore, the methodology followed was qualitative research with the use of semi structured interviews along with the above mentioned representatives of the private clinics.

The results indicate that there is fertile ground and potential in order to develop the city of Thessaloniki to a Medical Tourism Destination however there is a lack of a common strategic plan and coordinated actions as far as it concerns the government and local authorities in order to promote and consequently establish Thessaloniki as a MTD. The authors suggested solutions and further research is recommended to investigate the notion of the current patients regarding the offered services, overall satisfaction and intention of revisiting the destination.

**Key Words:** Medical Tourism destination, Healthcare, Key factors for MTD.



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# THE HARMONIOUS COLLABORATION OF ARTIFICIAL INTELLIGENCE WITH LITERATURE· BENEFICIAL IMPLICATIONS FOR MENTAL HEALTH MANAGEMENT

Valentini Kambatza  
Deputy Professor  
International University of Greece  
Thessaloniki, Greece  
e-mail: [vkambatza@gmail.com](mailto:vkambatza@gmail.com)

## ABSTRACT

This study constitutes a theoretical review on the gradual and ever-increasing connection between Artificial Intelligence and Literature and their beneficial implications also in the field of mental health, especially in times of crisis or instability (economic, cultural and health, with the recent example of the Covid-19 pandemic).

It aims at presenting decisive factors that contributed to the need for the approach and harmonious cooperation between Literature and Artificial Intelligence, aiming at the emergence and evolution-regeneration of the former. Furthermore, the advantages of this coupling are listed, with tangible evidence in favour of the latter (promotion of literary work, innovative writing techniques, better reception of the work by readers, etc.) (Giannakopoulos, 2020; Kambatza, 2018; Kambatza, 2019). Beneficial implications are also observed in the field of mental health.

"Artificial Intelligence", as a term, refers to software systems that adopt important elements of human behaviour (learning, adaptability, reasoning, problem solving, etc.). According to John McCarthy (creator of the term "artificial intelligence" in 1955 and of the computer programming language LISP in 1958), AI constitutes the "science and methodology of creating intelligent machines" (Zawacki-Richter, Marin, Bond et al., 2019). And it is a key tool for many scientific disciplines, such as Computer Science (as a part of it), Psychology, Sociology, Neurology, Linguistics and Engineering Science, making adequate use of its results. It is divided into 'Symbolic AI' (algorithmic simulation of human intelligence) and 'Sub-symbolic AI' (reproduction of human intelligence, based on specific numerical models). According to a more recent definition, "Artificial Intelligence is that branch of computer science that deals with the design of intelligent computing systems, i.e. systems with features related to intelligence in human behaviour (learning, reasoning, problem solving, natural language understanding, object recognition, etc.)" (Georgouli, 2015).

Artificial Intelligence has made significant strides in the last decade. Its collaboration with Literature has given the latter a touch of freshness and innovation, since algorithmic transgressions have often led to literary works that are utterly surreal and peppered with plenty of imagination. A typical case is that of writers who experimented by letting the software system create a text and then editing it, putting their own personal stamp on it. From 1920 to the present day, literature and cinema (science fiction) have been represented by the creation of mechanical androids with enhanced abilities and special intelligence. For example, the award-winning *The Road* (2006), a science fiction novel with ecological implications by the American writer Cormac McCarthy (adapted for the cinema in 2009 by the Australian-Canadian director John Hillcoat). The creators of science fiction works (Wells, Asimov, Orwell, Kubrick, Lang, Lucas, Cameron) envision machines that reach human limits, having acquired basic emotions. In fact, artificial intelligence and robotics scientists are converging in the effort to build a software or intelligent machines capable of solving existing computational problems. At the same time, the revolutionary breakthroughs in technology have made aesthetically remarkable literary works more interesting to their readership.

This seamless use of technological applications by Literature has also contributed significantly to the improvement of people's mental health in times of instability and stress, such as the Covid-19 pandemic. The computer replaced -in part- communication and provided an outlet for people's feelings of distress created by forced confinement. Furthermore, literature and art in general have made a

significant contribution to improving health, since surgery is often performed to the accompaniment of soft, enchanting music. At the same time, the cinematic adaptation of a literary work (with the assistance of technological effects) can have a calming effect on situations of anxiety, over-excitement, depression, etc.

However, there are reservations about the potential of AI to create an authentic work of art, but also concerns about the new social reality supported by AI and robotics (Webster & Ivanov, 2019; Unesco, 2019) as well as human well-being (Köse, 2018) and employment (Brougham & Haar, 2018; Tahan, 2019).

Ultimately, the rationalized adoption of AI can contribute to the renewal of literature and, subsequently, to the cultural development of society and the improvement of mental health.

**Key Words:** Artificial Intelligence, Literature, Culture, Mental Health.

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## HEALTH MORAL DISTRESS OF NURSING PERSONNEL AND EMOTIONAL RESILIENCE ENHANCEMENT MEASURES DURING COVID 19 PANDEMIC.

Irene Magionou  
Hellenic Open University  
Athens, Greece  
e-mail: [eirhnhmagiwnou@gmail.com](mailto:eirhnhmagiwnou@gmail.com)

and

Maria Malliarou  
Associate Professor  
University of Thessaly  
Larissa, Greece  
e-mail: [malliarou@uth.gr](mailto:malliarou@uth.gr)

### ABSTRACT

WHO has warned about the potential negative impact of the COVID-19 crisis on the mental well-being of health and social care professionals mentioning that mental health problems commonly include depression and anxiety due to excessive workload but also owing to moral dilemmas they have experienced, would appear (Pollock & Campbell, 2020). Moral distress (MD) occurs when one knows the morally correct action to take but feels unable to take this action. (Epstein & Delgado, 2010) This bibliographic review aims at presenting the moral impasse factors on health professionals in times of crisis such as pandemic covid-19 but also in the wider framework of the last decade and seeking enhancement methods of mental resilience.

The sources searched were based primarily on Pubmed database. Keywords such as "moral impasse", "mental resilience", "moral distress" and "covid-19" were used. The articles found, without timing, were 102 and here 13 were used. Inclusion criteria were the combination of Covid-19 and moral impasse and the creation of emotional resilience in healthcare sector.

Factors that contribute to healthcare workers' moral burnout are categorized into three classes: internal factors, external and clinical conditions (Jackson, 2007). The emergence of SARS-CoV-2 revealed new factors for instance the availability and management of limited resources, the lack of protection for themselves and their loved ones, the time and critical cases management, the end of life care, the communication skills between colleagues, the infections' prevention and the imposition of new health protocols, which, added to already existing areas though (Cacchione, 2020) (Falco-Pegueroles, 2020). The analysis of the factors and their treatment leads to the need to enhance the mental resilience of health care providers, which can be done at individual, interpersonal, but mainly at the administrative-organizational level (Institute for Healthcare Improvement, 2020). However, the most important thing for the implementation of changes is the organizational level as it is the background for the effective implementation of the above. It is necessary to clarify the moral values, the obstacles to their implementation in order to create a strategic plan for dealing with the them. It is characteristically reported than in an ICU nurses survey in the United Kingdom, 24.7 % had the belief they are ill and therefore got isolated the last four to six weeks, 17,2% suffered from depression while English healthcare system resilience relied on 65%, percentage which represents moderate to high health professionals' resilience (one of the top European rankings), whereas there is a rise in resilience equivalent to increasing people's age and work experience (Robertson, 2020).

Pandemic outcome constitutes the dominance of moral injury and moral impasse in the majority of health professionals with minor differences to caused factors. According to Karampelias (2020) there is fine line between preparedness and alarmism in healthcare sector and care crisis standards are activated. Educational support that provides information about dealing with moral distress during the coronavirus pandemic and how nurses should deal with ethical issues that may confront in the

everyday professional life is essential.(Malliarou et al, 2021) The essential and foremost interventions pertain to the perception of ethical problems by the health administration, the provision of understanding and solidarity to the clinical caregivers and their inclusion in the decision-making process but also the common response of the ethical issues that arise in the health sector both in times of crisis and in more general terms. However, the category of nurses, the largest health team in the world, is seldom included in administrative proceedings, although probably constitute the "solution" and have greater "experience" for any form of health impasse.

**Key Words:** health moral distress, covid-19 pandemic

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# EXPERIENCES OF HEALTH CARE PROVIDERS

## EXPERIENCES OF INTERNATIONALLY EDUCATED NURSES WHILE PREPARING FOR INTERNATIONAL NURSING LICENSURE EXAMINATION: IMPLICATIONS TO THE NURSING WORKFORCE

James Montegrigo  
The University of North Carolina at Charlotte  
Charlotte, United States of America  
e-mail: [jmontegr@uncc.edu](mailto:jmontegr@uncc.edu)

### ABSTRACT

Global nursing shortage created career paths for international nurse migration and the COVID-19 pandemic worsened the nursing shortage worldwide (International Council of Nurses [ICN], n.d.). During periods of critical nursing shortage, hiring of internationally educated nurses (IEN) became a common strategy to augment the nursing workforce of middle- to high-income countries (ICN, 2020). The United States (U.S.) comprises 20 percent of the world's nursing workforce (World Health Organization [WHO], 2020) and plays a crucial role in international nurse migration. About eight to 15 percent of U.S. nurses are either foreign-born or internationally educated (Smiley et al., 2021; WHO, 2020). IENs are required to pass the National Council Licensure Examination-Registered Nurses (NCLEX-RN) to practice nursing in the U.S. However, more than half of IEN who took the NCLEX-RN from 2003 to 2022 failed the exam (Montegrigo, 2021; NCSBN, 2022).

Almost all published studies on NCLEX-RN were conducted on U.S.-educated nurses since the exam was specifically designed to assess the competencies of U.S.-educated nurses. There is very limited research on the NCLEX-RN within the IEN population. This is the first study that investigated the NCLEX-RN preparatory experiences of IENs. The purpose of the study was to describe the experiences of IENs taking an international licensure examination, the NCLEX-RN, and their implications to the nursing workforce.

A qualitative descriptive research design was used to describe NCLEX-RN preparatory experiences of IENs. Participant recruitment was conducted online through professional nursing groups on social media. A total of 20 IENs were included in this study that indicated data saturation. Data collection was made through individual virtual interviews from June to July 2020. NVivo software was used to assist in identifying codes and themes. Thematic analysis was done using Creswell and Creswell's (2018) recommendations for data analysis. Trustworthiness of the study was assessed using Lincoln and Guba's (1986) guidelines. The Institutional Review Board of the University of North Carolina at Greensboro approved this research.

IENs had both positive and negative experiences while preparing for the NCLEX-RN. Themes generated from these experiences were related to contextual characteristics, presence of support, resources, academic preparation, employment, environmental, socio-cultural, political, and economic factors. Recommendations for individual IENs and nursing educational institutions internationally were provided to increase the chances of passing the NCLEX-RN.

IENs have unique contextual characteristics and experiences that may affect international licensure examinations outcomes. Addressing factors that hinder IENs' preparatory experiences may help in increasing their chances of passing international nursing examinations and may have positive nursing workforce implications. Human resource managers should consider these unique characteristics and experiences when assessing and hiring IENs' competencies, requirements, and qualifications for international nursing employment. The findings in this study have relevant implications to nursing education internationally and provide information that have significant nursing practice and regulatory implications. Further, as an area where limited research exists, results of this study provide a conceptual basis and direction for future research.

**Key Words:** nursing education, NCLEX-RN, nursing workforce, healthcare human resources.

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# HEALTHCARE WORKERS AND RESOURCE INTEGRATION: WHEN HEALTHCARE PROFESSIONALS CO-CREATE/CO-DESTROY VALUE WITH PATIENTS.

George Skourtis

Department of Tourism, Hospitality and Sports School of Business and Economics  
Deree-The American College of Greece  
Athens, Greece  
e-mail:

Chryssoula Chatzigeorgiou-  
International Hellenic University  
Thessaloniki, Greece  
e-mail:

Antonios Giannopoulos  
International Hellenic University  
Thessaloniki, Greece  
e-mail:

and

Ioanna Simeli  
Hellenic Open University  
Thessaloniki, Greece  
e-mail:

## ABSTRACT

This paper aims to explore why healthcare professionals (physicians, nurses and staff) might either co-create value for themselves and patients or just enhancing their well-being for themselves by co-creating value, while intentionally diminish value for patients in resource integration process. Building on S-D logic (Vargo and Lusch, 2016) Service Encounter Needs Theory (SENT) (Bradley et al., 2010), citizenship (extra-role) and service sabotage behaviour literature (Harris & Ogbonna, 2009) the authors seek to explore how the level (high or low) of engagement in customer value co-creation behaviour may lead to professionals' extra role or service sabotage behaviour through the fulfilment or violation of their psychosocial needs respectively described by SENT. This study draws attention to the resource integration process from the human resources' perspective based on SENT. Building upon value co-creation/co-destruction in S-D logic and employee citizenship (Yi and Gong, 2012) and service sabotage behaviour literature, it proposes a conceptual perspective as to explore the role of healthcare professionals in patients' resource integration process. The findings suggest that fulfilment or violation of healthcare professionals' psychosocial needs in resource-integration process may lead to patient value co-creation or co-destruction process respectively and thus either enhance or diminish their well-being. Our paper provides insights into how healthcare professionals co-create and co-destroy patients' well-being in practice, describing the extra-role and sabotage behaviours and their drivers while in parallel providing explanations to help practitioners minimize these potentially damaging behaviours. This is the first study to explore why health care professionals during resource integration might intentionally diminish value for patients and consequently their well-being. By doing so, we add on both value co-creation and value co-destruction literature within S-D logic framework.



**Key Words:** health care workers, patients

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# STUDY OF VIEWS, ATTITUDES AND INTENTIONS OF USING NEUROMARKETING IN PRIMARY EDUCATION UNITS: THE ROLE OF STUDENTS' PSYCHOPHYSIOLOGICAL STATE ON THE QUALITY OF THE EDUCATIONAL PROCESS

Athanasia Panagiotidou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [at.panagiotidou@gmail.com](mailto:at.panagiotidou@gmail.com)

Chryssoula Chatzigeorgiou  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [cchatzigeorgiou@ihu.gr](mailto:cchatzigeorgiou@ihu.gr)

and

Nikos Panagiotidis  
University of Ioannina  
Ioannina, Greece  
e-mail: [panagiotidissnikos@gmail.com](mailto:panagiotidissnikos@gmail.com)

## ABSTRACT

In recent decades education has faced a series of challenges due to changes in social, economic and political level. Education is therefore called to find solutions to major issues which come from the combination of knowledge, methodologies and technologies from different sciences. Neuromarketing is a new field of research that can provide education with innovative solutions and ideas in order to improve its quality and services (Ababkova & Leontieva, 2018).

But what does neuromarketing really mean and where did it come from? From time to time many definitions have been formulated about what neuromarketing is. One such definition indicates that neuromarketing is a part of marketing that uses and leverages neuroscience findings. More specifically, it is a field of research aimed at gathering scientific knowledge based on brain reactions (Fisher, Chin & Klitzman, 2010). Another approach argues that neuromarketing is a combination of two or more sciences. Hubert and Kenning (2008) associate neuromarketing with the sciences of consumer behavior and cognitive neuroscience while others consider neuromarketing to be an emerging field of research that combines psychology with neuroscience and marketing (Sebastian, 2014. Gurgu, Gurgu & Tonis, 2020). However, the majority of researchers argue that neuromarketing results from the connection between neuroscience and marketing (Fisher et al., 2010. Morin, 2011).

Nevertheless the main question is: how can neuromarketing be applied in education? If we try to define the educational process as a tool of the marketing mix, we would say that it refers to both the mental and the emotional and physical involvement of students during the teaching methods and techniques that take place in the classroom. In addition, through the application of neuromarketing in education it is possible to obtain a continuous feedback on what is happening to students, which ultimately contributes to the continuous improvement of the quality of the educational process in order to adapt as much as possible to the individual requirements of students (Ababkova & Leontieva, 2018).

One of the most promising neurotechnologies in the sphere of education is the method of biological feedback (BFB) based on studying the current psychophysiological state of students and using this information for further correction of the educational process, improving its quality and efficiency (Ababkova, Leontieva, Borshchevskaia & Pokrovskaja, 2019). So, it is obvious that through the evaluation of psychological and physiological indicators of students using appropriate techniques (biometrics), the quality of teaching could be enhanced.

The purpose of this study is to study the knowledge, attitudes, expectations and intentions of the use of neuromarketing by primary education units. The sample consisted of 122 primary school teachers and more specifically 68 teachers and 54 kindergarten teachers. The questionnaire was based on the study of Eser, Isin and Tolon (2011) on the perceptions of academics, neurologists and marketing professionals about neuromarketing. It includes six sections with the first referring to the teachers' knowledge about neuromarketing, the second to their views, the third to their attitudes, the fourth to their intentions to use, the fifth to their expectations and finally, the sixth refers to the demographics of the respondents. A 5-point Likert scale (where 1 = Strongly Disagree, 5 = Strongly Agree) was used to measure the answers to emphasize the intensity of the choices and to be able to compare them.

The results showed that the teachers stated a moderate level of knowledge about what neuromarketing is but high levels of positive attitudes towards the use of neuromarketing in teaching. In addition, educators seemed to have high expectations of using neuromarketing as they believed in its benefits. Furthermore, teachers believe that the use of biometric techniques in teaching can be useful in capturing the current psychophysiological state of students during the lesson in order for the educational process to be improved.

**Key Words:** neuromarketing, teachers, education, physiological state.

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## JOB RELATED BURNOUT, CUSTOMER SATISFACTION AND RETENTION IN PRIVATE HEALTH CARE PROVIDERS

Dimitrios Theocharis  
MSc, PhD candidate, International Hellenic University Department  
of Organization Management, Marketing & Tourism  
Thessaloniki, Greece  
e-mail: [dim.theocharis@yahoo.gr](mailto:dim.theocharis@yahoo.gr)

Ioanna Grigoriadou  
MSc, PhD candidate, International Hellenic University Department  
of Organization Management, Marketing & Tourism  
Thessaloniki, Greece  
e-mail: [ioanna.grig@outlook.com](mailto:ioanna.grig@outlook.com)

Greta Hoxha  
MSc in Health & Welfare Management Units  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [iwannachotza@gmail.com](mailto:iwannachotza@gmail.com)

and

Dr. Georgios Tsekouropoulos  
Assistant Professor, International Hellenic University  
Department of Organization Management, Marketing & Tourism  
Thessaloniki, Greece  
e-mail: [geotsek@bua.teithe.gr](mailto:geotsek@bua.teithe.gr)

### ABSTRACT

Professionals in the healthcare field are in situations that could develop burnout syndrome. Variables which intervene and influence the appearance of this syndrome are self-esteem, social support, and empathy (Molero Jurado et al., 2018). Most exposed to complicated situations that can generate tension are healthcare professionals. They have to deal with people who suffer from health problems and their families on a daily basis (Fernández-Guzmán et al., 2012). These situations can lead to increased stress and what is known as the burnout syndrome. Burnout is related to sociodemographic variables, such as gender, age or years of professional experience, and so forth (Betancur et al., 2012). With regard to gender, some authors underline its higher prevalence in women than in men (Ballester-Arnal et al., 2016), while others show higher levels of burnout in men than in women (Pera and Serra-Prat, 2002), and finally, Peralta-Ayala and Moya (2017) did not find any gender differences in burnout. Additionally, burnout has been connected with employee performance and other performance related variables such as customer satisfaction and retention (Nesher Shoshan & Sonnentag, 2020; Erp, 2021). During the pandemic, private health care providers experience high levels of pressure by the external environment and the customers who were asking for additional services within a limited time frame. As a result, health care personnel forced to work extra hours with added effort to cover the needs of the customers. This situation had significant impact on several job-related metrics such as burnout levels and performance. The aim of the current research is to investigate the relationship between employee burnout, customer satisfaction and retention in private health care units. This quantitative research was taken place during January 2022, on a sample of 75 health care employees and 75 customers. Convenience sampling was selected as the sampling method and the analysis was made with SPSS. The findings among others show that employees on private health care organizations have medium levels of burnout despite the difficult circumstances under which they are working, as well as there is a negative medium relationship between job burnout and customer satisfaction ( $r = -.503$ ) and a weak also negative relationship with customer retention ( $r = -.303$ ). Thus, the higher the levels of burnout, the lower the levels customer satisfaction and customer retention. In conclusion, private health care units have to find ways to reduce job related burnout in order to achieve higher customer satisfaction and retain their customers.

**Key Words:** Burnout, Health care, Private sector, Customer satisfaction, Customer retention.

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# POLICIES AND QUALITY ASSURANCE IN HEALTH CARE MANAGEMENT

## DIAGNOSIS RELATED GROUPS (DRGS) AS A FINANCIAL MANAGEMENT TOOL: A CASE STUDY ON SURGICAL ONCOLOGICAL CASES IN PUBLIC HOSPITAL

Anastasios P. Dardogiannos  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [pdardogiannos@gmail.com](mailto:pdardogiannos@gmail.com)

and

Stefanos E. Karakolias  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [stefkara@bua.teithe.gr](mailto:stefkara@bua.teithe.gr)

### ABSTRACT

Diagnosis Related Groups (DRGs) constitute the dominant hospital remuneration scheme in most developed countries. Incorporating cost-containment and financial management aspects, DRGs are listed among the most critical healthcare reforms over the last decades (Bredenkamp et al., 2019; Van Herwaarden et al., 2020). At the beginning of 2012 DRGs were firstly introduced in Greece, widely known as “KEN”. There was an undoubted haste to implement the new reimbursement system and therefore pricing was based on activity-based costing applied only in selected public hospitals combined with arbitrarily imported cost weights, instead of using actual costs and clinical protocols. In other words, only macro-costing techniques were applied (Polyzos et al., 2013). As such, KEN are neither comprehensive nor precise in terms of cost elements resulting in several cases of under-estimation of cost and misclassifications (Panagiotopoulos et al., 2020). Against this background this study aimed at assessing the implementation of DRGs in Greece with a focus on surgical oncological cases and investigating its overall robustness as a hospital financial management tool.

This study included the entire set of discharges from surgical departments of the “Theagenio” Anticancer Hospital of Thessaloniki in 2019, a summary of which is represented in Table 1. The analysis was quantitative and we used the Microsoft Excel statistical analysis toolkit.

**Table 1**  
**Summary description of cases**

N o of surgical cases	Total length of stay (in days)	No of cases aligned with the Average Length of Stay (ALoS)	No of cases exceeding the ALoS	KEN revenue (in €)	Outlier payments (hospitalization, drugs, materials & medical procedures)
6, 100	23,828	3,536 (58%)	2,564 (42%)	5,172, 524	1,240,863.14 (19.3%)

To a large extent the reimbursement values of the examined KEN as well as their standard length of stay strongly deviate from the actual figures leading to a simple proposal already made by other researchers: the application of micro-costing techniques better reflects the actual cost of treatment (Siskou et al., 2014). There are both particular KEN and larger categories (eg.TKA23X) to be assessed

by the hospital management and re-evaluated by the National Organization for Healthcare Provision (EOPYY). We also observed misclassifications hidden under the usual practice at public hospitals to link the vast majority of cases to few KEN codes or even a single one. The analysis also revealed differences in productivity and efficiency among surgical departments.

It is rather complicated to assess the KEN system as a genuine DRG system as it has not followed its basic principles (cost weight, base rate, case mix index). The existing system intended to limit purchases without combining remuneration with efficiency and effectiveness. However, the upcoming Gr-DRG system could be used as an important tool for coordinating financial management in Greek hospitals, presupposing the development of controlling and monitoring processes, internal and external comparison of hospitals (benchmarking), and adaptation of production processes for the benefit of the patient and the hospital. Moreover, the major challenge is that the DRG system motivates providers to reduce costs, which maybe will not stem from raise in technical and allocative efficiency, but rather from low access to necessary services and/or deterioration in quality. Thus, the new system should “reward” high-performance and high-profile hospitals treating more complex cases.

**Key Words:** DiagnosisRelated Groups, Remuneration, Hospitals, Surgical oncological cases.

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# THE IMPACT OF MAINTENANCE MANAGEMENT ON THE WORKING ENVIRONMENT OF HEALTH UNITS

Anthitsa G. Pappa  
University Hospital of Ioannina  
Ioannina, Greece  
e-mail: [anthipappa7@gmail.com](mailto:anthipappa7@gmail.com)

and

Soultana (Tania) Kapiki  
International Hellenic University  
Thessaloniki, Greece  
e-mail: [tkapiki@ihu.gr](mailto:tkapiki@ihu.gr)

## ABSTRACT

The purpose of this paper is to investigate the practices, policies and strategies of the maintenance management applied in the Greek health units, as well as its effects, positive or negative, on the working environment of the total health staff employed by them.

Apart from the building structure, the study focuses on the investigation of variables that determine the working environment such as infrastructure, lighting, air circulation in the workplace, proper and reliable operation of mechanical and medical equipment, as well as on the relationship between the management of the health unit and the staff members. Other issues addressed in the study are: understanding the strategies in maintenance management of health units and ways that new technological means can improve the organization of the maintenance department. In addition, it is examined whether energy upgrades to health facilities can affect both the working environment and the natural environment. The survey took place from 15/10/2021 to 04/01/2022, and it was conducted via on-line questionnaires distributed to the recipients through hospital websites and nursing online groups all over Greece. The sample consists of 102 staff members (doctors, nurses, administrative staff and technicians) working in public and private health units. The questionnaire includes closed-ended multiple-choice questions from the "Homogeneous Employee Subjective Assessment Questionnaire", which has been used by ELINYAE (Hellenic Institute of Health and Safety at Work) and consists of 4 main parts with a set of 48 questions. The analysis of the answers was performed with the Microsoft Excel program.

The main findings of the survey are as follows: 1) *Relationship between the working environment and the performance of employees in health units*: the majority of the respondents are satisfied with the environmental conditions (ventilation, temperature) and the building infrastructure (quantity and quality of air, lighting). Moreover, they believe their workplace is sufficient for the performance of their duties. Nevertheless, only 44% of the respondents have been trained in the use of computers and medical technological equipment. The most stressing factors are considered to be the failures and interruptions in technological equipment as well as the lack of training in dealing with and preventing hazards that exist or arise from the working environment. 2) *Adaptation of maintenance management to the complexity and the specific requirements of contemporary health units*: 65% of the sample considers that there is a need for changes in both technological and building equipment, and 61% believe that maintenance management is unable to adapt to modern technological requirements. 3) *The role of administration towards efficiency and reliability of maintenance*: 60% of the participants believe that there is a relatively effective communication between the maintenance department and other departments, while almost 54% consider that there is partial confidence in the ability of the administration to handle maintenance and security issues effectively. Furthermore, 62% of the participants express their dissatisfaction with the extent to which their work is burdened by any delay in the maintenance of the equipment. 4) *Improving the organization and operation of the maintenance department through technology*: 93% answered it would be more efficient to use a fully computerized system as well as energy saving systems for recording and monitoring maintenance activities. The above findings show that a properly organized, effectively managed and technologically advanced maintenance department can affect significantly and improve the daily routine, the working environment, the natural environment and, certainly, the successful operation of the Greek health units.



It is recommended that the maintenance department have sufficient funds so that it can carry out mechanical equipment replacement, renewal of medical equipment and renovation of building facilities. These in turn will have a positive impact on the working environment. In addition, the administration should continuously train staff members who operate medical equipment, in order to prevent accidents and infections and reduce work stress. Finally, maintenance management should apply environmental policies and strategies investing in energy upgrades of health units and using sustainable energy sources and methods.

**Key Words:** Health units, maintenance management, working environment, sustainable energy sources.

## EXPLORING ADMINISTRATIVE AND FINANCIAL MANAGEMENT OF CLINICAL TRIALS IN UNIVERSITY HOSPITAL: A CASE STUDY.

Maria Eleftheriadou  
MSc of Health Care Management  
Head of Independent Department of Quality Control  
Research and Continuing Education  
Ahepa University Hospital of Thessaloniki  
Thessaloniki, Greece  
e-mail: [elmarianna@hotmail.com](mailto:elmarianna@hotmail.com)

### ABSTRACT

University hospitals are legal entities under public law, which are part of the National Health System (NHS) as tertiary health units and their operation covers three areas of public sector benefits, health services, education (Θανάσας, Γ.2012) and research. As for the health services sector, they are under the supervision of the Ministry of Health, while in the education and research services sector they are in close cooperation with the Ministry of Education as they house university medical school clinics. The national character of the NHS requires effective management of resources (Νιάνκας, Δ., 2013) for the benefit of society as a whole, quality of health services provided and protection of patient safety and dignity.

This empirical, retrospective "case study" attempts to present administrative and financial issues related to the management of clinical trials in a university hospital of the country and to contribute to the creation of a management model for the clinical research sector. In particular, it aims to highlight the need to adhere to the principles of management (Fayol, H. 1916) and utilization of new technologies (Παπαδάκη, Α. 2015), for the efficient and effective operation of the hospital, through the clinical trials sector as this sector has an autonomy in the operation of the hospital with financial dimensions (Κοσμίδης, Δ., & Θεοφανίδης, Δ. 2021).

The study was based on the collection and analysis of data (Mandel, 2012) related to clinical trials conducted at a university hospital. The statistical processing of the results was done with the statistical program SPSS 25.0.

The collected data indicate that a large number of clinical trials are conducted at hospital. Specifically, during the period from June 2013 to December 2019, 400 studies were conducted by 17 clinical departments of the hospital. 90.2% of clinical trials were carried out by scientific staff and were managed by ELKE, while 9.8% are carried out by NSS medical staff and were managed ELKEA (ν.3794/2009). Intervention clinical trials accounted for 36.5% of all trials. Funded studies accounted for 59.2% of all studies. Each funded clinical study must attribute to the hospital a percentage of 15% of the budget of the study, gradually until its completion. Since June 2019, each clinical study had also the obligation, of payment to the hospital the amount of € 500.00, as file examination cost. The expected revenue for the hospital from the clinical trials amounting to € 2.169.842, 247.

From the results of the research, it was not possible to confirm the collection of the expected revenues per clinical study and in general to evaluate the overall benefit of the hospital from the research sector, using efficiency and effectiveness indicators, due to non-application of management tools and IT systems.

The research highlighted the lack of design and implementation of appropriate tools for administrative and financial control of clinical trials. The conclusions of the study, through the identification of management weaknesses, could contribute to the utilization of the field of clinical trials, so that the increase of scientific knowledge and the provision of advanced health care (Donabedian, A. 1988) works in parallel for the benefit of overall efficiency and effectiveness in hospital operation

**Key Words:** University Hospital, clinical studies, economics management, administrative management, National Health System.

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# HEALTHCARE SYSTEM'S UNDERSTAFFING DURING THE PANDEMIC AND NON- COVID HEALTH PROBLEMS.

Dora V. Fellia  
Hellenic Open University  
Thessaloniki, Greece  
e-mail: [dora.fellia@gmail.com](mailto:dora.fellia@gmail.com)

## ABSTRACT

Two years after the beginning of the pandemic, there is a reasonable consideration about the ways that the States decided to manage the health crisis itself, but also for the consequences of that crisis. The consequences in the economy became rapidly noticeable, but the rest of the consequences are under study, since day one and will continue to be studied in the future. The rest of the consequences are about whether there was success of health management during the pandemic period or not, especially on the corona cases. The consideration is also about the damage caused on all the other diseases in the same period, including mental illness (Gheorghe et al., 2021, editorial Lancet, 2020, Nochaiwong et al., 2020).

The main purpose of this paper was to point out the chronic shortages in the field of health care provision and how these shortages effected the fight with the new corona virus. There was a literature review with most attention been given to the latest researches, aiming to understand the result of the hospital's malfunction and the overall health care system's malfunction. An additional purpose was the research of international literature about the impact of the suspension of all non-emergency services, on main chronic diseases such as cancer, diabetes and cardiovascular diseases.

Patients with kidney disease found to be in greater danger due to covid-19 and covid-19 found to effect negatively kidney function, at seriously ill patients (Bruchfeld, 2020). Kidney transplants decreased significantly the same period, such as organ transplants generally in most of the countries (Aubert et al. (2021). According to European Society of Cardiology, people with hurt attack that looked for emergency care was decreased 50%, with many of the patients run a bigger risk of dying (Hall, 2020).

There was a significant reduction in disease's diagnosis, due to the decrease in the doctors' visits and also the lower number of performed screening processes (Morris et al., 2021). There was also a major increase in the discomfort of cancer patients due to the restrictions (Hamilton, 2020) and emotional and physical burden increase for diabetes patients (Forde et al., 2020). Another important finding was that in Greece there was an increase of deaths in emergency surgeries, that were supposed to continue operating normally. Finally in Greece there was a great number of life losses reasoned by the insufficient health care system function and also because of the uneven resource allocation between the capital of Greece and the rest of the country (Lytras & Tsiodras, 2021).

The consequences for people's overall health and wellbeing, during the pandemic, were tremendous. The main health care system's goal was to manage properly covid-19 patients, a goal that in Greece wasn't accomplished, based on the great number of deaths related to the disease. The review results showed that there is a great need in supporting health care system and also for felling the gups in healthcare workers. Health care workers had been always fighting for better primary care, with the patient in the centre and with main purpose early diagnosis and treatment. Pandemic could be a chance to empower primary care services, but instead of that, patient and doctor's relationship got many more obstacles than before. It is important to facilitate a strong network of primary health care to provide services of health promotion and wellbeing for the people.

**Key Words:** health care systems, non-covid health problems.

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## PUBLIC HEALTH POLICIES REGARDING THE COVID-19 PANDEMIC MANAGEMENT

Olga Vasilaki, Md,Msc, PhD  
Registrar A' Dept.of Microbiology Ahepa University Hospital  
Msc,in Health and welfare management units, International Hellenic Univ.  
Phd, Medical school, Aristotle University of Thessaloniki  
e-mail:[oliavasilakikarozi@gmail.com](mailto:oliavasilakikarozi@gmail.com)

Stergiani Spyrou, PhD  
Postdoctoral Researcher Researcher Lab of Medical Physics  
School of Medicine Aristotle University of Thessaloniki  
International Hellenic University  
3rd Regional Health Authority of Macedonia, Thessaloniki, Greece  
e-mail:[ssspyrou@gmail.com](mailto:ssspyrou@gmail.com)

and

Chryssoula Chatzigeorgiou, PhD  
Associate Professor of Thessaloniki  
International Hellenic University  
e-mail:[cchatzigeorgiou@ihu.gr](mailto:cchatzigeorgiou@ihu.gr)

### ABSTRACT

The high contagiousness of the SARS-CoV-2, the large proportion of the population at risk of serious illness which will require hospital care and, certainly, the necessary need to protect public health has led countries worldwide to quickly resolve measures.

Public health policies regarding the COVID-19 pandemic management of Australia, New Zealand, Singapore, Finland and Iceland.

A narrative literature review was conducted. The evaluation of the effectiveness of the countries' health policies was carried out using three indicators: the Case Fatality Rate (CFR), the number of cases and the number of deaths per 100,000 people.

The very fast response of the governments, the strict lockdown, the quarantine measures, the travel restrictions, the systematic testing, tracing and epidemiological surveillance, the effective communication between officials and citizens, the government's response to COVID-19 focused on allowing the relevant experts to convey important information directly to the public, the testing of older people and health professionals and the mobile tracing applications compose the most important public health interventions. All these measures combined with the adoption and implementation by the citizens and with the organization of health systems, resulted in better management of the pandemic in the countries under study.

These measures have undoubtedly been important public health policies, which are a testament to future responses to such pandemics. In future studies, we recommend due to the evaluation of the effectiveness of the countries' health policies, to select and use more indicators other than the three which our study was based on.

**Key Words:** Australia, COVID-19, Finland, Iceland, New Zealand, Public health policies, pandemic, Singapore.

# THE IMPACT OF HOSPITAL INFECTIONS ON PATIENT SAFETY, A SYSTEMATIC REVIEW IN THE ERA OF BIG DATA.

Vasileios Georgakis, PhD(c)  
Department of Statistics and Insurance Science  
School of Finance and Statistics  
University Of Piraeus  
Piraeus, Greece  
e-mail: [vasilisgeorgakis@ldype.gov.gr](mailto:vasilisgeorgakis@ldype.gov.gr)

and

Panos Xenos  
Assistant Professor  
Department of Statistics and Insurance Science  
School of Finance and Statistics  
University Of Piraeus  
Piraeus, Greece  
e-mail: [pxenos@unipi.gr](mailto:pxenos@unipi.gr)

## ABSTRACT

The leading current scientific development with remarkable applications in the field of administration and health economics is the use of Big Data. New methods of utilization such as Data Mining or Machine learning are an important tool with which we can create the right conditions for an effective and successful management of the multiple risks faced by health organizations (Subrahmanya et al 2021). This will also a specific benefit for patient safety which is an important priority of healthcare management (Noone and Wacławski 2018).

Big data are simple elements that, if processed accordingly, turn into useful information. When we refer to health data, we are referring to simple knowledge that may be present in administrative archives or to clinical data that may be present in patient records. This information may have arisen from questionnaires and other research tools (Ristevsk and Chen 2018) . The primary reference to them was in 1997 by NASA researchers Michael Cox and David Ellsworth, however, scientific interest has focused on them since 2003 (Cox and Ellsworth 1997) .

The analysis of this data is usually performed by specialized users and can produce excellent results. Their characteristics are mentioned in the literature as 8vs. Specifically, it is about the value, volume, velocity, virality, variety, veracity, variability, and the viscosity (Zanoon et al 2017). Value is important for healthcare Risk Management with a lot of advantages for patients as well as for the leadership of organizations. In this paper, we also intensify the management of hospital infections, which is one of the most important clinical and administrative problems of patient safety (Carol 2009) .

Nosocomial are called the infections that are not pre-existing in the incubation stage of a disease but developed approximately 48 hours after the patient is admitted to the hospital. They do not appear only during the hospitalization but often appear up to five days after the patients leave the pathology clinics or up to 30 days after the surgery operation (Monegro et al 2022).

The problem of nosocomial infections is one of the most important public health problems. The most important consequence is that it increases the two most important epidemiological indicators, mortality and morbidity, as well as the costs of care. According to official figures, 5% to 10% of patients admitted to hospitals develop at least one nosocomial infection. This extends the duration of hospitalization approximately by 10 days and this in turn triggers the compensation (Zimlichman et al 2013) .

According to the literature, with the (use of statistical mechanical learning we can create predictive models, utilizing data and variables that are collected during the hospitalization of patients. There are



many methods and models that are used, for example, logistic regression and the Artificial Neural Network (Navdeep 2019). There are many statistical packages for their application, some of which, such as the R programming are user-friendly and are available for free on the internet (Chang 2011).

**Key Words:** Big Data, Hospital Infections, Healthcare Risk Management, logistic Regression, ANN.

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## LEGAL ISSUES REGARDING THE APPLICATIONS OF ARTIFICIAL INTELLIGENCE IN MEDICINE

Kalliopi Kalampouka  
Prof. of Commercial Law  
International Hellenic University  
Dept. of Accounting and Finance, Greece  
email : [pkalab@af.ihu.gr](mailto:pkalab@af.ihu.gr)

### ABSTRACT

The purpose of this study is to identify and analyze the legal issues arising from the use and application of artificial intelligence in medicine.

Technology is making rapid progress in all areas and of course medicine could not be absent from them. Utilization of technology in medicine aims at a more complete understanding of the human body and the application of innovative techniques that ensure individualized prevention and treatment in a variety of cases.

Precision medicine, the mapping of the human genome and the use of artificial intelligence through robotic medicine are pioneering developments, which, however, raise many questions both in terms of ethics and in terms of their legal treatment. These questions have to do on the one hand with the protection of personal data and on the other hand with a possible violation of human rights but also the legal consequences of the civil liability of the so-called electronic persons.

One issue that is already on the minds of legal scientists is the responsibility for the actions of artificial intelligence machines. The use of robots in medical practice is now commonplace in many fields, so their possible legal recognition is a burning issue and generates much discussion and trend in theory. The question that arises is what is the legal position of electronic persons and whether they should be considered bodies of rights and obligations, in the context of their growing autonomy, which can lead to acts and omissions that will cause damage to third parties.

**Key Words :** artificial intelligence, civil liability, e-person, medicine, bioethics.