

## Abstracts



# ABSTRACTS FROM THE 7<sup>TH</sup> ESNO CONGRESS: GREEN FUTURE, HEALTH WORKPLACE – NURSE SPECIALIST LEADING THE WAY

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## A SYSTEMATIC REVIEW OF NURSING COMPETENCIES: ADDRESSING THE CHALLENGES OF EVOLVING HEALTHCARE SYSTEMS AND DEMOGRAPHIC CHANGES

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**Background:** The role of nurses is poised to undergo significant transformations in the forthcoming years due to rapidly evolving sociocultural, environmental, and technological phenomena. Defining and assessing nursing competencies are crucial for ensuring quality nursing care and fostering professional growth. This literature review aimed to explore future nursing competencies and the sociocultural phenomena shaping them.

**Methods:** A systematic search was conducted in PubMed, CINAHL, Scopus and Web of Science databases using keywords such as “nursing competencies,” “future,” “healthcare systems,” and “demographic change.” Studies published within the last 5 years were included and underwent rigorous quality assessment.

**Results:** The findings indicate that phenomena such as environmental sustainability, technology, innovation, globalization, urbanization, uncertain policies, and demographic evolution will significantly impact nursing competency development. Projections suggest that

nearly 70% of the nursing workforce will operate in areas marked by high uncertainty and unpredictability. The review underscores the importance of cultivating interpersonal, higher-order cognitive, and system-level competencies, along with complementary skills in personal and customer services, decision-making, technology, creativity, and the scientific method.

**Conclusions:** Addressing future challenges in nursing requires a holistic and strategic approach. This entails a cultural shift within the profession, supported by targeted policies and investments in training and continuous professional development. Education and training systems must prioritize the development of “structural” competencies and lifelong learning capacities.

**Key Words:** Nursing competencies; Future; Healthcare systems; Demographic change; Sociocultural phenomena.

## ADAPTING THE FUNDAMENTALS OF CARE FRAMEWORK TO IMPROVE NURSING CARE IN CLOISTERED COMMUNITIES: A STUDY IN ITALIAN MONASTERIES

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**Background:** The “Fundamentals of Care Framework (FoC)” defines essential nursing care as activities that

place the patient at the center of care, ensuring respect and attention to their needs. The health of elderly individuals, nuns in our case, in closed communities, requires an approach that integrates physical and spiritual needs. In these settings, the Family and Community Nurse has to address complex necessities related to frailty and chronic comorbidities, while respecting spiritual traditions and existing physical barriers. The aim of the study is to analyze the nursing care of a community of cloistered nuns in Italy, using the FoC Framework.

**Methods:** A qualitative study using semi-structured interviews was utilized. The interviews with the 8 cloistered nuns were content analysed to identify categories and themes.

**Results:** Two main themes emerge. 1) Frailty and chronic conditions: Initial observations suggest that integrating the FoC Framework may contribute to a more structured approach to addressing both physical and spiritual well-being among the nuns. 2) Perception of care: The nuns have preliminarily reported a sense of increased support and safety, along with a growing awareness of the importance of fundamentals of care in their daily lives.

**Conclusions:** The use of the FoC Framework in closed community settings, such as monasteries, appears promising in enhancing care quality by adapting global principles to specific local needs. Preliminary observations suggest that this approach could offer tangible benefits for the nuns, highlighting the importance of integrating international standards with local adaptations to innovate nursing care and address the physical, psychological, and spiritual dimensions of health.

**Key Words:** Fundamental of Care Framework, Nursing Care; Cloistered communities; Family and community nurse; Chronic conditions; Qualitative study; Holistic care.

## ANALYSIS OF HOUSEHOLD WASTE DISCARDED BY HEALTH INSTITUTIONS IN CHILE: A DESCRIPTIVE STUDY

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**Background:** Approximately 60% of waste considered as household waste discarded by health institutions is recyclable. In Chile, there is no detailed analysis

of the quantity of waste directed to landfills. This descriptive study aims to understand the national reality of household waste discarded and reported by health institutions, evaluating how many of them report on the recycling of this waste.

**Methods:** Open data from the Ministry of Environment for the years 2018 - 2022, published by the National Waste Generation Service (SINADER), was reviewed, filtering the analysis for health institutions. Any waste declared for recycling or pre-treatment, without subsequent elimination, was considered as valorization.

**Results:** 162 health establishments reported their waste (3.6% of those existing in Chile), totaling 291,324.57 tons in the analyzed period. Of these centers, 42 reported performing some type of recycling, with the maximum valorized by a health institution being 13.6%. 38% of these centers are public institutions, and 54% belong to regions outside the Metropolitan Region. There is a significant gap in the declaration of household waste, making it important to understand the local reality of each center to know what strategies they use to minimize eliminated waste. Chile succeeds in managing about 2% of its waste sustainably, while countries like Italy manage 34%. To reach international standards, this number must be increased at least 5 times.

**Conclusions:** Considering the recycling potential of up to 60%, this study reveals for the first time the recycling gap in Chilean health institutions. The need for greater coordination between units and with the center's management is crucial for the success of the recycling program and to close this gap, thus promoting sustainable practices in the health sector.

**Key Words:** Medical waste disposal; Waste management; Recycling; Environmental health; Chile.

## AUDITORY HALLUCINATIONS SIMULATION IN MENTAL HEALTH NURSING EDUCATION - FINDINGS FROM A SCOPING REVIEW

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**Background:** Mental health education is crucial to address the daily challenges related to this specific type of patient. Generally, nursing students acquire

knowledge about auditory hallucinations through classroom lectures before engaging in clinical practice; however, their understanding of the potential experiences of patients remains limited. Simulation is considered a valid approach to replicating authentic scenarios within a safe environment, especially in the context of mental health, where hallucinations can lead to aggressive behavior, violence, suicide, and self-harm. This study aims to identify the state of the art of nursing simulation for patients with mental health problems presenting auditory hallucinations. Specifically, it aims to identify outcomes studied in the literature, existing tools used to simulate auditory hallucinations, the effectiveness of such methodology and tools, and learners' experience and satisfaction.

**Methods:** A scoping review was performed following the Arksey & O'Malley framework and integrating relevant aspects of the Johanna Briggs Institute methodology for scoping review. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis extension for Scoping Reviews (PRISMA-ScR) was followed for reporting. Quality appraisal and meaningful quotes meta-synthesis were also performed.

**Results:** In 10 of the 13 included studies, nursing students wore headphones that played audio imitating auditory hallucinations and then assigned to complete specific activities. Retrieved evidence suggests the effectiveness of the methodology and high student satisfaction. However, in a small number of cases the impact of the simulation was so emotionally strong that overwhelmed some learners, causing physical discomfort, slight anxiety and sleep disturbances.

**Conclusions:** Nursing educators are called upon to carefully choose these simulation tools, focusing specifically on their content regarding voice characteristics and the potential students' vulnerabilities.

**Key Words:** Auditory hallucinations; Hallucination simulation; Nursing education; Mental health; Advanced education.

## CLUSTERING SELF-EFFICACY IN NUTRITIONAL CARE AMONG ITALIAN NURSES: A SINGLE-CENTER PILOT STUDY

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**Background:** The growing worldwide population of elderly individuals, particularly susceptible to nutritional deficiencies, underscores the necessity for effective, patient-centred nutritional care. Nurses play a pivotal role in ensuring high-quality nutritional care through their involvement in screening, assessment, planning, and monitoring. Inadequate self-efficacy limits nurses' potential in this area. However, no studies have explored nurses' self-efficacy behaviours in the nutritional care of the elderly through a clustering approach.

**Methods:** This pilot study investigated clustering solutions based on nurses' self-efficacy in nutritional care and key demographic factors. Data were cross-sectionally collected from 77 nurses working in two tertiary hospitals in northern Italy, following a power analysis employing a Monte Carlo simulation with a hypothesized difference among self-efficacy scores between clusters of at least Cohen's  $d = 1.0$ . Self-efficacy was assessed using the validated Self-Efficacy Scale for Nursing Nutritional Care alongside demographic and professional variables. Clusters were identified utilizing hierarchical clustering following t-distributed Stochastic Neighbor Embedding (t-SNE) information reduction, and the solution was validated using Multiple Correspondence Analysis.

**Results:** Two clusters with adequate silhouette widths were identified. Cluster 1, labelled "Experienced Nurses with Low to Moderate Self-Efficacy," included older nurses with a mean age of 47.43 years and more work experience (mean total work experience of 23.43 years) but lower self-efficacy scores. Cluster 2, labelled "Younger and Confident Nurses," comprised younger nurses with a mean age of 30.87 years and less work experience (mean total work experience of 7.13 years) but higher self-efficacy scores.

**Conclusions:** This study provides novel insights into subgroup differences in self-efficacy among nurses, identifying two distinct clusters. The results highlight the feasibility of clustering approaches for examining self-efficacy in nutritional care, providing critical groundwork for hypothesis generation and informing future research. Further, this study emphasizes the need for targeted interventions tailored to specific professional profiles.

**Key Words:** Care; Evaluation research; Evidence-based practice; Health; Health promotion; Nurse - patient interaction; Nurse roles; Nutrition; Older people.

## EFFECTIVENESS OF VIRTUAL REALITY AND BUZZY® DEVICE IN REDUCING PAIN AND ANXIETY DURING PEDIATRIC VENIPUNCTURE

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**Background:** Venipuncture is a procedure for blood sampling and therapy but challenging in pediatric patients due to anxiety and low cooperation. Difficult vein access can cause pain, complications, and distress for children and parents. Needle procedures often lead to lasting psychological effects like needle phobia and increased pain sensitivity. Non-pharmacological strategies, including audio-visual distraction and cryotherapy, help reduce pain and stress, but data on effectiveness, procedure duration, and economic impact remain limited.

**Methods:** This randomized, controlled, single-blind study evaluates the effectiveness of Virtual Reality (VR) and Buzzy® (vibration and cryotherapy device) compared to standard care venipuncture at a Northern Italy pediatric unit. Children aged 3 to 17 years will be randomly assigned to VR, Buzzy®, or Standard Care. In the VR group, patients will wear VR goggles and headphones two minutes before venipuncture, watching a 3D animated video until 10 minutes post-procedure. In the Buzzy® group, the device will be applied 60 seconds before venipuncture, then repositioned 3–5 cm above the puncture site and kept in place for 10 minutes post-procedure. The Standard Care group will undergo routine venipuncture. Pain and anxiety will be assessed using Wong-Baker FACES Pain Scale, Numerical Rating Scale, and Children's Fear Scale. Additional data collection includes venipuncture frequency, medical supply usage, and procedure duration. Statistical analyses will be performed using ANOVA in SPSS v.25.

**Results:** This study is expected to show that VR and Buzzy® reduce procedural pain and distress, improving venipuncture efficiency and cost-effectiveness. VR may provide a stronger immersive distraction effect, while Buzzy® may offer additional physiological analgesia through vibration and cold application.

**Conclusions:** If effective, VR and Buzzy® could be integrated as standard non-pharmacological interventions, improving pain management and reducing healthcare costs. These findings could

inform evidence-based guidelines for pediatric procedural pain reduction.

**Key Words:** Venipuncture; Pediatric pain management; Virtual reality; Buzzy device; Distraction techniques; Non-pharmacological interventions.

## EMBRACING VULNERABLE MIGRANTS BY EMPOWERING THEIR SELF-CARE (EMBRACING) PROTOCOL FOR A LONGITUDINAL INTERNATIONAL STUDY

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**Background:** Migration represents a global phenomenon that affects millions of people around the world and has significant implications for their health and well-being. Specifically, vulnerable migrants, including irregular migrants, refugees, and asylum seekers, face unique challenges such as migration traumas, language barriers, social difficulties, limited access to healthcare, and family problems. These challenges might lead to a decrease in health status in host countries. Self-care in VM has never been studied, but could be an important factor contributing to VM well-being and health. The objective of this study will be threefold: 1) To describe self-care in VM in the dimensions of self-care maintenance, monitoring, and management; 2) To identify Problem-, Person- and Environmental-related variables predictors of self-care behaviors in VM; 3) To identify the impact of self-care in VM on quality of life, the access to health care and health providers and the onset of chronic diseases.

**Methods:** A longitudinal international study will be conducted on a convenience sample of 1000 adult VM. To be eligible for the study, VM must be aged ≥18 years, be first-generation migrants, and have been living in the hosting country for at least one month. VM with major mental or terminal diseases will be excluded.

**Results:** This study will provide the scientific



community and clinicians with the first data on self-care in VM, including its predictors and outcomes. Our results will be useful to shed light on the phenomenon of self-care in VMs and to design future interventions to improve self-care and health outcomes.

**Key Words:** *Vulnerable migrants; Self-care; Health.*

## EXPLORING AND MAPPING THE LIVED EXPERIENCES OF STIGMA AMONG PEOPLE LIVING WITH A MENTAL ILLNESS - A SCOPING REVIEW

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**Background:** Stigma affects a large proportion of people with mental health conditions and it can be a potent social stressor, presenting persistent challenges to individuals' coping abilities. The present study aimed at mapping and exploring the direct experiences of stigma encountered by individuals with mental health conditions. A scoping review was conducted according to Joanna Briggs Institute guidelines.

**Methods:** Searches of PubMed, PsycINFO, Embase, and CINAHL led to 18 eligible qualitative studies. Four primary themes emerged: self-stigma, involving the internalization of societal stereotypes; descriptions of social and public stigma; lack of knowledge in the course of mental illness; and the consequences of stigma for individuals' lives.

**Results:** Highlight the deeply negative and exclusionary impact of stigma surrounding mental disorders, outlining its manifestation and repercussions for social life. Future research is needed to identify a direct approach to the issue and to detect the most appropriate approaches in facing it. To help limiting the experience of stigma, healthcare providers should ensure an individualized care relationship, in a secure and empathetic environment filled with elements of understanding, consent and informativeness.

**Key Words:** *Mental disorders; Mental health; Nursing; Stigma.*

## EXPLORING GENDER DIFFERENCES IN PATIENT ENGAGEMENT - A SCOPING REVIEW. GENDER DIFFERENCES IN PATIENT ENGAGEMENT

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**Background:** Patient-centered healthcare emphasizes patient engagement as a critical factor in improving outcomes. Despite the impact of gender on healthcare, gender-specific dimensions of engagement remain insufficiently investigated. To explore, map, and synthesize gender differences in patient engagement, providing an in-depth analysis of the most effective tools for enhancing engagement.

**Methods:** A scoping review was conducted following JBI guidelines and the PRISMA-ScR checklist. The databases consulted were MEDLINE, CINAHL, PsycINFO, Embase, and Scopus. Two independent authors conducted the selection process blindly.

**Results:** Five studies were included. They explored engagement tools across gender differences, highlighting effective strategies. Mobile health interventions with structured tasks and therapist support enhanced engagement among women by fostering accountability. Gamified interventions promoting participation through competition and social interaction improve engagement in men. Peer-led, gender-affirming programs tailored to transgender women improved engagement by addressing stigma and identity needs. Text messaging interventions maintained high engagement across genders, demonstrating long-term behavior change.

**Conclusions:** Engagement levels vary between genders and are influenced by education and age range. Determining the most effective engagement tool is challenging, as each included study measured engagement using different outcomes and did not use validated scales that would allow for comparisons between the different tools.

**Key Words:** *Engagement; Gender; Gender identity; Involvement; Patient activation; Patient engagement; Patient participation.*

## FEASIBILITY OF A NATURE-BASED INTERVENTION ON HEALTHCARE PROFESSIONALS. A GREEN APPROACH TO SUPPORTING HEALTHCARE PROFESSIONALS

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**Background:** Nature-based interventions (NBIs) have gained increasing attention for their positive impact on physical, mental, and social well-being. These interventions include a range of structured activities conducted in natural environments, such as forest bathing, therapeutic horticulture, gardening, ecotherapy, and nature prescriptions, all of which aim to enhance health outcomes and overall quality of life. Studies suggest that exposure to natural environments contributes to stress reduction, improved cardiovascular function, enhanced immune response, and increased social cohesion, making NBIs a promising non-pharmacological strategy for disease prevention and management. Given these well-documented benefits, NBIs may be particularly valuable for healthcare professionals, a population frequently exposed to chronic occupational stress and burnout due to the demanding nature of their work. Healthcare workers, especially those in high-pressure environments such as hospitals, experience long shifts, high patient loads, and emotionally distressing situations, leading to mental exhaustion, reduced job satisfaction, and increased risk of medical errors. Despite their potential, NBIs are understudied in healthcare settings. Given their accessibility, cost-effectiveness, and adaptability to workplace environments, nature-based interventions may represent a practical and innovative approach to mitigating work-related stress among healthcare professionals.

**Methods:** This pilot study aims to assess the feasibility of a nature exposure intervention conducted on healthcare workers, evaluating its impact on stress and the subject's mood profile. This monocentric, non-pharmacological pilot study enrolled 20 healthcare workers from the rehabilitation facility in Northern Italy. Participants were randomly selected and provided informed consent. The intervention in this study was a 30-minute walk in the garden of the rehabilitation center. The walk was performed individually by each subject, without communication with other people. The use of smartphones or other electronic devices that could

be distracting or stressful was not allowed during the intervention. Each subject completed the walk in the middle of their working day, after about 4 hours of work, before their lunch break. Medical information was collected through interviews and medical records, including age, gender, medical history (e.g., musculoskeletal, neurological, cardiovascular diseases), current therapies, and past conditions. Measurements occurred at baseline (T0) and post-intervention (T1). The heart rate, oxygen saturation, and blood pressure were recorded after 10 minutes of rest at both time points. To assess serum cortisol levels, a 5 ml blood sample was taken before and after the 30-minute walk. Mood state was assessed through a 10-item mood survey adapted from the Profile of Mood States (POMS) scale. Responses ranged from 0 (not at all) to 4 (extremely), evaluating emotions such as tense, anger, worn out, unhappy, lively, confused, sorry for things done, shaky, listless, and peeved. Data were analysed in aggregate form. Quantitative data were reported as median and interquartile range (IQR), while categorical variables were presented as frequencies and percentages. Statistical significance was assessed using the Wilcoxon test, with a p-value < 0.05 considered significant. Analyses were performed using IBM SPSS® Version 25 for Windows.

**Results:** 20 healthcare professionals were enrolled in the study, including 4 physicians, 5 nurses, 9 physiotherapists, and 2 speech-language therapists. The majority were women (85%), with a median age of 42 years and a range of 25-63. Medical conditions and treatments showed that 20% (4 participants) had musculoskeletal conditions, 1 participant had an autoimmune disease, while none had neurological, neoplastic, or cardiovascular conditions; 45% (9 participants) were under pharmacological treatment, including contraceptives, antihypertensives, vitamins, thyroid medication, and statins; 90% (18 participants) were non-smokers, while the only two smokers were female. Median serum cortisol decreased by 1.68 µg/dL, and physiological parameters (heart rate, oxygen saturation, blood pressure) remained stable before and after the intervention. Mood analysis revealed a significant improvement in tension ( $p = 0.001$ ), worn out ( $p = 0.014$ ), and anger ( $p < 0.001$ ). The proportion of participants reporting no tension increased from 30% to 70%, no stress from 15% to 55%, and no anger from 70% to 95%. The pre- and post-median values for levels of unhappiness, confusion, self-discontent, trembling, listlessness, irritation, and the feeling "full of life" were in line.

**Conclusions:** This study highlighted how a brief exposure to green spaces could serve as a potential strategy for stress prevention and its related issues. These initial findings suggested the importance of exploring more extensive interventions aimed at

reducing stress and associated conditions, even within workplace settings like the one examined. If confirmed in larger studies, nature-based interventions could offer a cost-effective, non-pharmacological strategy to mitigate occupational stress, promote workplace well-being, and prevent burnout, particularly in high-stress healthcare settings.

**Key Words:** *Nature-based intervention; Healthcare professionals; Well-being, Green spaces; Stress reduction, Burnout prevention.*

## WELL-BEING AND INTEGRATION OF MIGRANT NURSES THE CASE OF ALBANIAN NURSES

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**Background:** International migration of nurses from low- and middle-income countries to high-income nations is a growing global phenomenon. Currently, one in eight nurses is employed in a country different from where they were born or trained. Albania, a middle-income country in Western Balkans, has experienced a 200% increase in nurse migration requests in recent years, with Germany emerging as a key destination. Limited research exists on the integration experiences of Albanian nurses in host countries aimed to explore the integration experiences of Albanian nurses within the German institutions.

**Methods:** A descriptive quantitative observational study was conducted using a snowball sampling technique. An online survey was distributed in 2024 to Albanian nurses employed in Germany.

**Results:** A total of 162 nurses participated. Findings indicated a positive integration experience, particularly regarding the recognition of professional qualifications, respect from colleagues, patients, and families, career opportunities, and workplace autonomy. Host institutions facilitated integration through mentorship programs, language training, procedural education, and orientation to the German healthcare system. However, participants reported challenges related to medical terminology, telephone communication, and healthcare documentation. Many emphasized the need for more structured pre-departure

preparation to ease their transition.

**Conclusions:** This study highlights the essential role of host institutions and healthcare managers in promoting inclusive work environments and supporting migrant nurse integration. Germany serves as a model for effective integration strategies. Albania must strengthen retention efforts for their nurses. Future research should focus on identifying pre-departure needs and developing standardized assessment tools to evaluate integration outcomes.

**Key Words:** *Nurses; Human migration; Work integration; Albanian nurses; Nursing workforce; Ethics in mobility.*

## FINGERPRINT CHANGE AFTER ANTICANCER TREATMENTS: A SYSTEMATIC INTEGRATIVE REVIEW

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**Background:** Biometric verification involving fingerprinting has been spreading worldwide in several social and healthcare contexts. Along with the widespread use of fingerprints, more cases of 'loss' of fingerprints have been registered. Several dermatological or non-dermatological causes have been investigated; however, little is known about fingerprint changes because of anticancer treatments. We assessed the strength of evidence between cancer therapy and fingerprint change in adult patients with cancer.

**Methods:** A systematic integrative review was conducted following the Cochrane guidelines for conducting a systematic review. PubMed, CINAHL, Web of Science, and Scopus were searched from the inception between August and November 2024. The NOS scale and JBI Checklist were employed to assess the methodological quality of the cohort studies and case reports, respectively. Of 176 records, we included five experimental studies articles and nine case reports.

**Results:** A documented correlation exists between specific anticancer treatments (capecitabine, taxanes, and tyrosine kinase inhibitors) and changes in fingerprints among individuals with various cancer diagnoses, particularly advanced breast, and colorectal

cancers. Most articles exhibited moderate to low quality.

**Conclusions:** While there is documentation of fingerprint alteration resulting from certain anticancer treatments, additional extensive and rigorously designed experimental studies are necessary to accurately assess the extent of this phenomenon in connection with particular anticancer regimens and populations. A call to action on the psychosocial and forensic implications of anticancer therapies is necessary to enhance cancer care pathways and ensure the social integration of cancer patients. Social and forensic implications of symptom burden should be a global priority to guarantee equitable access to facilities among cancer patients.

**Key Words:** *Adermatoglyphia; Cancer; Change; Chemotherapy; Fingerprint; Loss.*

and encouraging active participation. Additionally, the results highlight positive effects on mood and emotional well-being, leading to increased motivation and self-esteem. Another key aspect is the role of gamification in promoting digital literacy, fostering familiarity with new technologies, and making social activities more accessible, stimulating, and rewarding.

**Conclusions:** This review confirms that gamification represents a valuable opportunity to improve the quality of life of older adults, making social activities more engaging and supporting active and participatory aging. Its application in geriatric and rehabilitative settings deserves further exploration to optimize its effectiveness and facilitate its integration into care and assistance programs.

**Key Words:** *Elderly; Gamification; Quality of life; Wellness, Socializing.*

## GAMIFICATION AS A STRATEGY TO IMPROVE QUALITY OF LIFE AND SOCIALIZATION IN OLDER PEOPLE: A LITERATURE REVIEW

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**Background:** In recent years, gamification has emerged as an innovative strategy in the geriatric field, aiming to enhance the cognitive, physical-motor, and psychosocial abilities of older adults. The use of serious games and digital games has proven to be a promising approach to fostering social inclusion, reducing isolation, and improving overall well-being in individuals over the age of 65.

**Methods:** This literature review aims to analyse the impact of gamification in enhancing quality of life and social engagement through interactive digital tools. The research was conducted in November 2024 using the PubMed and CINAHL databases, selecting primary studies published in the last five years and following the PRISMA 2020 guidelines.

**Results:** The findings indicate that the use of serious games and digital games among older adults contributes to improved quality of life by promoting psychological and physical well-being, as well as increased personal satisfaction through engaging and enjoyable experiences. Social interaction is significantly enhanced, reducing feelings of isolation

## HOW EFFECTIVE IS THE SPECIALIST CLINIC ROLE IN THE MANAGEMENT OF EXTERNAL VENTRICULAR DRAIN?

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**Background:** The clinical nurse specialist in External Ventricular Drains (EVD), possesses the expertise to ensure correct management of the shunt itself. However, despite the identification of these skills, the infectious risk related to this device, is still high (0-22%).

**Methods:** The aim of this systematic review was to investigate on how the clinical role of the specialist nurse led to a reduction in the infectious risk associated to EVD. A systematic review was undertaken following the PRISMA guidelines. The review was conducted from 2014 January 1st to 2024 December 31st. The studies that were included in this review were only Primary Studies. The research was conducted using four different databases: PubMed, Cinahl, Scopus and Web of Science. The articles were then methodologically evaluated using the checklists provided by the JBI.

**Results:** Among the 653 articles identified first, 6 records were ultimately included in this review. There's no evidence of a Gold-Standard for the correct management of the EVD, except for the use of Chlorhexidine for skin preparation.



**Conclusion:** The absence of a Gold-Standard for the correct management of the EVD, and the observation of a decrease in the infectious risk reported, show how the specialists' clinic knowledge strongly impacts on the risk itself. However, specialist nurses and research nurses are encouraged to carry out further studies to guarantee a standardization of the management about this neurosurgical device.

**Key Words:** *External Ventricular Drain; Specialist clinic role; Hospital; Infection control.*

## THE TEACH-BACK METHOD TO ENHANCE ENGAGEMENT WITH DIGITAL TECHNOLOGY IN HYPERTENSION MANAGEMENT A LONGITUDINAL STUDY

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**Background:** Hypertension is the leading preventable risk factor for cardiovascular disease. Mobile health (mHealth) offers a promising, cost-effective approach to improving blood pressure management while enhancing patient engagement. No studies to date have specifically examined how combining a teach-back-based educational approach with the use of mHealth in managing hypertension. This study aimed to assess the effectiveness of a teach-back-based educational approach in fostering patient engagement with mHealth.

**Methods:** A longitudinal study was conducted in three phases. The study involved 76 patients. In the first phase (T0), patients received training about the use of two wearable technology devices through the teach-back method. Afterward, participants completed the TWEETS Engagement with E-health Technologies Scale (TWEETS) to measure engagement. Patient engagement was reassessed at 6 (T1) and 12 weeks (T2) after the educational training. A repeated-measures ANOVA was performed to compare the mean scores across the three phases.

**Results:** The statistical analysis revealed no significant change in the TWEETS score between T0 and T1 ( $p=0.42$ ). However, the score significantly decreased at T2 compared to the previous two time

points ( $p<0.002$ ).

**Conclusions:** Our results suggest that the teach-back method is effective for maintaining patient engagement in the short to medium term. However, its impact appears to decrease over time. Further research is needed to explore whether combining teach-back with additional strategies, such as gamification, telemedicine, remote monitoring, or peer support, can help maintain long-term patient engagement with digital technologies.

**Key Words:** *Engagement; Digital technology; Teach-back; Hypertension.*

## IMPLEMENTATION AND EXPANSION OF GREENICU PROGRAM: A CASE STUDY IN A HIGH-COMPLEXITY HOSPITAL IN LATIN AMERICA

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Clínica Las Condes

**Background:** Environmental factors contribute to a significant portion of global mortality, with healthcare systems accounting for approximately 4.4% of global greenhouse gas emissions. Hospitals, as major resource consumers, produce substantial waste, creating an urgent need for sustainability initiatives. Intensive Care Units (ICUs) disproportionately impact the ecological footprint due to their resource-intensive nature. This study examines the implementation of GreenICU program, expanding into a GreenHospital initiative, at a high-complexity hospital in Chile, a middle-income Latin American country. This research aims to describe and analyze strategies, barriers, facilitators, and outcomes of implementing a recycling program within the hospital, emphasizing waste management.

**Methods:** A descriptive, retrospective, exploratory study was conducted, focusing on program implementation from 2019 to 2023. Data sources included program documentation, waste records, and direct observations. Quantitative data on waste trends were complemented by qualitative analysis of operational challenges and strategies.

**Results:** The program began in the ICU and expanded to maternity, emergency, and food service areas. Over five years, recycled waste included 36.4% paper and cardboard, 1.9% plastic, and 59.1% organic waste. Challenges included space constraints, staff resistance,

and logistical limitations, addressed through targeted training and cross-departmental collaboration. Recycling peaked in 2021 (102,579 kg), with subsequent declines indicating a need for sustained engagement. The study highlights the feasibility of sustainability programs in resource-limited settings. The ICU's leadership role facilitated hospital-wide change. Key enablers included institutional commitment, clear protocols, and interdepartmental collaboration. However, gaps in waste data and declining participation underscore the need for continuous education and policy support.

**Conclusions:** GreenICU programs can significantly reduce hospital waste and inspire broader sustainability initiatives. The findings provide a scalable model for other healthcare institutions in Latin America, emphasizing the role of ICUs in environmental stewardship and aligning healthcare practices with global sustainability goals.

**Key Words:** Medical waste disposal; Waste management; Recycling; Environmental health; Green team.

## INTERVENTIONS FOR MANAGING NURSING MORAL DISTRESS: A SCOPING REVIEW. NURSING MORAL DISTRESS

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**Background:** Moral Distress is a painful feeling and/or psychological imbalance that occurs when nurses are aware of the most appropriate moral action in each situation but are unable to carry it out for various reasons. The phenomenon of Moral Distress in nursing practice is sometimes unknown and often underestimated.

**Methods:** A Scoping Review was conducted to identify interventions useful for preserving the emotional integrity of professionals in operational settings. The research project was carried out between June 2020 and February 2024 by consulting major biomedical databases—CINAHL, Embase, PubMed, and Scopus—to identify published research articles.

**Results:** Among the fourteen analyzed studies, seven were qualitative studies, two were qualitative Grounded Theory studies, two were Randomized Controlled Trials, one was a case report, one was a pilot study, and one used a mixed-methods approach.

Several thematic areas emerged as predominant in the evaluated studies.

**Conclusions:** The intervention that was found to be beneficial across all studies analyzed in this Scoping Review was seeking support from fellow nurses, breaking the silence that keeps professionals experiencing Moral Distress isolated in their suffering. This study highlights the need to promote research on the effectiveness of interventions or proactive actions to counteract Moral Distress.

**Key Words:** Moral distress; Nurses; Scoping review.

## JOB DEMANDS, RESOURCES, AND NURSE RETENTION IN ITALY - WHAT DRIVES TURNOVER

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**Background:** Understanding, measuring, and addressing nurses' turnover intentions is essential for retaining the workforce and ensuring healthcare system sustainability. In Italy, the nursing profession faces significant challenges, with nurse-to-population ratios and graduation rates below the European average. The COVID-19 pandemic further exacerbated turnover rates, highlighting the urgency of addressing this issue. Despite its critical impact, research on nursing turnover in Italy remains limited. Identifying the key factors influencing nurse turnover is fundamental for developing effective retention strategies, as well as to examine job demand/resources as determinants of nurses' intention to leave their job.

**Methods:** This cross-sectional study utilized structural equation modeling (SEM) to examine turnover determinants based on the Job Demands-Resources (JD-R) and Social Exchange Theory (SET). An online survey was conducted in 2022–2023 among nurses working across various healthcare settings in Italy.

**Results:** A total of 1745 nurses participated. Findings indicated that high job demands—including physical, mental, and emotional workloads—were significantly associated with increased turnover intentions. Conversely, job resources such as decision-making autonomy, supportive leadership, and positive leader-member relationships are linked with improved retention. Younger nurses demonstrated a higher likelihood of considering leaving their jobs.

**Conclusions:** Early identification of nurses at risk of leaving and understanding turnover drivers are crucial for workforce sustainability. Strengthening job resources and fostering supportive work environments are key strategies to enhance nurses' well-being, job satisfaction, and retention. Implementing targeted retention policies and best practices is vital to improving healthcare workforce resilience.

**Key Words:** Nurses; Turnover; Retention; SEM; Workload; Job demands; Job resources; Autonomy; LMX.

## LEADERSHIP TRANSFORMATION AND NURSING DYNAMICS: EXPLORING THE ROLE OF JOB SATISFACTION AND PERSONAL MASTERY IN HEALTHCARE ORGANIZATIONS

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**Background:** Transformational leadership fosters trusting relationships, new visions, and personal, professional, and cultural growth. Effective leaders support their team's motivational growth and organizational goals. This study highlights the importance of transformational leadership and its dimensions, particularly in healthcare organizations.

**Method:** A cross-sectional design with convenience sampling was used. Evaluation tools included the Multifactor Leadership Questionnaire (MLQ-6S), the Satisfaction of Employees in Health Care (SEHC) questionnaire, and the Personal Mastery Scale (PMS).

**Results:** The study found significant correlations between leadership styles, job satisfaction, and personal mastery, regardless of the workplace environment or leadership style. The laissez-faire leadership style was the only one showing no correlation with nurses' job satisfaction. Other leadership styles showed significant positive or negative correlations with the analyzed variables.

**Conclusions:** Transformational leaders are essential for fostering trust, innovation, and engagement in healthcare settings. Positive leadership styles enhance job satisfaction and professional commitment, reducing staff burnout. Conversely, laissez-faire and autocratic leadership styles can negatively impact performance and staff satisfaction. These findings highlight the

critical role of leaders in creating positive work environments and supporting employee development and well-being in healthcare.

**Key Words:** Transformational leadership; Healthcare organizations; Job satisfaction; Personal mastery; Leadership styles; Employee engagement.

## MEASUREMENT PROPERTIES OF THE MUTUALITY SCALE IN OLDER ADULTS WITH MULTIPLE CHRONIC CONDITIONS AND THEIR CAREGIVERS

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**Background:** The relationship quality (Mutuality) between patients affected by multiple chronic conditions (MCCs) and their caregivers is essential for improving health outcomes of both members. Mutuality is measured in patient-caregiver dyads with different instruments. To our knowledge, the 15-item Mutuality Scale (MS) has never been validated in MCCs patients and their caregivers. This study aims to investigate the psychometric properties (validity and internal consistency reliability) of MS on patient affected by MCCs and their caregivers.

**Methods:** A Multicenter cross-sectional design was used. Factorial validity was tested with confirmatory factory analysis. Internal consistency reliability was investigated with the model-based internal consistency reliability index. Pearson's correlation coefficient was used to test convergent validity between mutuality and other theoretical and empirical variables associated with it.

**Results:** A sample of 406 MCCs patients- caregiver dyads was enrolled. Patients had a mean age of 74.9 years, with 54% being female, and an average of 2.5 chronic conditions. Caregivers had a mean age of 48 years, of whom 67.5% were female, and 38% were the patients' children. The CFA testing the theoretical four-factors (love, shared pleasurable activities, shared values, and reciprocity) of mutuality demonstrated adequate fit to the data in both the patient and caregiver version of the scale. Reliability estimates were adequate

for the whole scale. Correlations were observed between mutuality and self-care behaviors, and positive aspect of caregiving, supporting convergent validity.

**Conclusion:** The Mutuality Scale demonstrated satisfactory structural and convergent validity and reliability in MCCs patient-caregiver dyads.

**Key Words:** *Multiple chronic condition; Mutuality scale; Dyad; Relationship quality; Psychometric properties; Validity; Reliability.*

## NURSES' BELIEFS AND THE UTILIZATION OF NURSING DIAGNOSES: A CROSS-SECTIONAL STUDY

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**Background:** Nursing diagnoses (NDs) forms the basis for a nurse's choice of interventions to achieve specific goals and objectives, reflecting the complete autonomy and responsibility of the nursing profession. This study explored nurses' belief patterns regarding NDs and examined how these patterns related to socio-demographic factors, clinical reasoning skills, and work environment characteristics. Additionally, the study aimed to identify key factors influencing the long-term use of NDs in clinical practice.

**Methods:** A cross-sectional study was conducted with 444 nurses from two Italian hospitals. Data were collected using the Behavioral Beliefs Scale (BBS), Normative Beliefs Scale (NBS), Control Beliefs Scale (CBS), Positions on Nursing Diagnosis (PND), Intention Scale (INT), Behavior Scale (BHS), Practice Environment Scale of the Nursing Work Index (PES-NWI), and Nurse Clinical Reasoning Scale (NCRS). Cluster analysis was performed to identify belief patterns, and zero-inflated negative binomial regression (ZINB) was used to assess predictors of NDs utilization over time.

**Results:** Three distinct belief clusters emerged: positive beliefs (37.4%), neutral beliefs (48.6%), and negative beliefs (14%). Nurses in the positive belief cluster demonstrated stronger clinical reasoning skills and a more favorable perception of their work environment. Significant differences were observed

across clusters in practice environment subscales and behavioral beliefs. Nurses with positive beliefs exhibited greater intention (OR = 2.18, 95% CI: 1.41–3.37,  $p < 0.001$ ) and self-efficacy (OR = 1.79, 95% CI: 1.21–2.64,  $p = 0.004$ ) in using NDs. However, work environment and clinical reasoning levels did not directly influence ND utilization.

**Conclusions:** Classifying nurses based on their beliefs about nursing diagnoses (NDs) and identifying determinants of NDs utilization allows administrators and educators to design targeted interventions that enhance the integration of nursing diagnoses into clinical practice.

**Key Words:** *Nursing diagnosis; Clinical reasoning; Work environment; Nursing documentation.*

## THE ROLE OF PROFESSIONAL DIGNITY IN END-OF-LIFE NURSING CARE: A QUALITATIVE EXPLORATION. PERCEPTIONS OF PROFESSIONAL NURSING DIGNITY IN PALLIATIVE AND HOSPICE CARE SETTINGS

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**Background:** Nursing professional dignity represents a fundamental dimension of occupational well-being and quality of care. It consists of an intrinsic dimension, related to the value of the person, and a contingent dimension, influenced by social and professional contexts. Exploring professional dignity in community settings is essential to understanding the dynamics that influence its recognition. The aim of the study is to analyse nurses' perceptions of their professional dignity in the palliative care context.

**Methods:** A qualitative study was conducted based on 12 focus groups with 69 nurses working in hospice and home care in two Italian regions. The data collected and transcribed were analysed through an inductive coding process, which produced 612 codes, 49 subcategories and 17 main categories, summarized into five themes.

**Results:** Themes that emerged included: the inherent dignity of the individual, nursing professionalism, intra-



and interprofessional relationships, ethical dilemmas, and relationships with patients and their families.

**Conclusions:** Nurses reported greater perceptions of respect for their professional dignity in palliative care than in other previous studies conducted in hospital settings, an accomplishment related to good intra- and interprofessional relationships and good relationships with patients and their families. Professional dignity was more respected in homecare than in hospice. In such settings, nursing professionalism was emphasized even though the emotional burden on nurses was high because of the ethical dilemmas they faced.

**Key Words:** *Professional dignity; Quality of care; Palliative care; Nurse well-being; Nursing ethics.*

## THE ROLE OF COMPASSION IN ADDRESSING NURSING CARE COMPLEXITY. COMPASSION IN NURSING: A KEY COMPETENCY FOR QUALITY CARE AND PROFESSIONAL RESILIENCE

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**Background:** The ability to cope with the complexities of care requires cross-cutting skills that can respond to both clinical and relational needs. Compassion, understood as an active response to the suffering of others, is a key resource for promoting the humanization of care while improving the psychological well-being of health professionals. The aim of this study was to explore the compassionate practice of nurses, analysing its benefits in terms of quality of care and professional resilience in different care settings.

**Methods:** A single-center descriptive observational study was conducted using a valid and reliable measurement instrument. The Compassion Scale, validated in Italian, was administered to 120 nurses working in Intensive Care Units, Emergency Rooms, and Oncology Departments. The dimensions of compassion investigated included mindfulness, kindness, humanity, and non-indifference.

**Results:** The response rate was 85% (102 questionnaires). All dimensions of compassion reported mean values above the cut-off value ( $\geq 3$ ), indicating widespread compassionate practice. The highest scores were found in Oncology, with a low incidence

of compassion fatigue (1%) in Emergency Rooms. Professional experience and female gender emerged as facilitating factors for compassion itself.

**Conclusions:** Compassion as a core care concept has proven to be an effective response to governing the complexity of health care needs. Implementing training paths aimed at enhancing this competency is a key strategy to contribute to the quality of assistance and emotional sustainability of practitioners.

**Key Words:** *Compassion; Quality of care; Patient centred-care; Nurse well-being; Professional resilience.*

## SOURCES OF NOISE AND THEIR IMPACT ON NURSES IN INTENSIVE CARE UNITS

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**Background:** Modern working environments demand appropriate working conditions. During work hours, workers are exposed to various strains and stressors. Noise in the workplace is one of the primary and most common stressors, resulting in numerous health challenges, including physiological and psychological effects on well-being. Hospitals are environments where individuals may experience high levels of noise. Both patients and healthcare professionals can be exposed to high noise levels and discomfort. Exposure to unsafe noise levels can affect patient well-being and healthcare professionals' productivity. The research aims to identify noise sources and related adverse effects from the perspective of nurses in intensive care units, examine differences in noise perception within and outside the ICU based on demographic and job-related variables, investigate differences in subjective, emotional, physiological perceptions, and work performance according to demographic and job-related variables, and explore the association of noise inside and outside the ICU with subjective, emotional, physiological perceptions, and work performance.

**Methods:** The study sample included 100 nurses employed in intensive care units (ICU) across several institutions (Clinical Hospital Merkur, General Hospital "Dr. Josip Benčević" Slavonski Brod, General Hospital Pula). Data was collected using a three-part questionnaire. The first part focused on personal-professional characteristics. The second part assessed internal and external noise sources from the nurses'

perspective. The third part evaluated the impact of noise on four domains: physiological, emotional, subjective perception, and work performance. Data were statistically analysed using descriptive statistical methods.

**Results:** The Kolmogorov-Smirnov test was used to assess the impact of noise within and outside the ICU on subjective, emotional, and physiological perceptions and work performance, and it showed significance ( $P < 0.05$ ). Results indicated significant differences in noise perception within the ICU according to the type of employment institution (Mann-Whitney test;  $P = 0.006$ ) and location of employment (Mann-Whitney test;  $P = 0.006$ ). There was also a significant difference according to the number of beds (Kruskal-Wallis test;  $P = 0.017$ ), with a notably higher impact of noise on participants working morning shifts and in rotating shifts compared to those working only in shifts ( $P = 0.006$ ). Results across the four domains (subjective perception, emotions, physiological, and work performance) showed significant relationships with the bed occupancy rate, type of ICU, and number of beds ( $P < 0.05$ ). Moreover, the performance domain results had a significant relationship with work experience, bed occupancy rate, and type of shift ( $P < 0.05$ ).

**Conclusions:** As noise is a health hazard and disrupts both patients and ICU staff, it is recommended that appropriate strategies should be devised to reduce its impact.

**Key Words:** Noise; Intensive care unit; Nurses; Healthcare facility; Patient.

## SOCIAL-MEDIA COMMUNICATION BY NURSING DEGREE STUDENTS. A STRUCTURED ANALYSIS OF TIKTOK VIDEOS

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**Background:** Beyond private use, the use of social-media by nursing professionals not only concerns phenomena of scientific dissemination or entertainment but has been repeatedly concretized in questionable manners around the world. International media have reported several cases of unfair use, which should draw attention to the need for widespread education

on the proper use of these powerful communication tools, starting from basic training years. In Italy, studies concerning the use of these digital platforms by nursing students remain limited.

**Methods:** This study aimed to assess how nursing students presented their internship activities on one of the most widely used social-media platforms: TikTok. Adapting the JBI methodology for Scoping Review and the PRISMA-SCR framework, a structured search was performed on TikTok in September 2024. Of the 2320 videos screened in the search, 175 videos were included in the content analysis, carried out by categorizing the videos into pre-defined categories, using descriptive statistics, performing a quality assessment with two different validated scales, and, finally, assessing ethical and legal issues of the content. Relationships between variables were examined through a correlation matrix.

**Results:** The content was categorized as "Entertainment" videos 146 times, "Informational" videos 33 times, and "Educational" videos 13 times. The total number of views at the data collection was 2,781,487 views; the quality of the videos was generally low. The correlation matrix found numerous statistically significant relationships, in line with modern communication theories and similar studies. About 30% of the videos presented possible ethical issues, and about 17% presented possible legal issues, including photos or videos of patients, readable names on test tubes, incorrect nursing practices, and photos of anatomical specimens during/after surgical procedures.

**Conclusions:** Collaboration between universities and professional nursing associations is needed to enhance deep education on social-media use early and possible consequences of misuse.

**Key Words:** Communication; Nursing Students; Nursing Education; Social; TikTok.

## PROFESSIONAL RESPECT AS EXPERIENCED BY PUBLIC HEALTH NURSES IN FINLAND

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**Background:** Patient care suffers when nurses are not respected. Therefore, to improve patient outcomes, it is crucial that nurses practice in moral environments of intrinsic and social worth that foster respect for

their dignity. Theoretical underpinnings for this study were derived from Darwall's recognition and appraisal respect concepts to describe nurses' experience of professional respect in community practice in Finland and to expand understanding of professional respect internationally.

**Method:** Data were collected using a descriptive qualitative method with purposive sampling of public health nurses working in districts in the Kuopio area in Finland. Twenty-six nurses were interviewed in small interview groups. Data was coded with inductive content analysis, extracting meaning units from interview transcripts. Eighteen categories and three related themes were abstracted.

**Results:** Public health nurses' self-respect was the first theme. Other themes were linked to patients' trust in public health nurses and respect for public health nurses in different health and social networks.

**Conclusions:** Public health nurses contended that if they were not respecting their profession, they did not have the right to expect others to do it. Participants were proud of their profession because it was the oldest nursing education specialty in Finland. Besides, nurses valued self-respect for their profession through their attitude to have lifelong learning, to update their competencies and to develop the capacities for public health nurses' work. Furthermore, the patients' trust had a key role in nurses' experiences of respect. The patients' trust was displayed through meaningful interactions where nurses were valued for their expertise by the public. Lastly, nursing's professional respect was stressed through meaningful interactions with colleagues and other professionals.

**Key Words:** Professional respect; Dignity; Public health nurses.

## QUALITY OF NURSING WORKING LIFE, WORK ABILITY INDEX AND INTENTION TO LEAVE THE WORKPLACE AND PROFESSION

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**Background:** Nurses are facing a number of challenges, such as the aging population, the associated increased need for medical interventions, the complexity of nursing care, the shortening of patients' length of stay in hospital, stress in the workplace and staff

shortages. To ensure safe and high-quality care, it is therefore necessary to pay attention to the quality of nursing working life (QNWL) and the work ability index (WAI), which can influence the intention to leave the workplace and the profession.

**Methods:** The aim of the study was to determine the level of QNWL, the Work Ability Index (WAI) and the intention to change jobs and leave the profession. A cross-sectional study was conducted in 2023, in which 498 respondents took part. Demographic data was collected and the Brooks Nurses' Quality of Work Life Questionnaire and the Work Ability Index Questionnaire were used. Respondents answered questions about their intentions to change jobs and leave the profession in the last 12 months.

**Results:** Most respondents (73.7%) had a moderate QNWL and a good (43.8%) and excellent WAI (22.5%). Male respondents, respondents who did not have children, and respondents who did not care for their parents had higher WAI scores. A statistically significant positive correlation was found between QNWL and WAI. Most respondents (61.1%) had thought about changing jobs in the last 12 months, and 36.9% of respondents had thought about leaving the nursing profession. No statistically significant correlation was found between QNWL, WAI and intention to change jobs and leave the profession.

**Conclusions:** By improving nurses' QNWL and taking care of WAI, a healthcare facility influences the overall productivity, commitment, work efficiency, nurses' health, and job satisfaction. A high QNWL is important to retain and attract nurses. Employers and nurse managers should take measures aimed at ensuring a high QNWL and excellent WAI and monitoring and influencing the reasons that cause nurses to leave the workplace.

**Key Words:** Quality of work life; Work Ability Index; Leaving the profession; Nurses.

## SELF-CARE BEHAVIORS IN OLDER ADULT AFFECTED OF MULTIPLE CHRONIC CONDITIONS LIVING IN A LOW- AND MIDDLE-INCOME COUNTRY AND ITS VARIABLES ASSOCIATED

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**Background:** To explore the socio-demographic and clinical factors influencing self-care behaviors among older adult with multiple chronic conditions (MCCs) living in a low-and middle-income country (LMIC).

**Methods:** Two hundred eighty-six patients were enrolled from community and outpatient settings in Albania, a LMIC. Eligibility criteria included being  $\geq 65$  years and a diagnosis of heart failure, diabetes mellitus, or chronic obstructive pulmonary disease (COPD), along with at least one additional chronic condition. The Self-Care of Chronic Illness Inventory (SC-CII) was used to measure self-care maintenance, monitoring, and management behaviors. The Patient Health Questionnaire-9 (PHQ-9), Perceived Stress Scale (PSS), Multidimensional Scale of Perceived Social Support (MSPSS) were used to measure depression, stress and perceived social support, respectively. The relationship between self-care behaviors and associated variables was assessed by multivariate regression models.

**Results:** MCCs patients had an average age of 74.15 years (SD 6.36), with a majority being female (56%) and with a low education level (61% had  $\leq 8$  years of scholarship). Patients reported a moderate level of depression (mean=17.32, SD=6.43), stress (mean=7.82, SD=4.42) and perceived a high social support (mean=4.61, SD=1.09). Self-care maintenance, self-care monitoring and self-care management were significantly and positively associated with high perceived social support ( $\beta = 4.33$ ,  $p < 0.001$ ;  $\beta = 5.64$ ,  $p < 0.001$ ;  $\beta = 5.64$ ,  $p < 0.001$ , respectively) and female ( $\beta = 6.16$ ,  $p < 0.05$ ).

**Conclusions:** In older adults with MCCs and living in a LMIC interventions focused on improving self-care behaviors should consider perceived social support level and gender-specific differences.

**Key Words:** Age; Chronic obstructive pulmonary disease; Depression; Diabetes mellitus, Gender, Heart failure; Low-and middle-income countries; Multiple chronic conditions; Self-care; Perceived social support; Stress.

## SEPSIS EDUCATION IN NURSING: A CROSS-SECTIONAL STUDY OF STUDENTS' KNOWLEDGE ACROSS CROATIAN, CYPRIOT, AND GREEK UNIVERSITIES. ASSESSING KNOWLEDGE GAPS AND EDUCATIONAL DIFFERENCES IN SEPSIS TRAINING AMONG NURSING STUDENTS

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**Background:** Sepsis is a leading cause of morbidity and mortality worldwide, requiring timely recognition and intervention. Nurses play a crucial role in early sepsis detection and management. However, gaps in nursing students' knowledge may impact future clinical outcomes. This study aimed to assess nursing students' knowledge of sepsis and its symptoms across three European countries: Croatia, Cyprus, and Greece.

**Methods:** A cross-sectional study was conducted among 626 undergraduate nursing students from at least one university in each country. Data were collected using a validated questionnaire assessing knowledge of sepsis and its symptoms. The results were analyzed using ANOVA and chi-square tests to determine differences in knowledge levels across countries and years of study.



**Results:** Statistically significant differences were found in sepsis knowledge among nursing students from different countries ( $F(2.625) = 4.254$ ,  $p = 0.015$ ). Cypriot students demonstrated a significantly higher level of knowledge compared to Greek students ( $p = 0.016$ ), while no significant differences were observed between Croatian students and the other two groups. Further analysis revealed that students in higher years of study generally exhibited better knowledge. The findings indicate variability in sepsis education among nursing curricula in these three countries. This highlights the need for harmonization of educational content to ensure that all nursing students acquire the necessary competencies for early sepsis recognition and management. Simulation-based learning and standardized protocols could be effective tools in improving knowledge retention and clinical preparedness.

**Conclusions:** Nursing students' knowledge of sepsis remains suboptimal, with notable differences between countries. Given the critical role of nurses in sepsis care, nursing curricula should include more structured and comprehensive training on sepsis recognition and management. Future research should focus on longitudinal studies to evaluate the effectiveness of targeted educational interventions.

**Key Words:** *sepsis, nursing, education, knowledge.*

# INSTRUCTIONS FOR AUTHORS

## Aims and scope

World of Health is the official journal of the European Specialist Nurses Organisation, which publishes articles related to health topics that have not been previously published. The journal is open to all medical and health professionals, as well as to authors who are not healthcare professionals but whose articles deal with health and healthcare issues. Regardless of what the author's citizenship might be, all received manuscripts will be given equal attention. Manuscripts are accepted and published in standard English languages, and language accuracy is the responsibility of the author. The journal is published twice per year.

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