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**1<sup>ST</sup> IZMIR UNIVERSITY OF ECONOMICS HEALTH  
SCIENCES CONGRESS 2025  
ABSTRACT BOOK**

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April 25-27, 2025  
Izmir University of Economics, Izmir-Turkiye



İZMİR UNIVERSITY OF ECONOMICS  
Faculty of Health Sciences



25-27 APRIL 2025

İZMİR - TÜRKİYE

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**HEALTH SCIENCES**

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# COMMITTEES

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# THE SCIENTIFIC PROGRAM

1<sup>st</sup> Izmir University of Economics Health Sciences Congress  
25-27 April 2025  
(Izmir University of Economics, Izmir-Turkiye)

25 April 2025

	<b>Opening Speeches</b>
10.00-10.30	<ul style="list-style-type: none"> <li>&gt; <b>Asst. Prof. Barış Gürpınar</b>, Chair of 1<sup>st</sup> Izmir University of Economics Health Sciences Congress</li> <li>&gt; <b>Prof. Dr. Filiz Öğce Aktaş</b>, Dean, Izmir University of Economics Faculty of Health Sciences and President, Turkish Surgical and Operating Room Nurses Association</li> <li>&gt; <b>Onur Yiğit</b>, Mayor of Balçova Municipality</li> <li>&gt; <b>Prof. Dr. Yusuf Hakan Abacıoğlu</b>, Rector, Izmir University of Economics</li> </ul>
	<b>Panel 1: Interdisciplinary Collaboration in Health Education</b> <b>Prof. Dr. Filiz Öğce Aktaş, Prof. Dr. Derya Özer Kaya</b>
10.30-10.45	> <b>Prof. Dr. İskender Sayek</b> “Interprofessional Education in Health Sciences”
10.45-11.00	> <b>Prof. Dr. Gizem İrem Kınıklı</b> “Simulation-based Interprofessional Education in Health Sciences”
11.00-11.15	> <b>Asst. Prof. Donald Staub</b> “Skilling, Upskilling & Reskilling - Micro-Credentials for Increased Employability”
11.15-11.30	> <b>Prof. Dr. Rupert Ward</b> “A Brief Introduction to Personalised Learning”
11.30-11.40	> Discussion
11.50-12.10	<b>Coffee Break</b>
	<b>Panel 2: Effective Teaching and Learning</b> <b>Asst. Prof. Fzt Barış Gürpınar, Prof. Dr. Serkan Bakırhan</b>
12.10-12.25	> <b>Prof. Dr. Javier Güeita Rodríguez</b> “To Teach Is to Learn Twice”: Experiences in Management and Education in A Physical Therapy University.”
12.25-12.40	> <b>MSc. PT. Josephine Morris</b> ” Students as Collaborators in Teaching and Learning”
12.40-12.55	> <b>Asst. Prof. Tara FitzGerald</b> “A New Model of Paediatric Clinical Education an Australian”
12.55-13.15	> Discussion
13.15-14.15	<b>Lunch</b>
	<b>Panel 4: Creative and Sustainable Education</b> <b>Prof. Dr. Sevgi Sevi Yeşilyaprak, Asst. Prof. Ayşe Özden</b>
14.15-14.30	> <b>Prof. Dr. Andrea Ribeiro</b> “Building a Sustainable Future Through Physiotherapy and Environmental Health”
14.30-14.45	> <b>Asst. Prof. Şermin Tükel Akay</b> “Genetics in Physiotherapy Education: Current Situation and Future Implications in Türkiye”
14.45-15.00	> <b>Asst. Prof. Esin Çağlayan</b> “Universal Design for Learning - Creating Inclusive Learning Experiences in Higher Education”
15.00-15.15	> Discussion
15.15-15.45	<b>Coffee Break</b>
	<b>Panel 3: Education and Artificial Intelligence</b> <b>Prof. Dr. Seher Özyürek, Prof. Dr. Ferruh Taşpınar</b>
15.45-16.00	> <b>Prof. Dr. Erkan Kaplanoğlu</b> “To Adapt AI in Biosignals to Health Education.”
16.00-16.15	> <b>Prof. Dr. Bart Roelands</b> “AI and Wearables in Science And Education”
16.15-16.30	> <b>Prof. Dr. Bruno Bonnechère</b> “LLM in Education, Dr Jekyll and Mr Hyde?”
16.30-16.45	> <b>Assoc. Prof. Turhan Kahraman</b> “Assessment in the Age of Artificial Intelligence”
16.45-17.00	> Discussion

26 April 2025

10.00-11.30	<b>Shaping Tomorrow’s Health Education: An Ideathon</b> Teams Work and Brainstorming
11.30-12.00	<b>Coffee Break</b>
12.00-13.00	<b>Shaping Tomorrow’s Health Education: An Ideathon</b> Team Presentations and Feedback
13.30-14.30	<b>Lunch</b>
14.30-15.45	<b>Oral presentations</b>
15.45-16.00	<b>Coffee Break</b>
16.00-17.15	<b>Oral presentations</b>

27 April 2025

**Social Programme**

## ORAL PRESENTATIONS

- OP1. Integration of Virtual Reality Technologies in Medical Education: A Novel Approach to Research and Laboratory Training**  
Kiril Todoroski, Elena Yurievna Fedorova, Aleksei Dmitrievich Kozlovskii
- OP2. Evaluation of Competency in Aquatic Physiotherapists: Developing A Comprehensive Framework Model**  
Prashanth Gopal, Al Madzhar Ahamdul, Amjad Annethattil
- OP3. The Mediating Role of Self-Esteem Between Self-Efficacy and Life Satisfaction in Undergraduate Nursing Students**  
İrfan Akkoç, Ebru Dıđrak
- OP4. The “Stop Test” Fails to Predict Pelvic Floor Muscle Strength in Women with Urinary Incontinence: A Machine Learning Analysis**  
Elif Duygu Yıldız, Seda Yakıt Yeşilyurt, BÜsra İnal, Meryem Yalçinkaya, Nuriye Özenin
- OP5. Health Sciences Students’ Mindfulness Levels and Their Perspectives on War-Affected Children: A Correlational Study**  
Kardelen Sancar, Kader Arslan, Havvanur Kerim, Bahise Aydın
- OP6. Use of Digital Serious Games in Nursing Education: Systematic Review**  
Nehir Demirel, Ayşe Eminođlu, Fahriye Oflaz
- OP7. Evaluation of Educational Environment Perception in Physiotherapy and Rehabilitation Undergraduate Students in Different Countries: A Pilot Study**  
İlayda Elmas, Mustafa Tahsin Özer, Barış Gürpınar
- OP8. The Relationship between Locus of Control and Perception of the Educational Environment in Physiotherapy Students**  
Ipek Yavas, Gonca Sahiner Pıcak, Ridvan Aktan
- OP9. The Effects of Plyometric and Strengthening Exercises on Jumping and Balance in Male University Students**  
Muhammed Nebi Mayruk, Zekiye Gizem Caner, İoakim Ipseftel
- OP10. Investigation of the Relationship between Pain Knowledge and Pain Attitudes and Beliefs in Physiotherapy and Rehabilitation Students**  
Ahmet Öztürk, Yeşim Salık Şengül, Mahsa Khojin, Ünsel Özyürek, Ceren Diz
- OP11. A Comparative Analysis of Physiotherapy Curriculum in Globally Ranked Universities**  
Efecan Cesur, Ahmet Öztürk, Yeşim Salık Şengül
- OP12. Digital Gaming and Its Impact on Physical Activity, Sleep Patterns, and Health: A Descriptive Study**  
Mehmet Alphan Çakırođlu, Ata Elvan, Mustafa Tahsin Özer, Tülay Tarsuslu
- OP13. The Relationship between Physical Activity Score, Exercise Benefit/Barrier Perception and Menopausal Symptoms in Menopausal Women**  
Hanife BÜşra Hekimođlu, Hanife Abakay, Nuriye Özenin
- OP14. Global Trends in Evidence-Based Cardiopulmonary Physiotherapy Education: A Bibliometric Analysis**  
Alp Özel, Umut Ata Uđraş
- OP15. Attitudes toward Gender Roles among Faculty of Medicine Students**  
Selcan Zeynep Ergöz Aksoy, Beyza Mercan, Betül Ezgi Kol, Selay Bakan, Sude Eylül Kara, Gönül Dinç Horasan
- OP16. Effects of Self-Compassion and Selected Factors on Attitudes towards Pain Assessment in Nursing Students: A Descriptive Cross-Sectional Study**  
Adile Savsar, Alev Güçtekin

- OP17. The Mediating Role of Psychological Well-Being in the Association between Intolerance of Uncertainty and Academic Life Satisfaction among University Students**  
İrfan Akkoç, Ebru Dıđrak, Tlay Yavan, Filiz đce Aktař
- OP18. Effect of Lower Urinary Tract Symptoms on Balance and Fall Risk in Women with Multiple Sclerosis**  
Gzde Tekin, řule Aydın Trkođlu, Handan Ankaralı, Yeřim Bakar, Nuriye zengin
- OP19. Physiotherapy Approach after Radial Artery Aneurysm Repair: A Case Report**  
Umut Ata Uđrař, Alp zel, Ufuk Turan Krřat Korkmaz
- OP20. Educational Interventions for Patients Undergoing Surgery: A Review of Current Evidence**  
Adile Savsar, Filiz đce Aktař
- OP21. Integration of Team-Based Learning and Artificial Intelligence as an Active Learning Method in Nursing Education**  
Bahise Aydın
- OP22. Relationship between Shoulder Rotational Isometric Muscle Strength and Physical Performance in Overhead Athletes**  
Grsu Sayar, Fırat Kara, Derya Durguncu, Eshan Karakurum, Břra Palaz, Glbin Ergin, Sevgi Sevi Yeřilyaprak
- OP23. The Use of Poverty Simulations in Public Health Education**  
Ebru Dıđrak
- OP24. Investigation of the Relationship between Academic Motivation and Course Success in Physiotherapy and Rehabilitation Undergraduate Students**  
Mustafa Tahsin zer, Burcu Ece Korkmaz, Ata Elvan

## OP1

### Integration of virtual reality technologies in medical education: A novel approach to research and laboratory training

Kiril Todoroski, Elena Yurievna Fedorova, Aleksei Dmitrievich Kozlovskii

*Moscow City University, Institute of Natural Science and Sports Technologies, Moscow, Russia*

**Purpose:** To evaluate the impact of virtual reality (VR) technologies in medical education and determine their effectiveness in research protocol development, laboratory training, and educational assessment.

**Methods:** A systematic literature review was conducted using the Scopus and Web of Science databases, including randomized controlled trials, meta-analyses, and experimental studies published between 2018 and 2025. Empirical data from educational institutions using VR-based training were analyzed. Key metrics included knowledge retention, procedural skill acquisition, student engagement, and assessment efficacy. Knowledge retention was evaluated through pre- and post-course testing; procedural skill acquisition through clinical simulation; engagement through participation metrics; and assessment efficacy through OSCE performance.

**Results:** VR significantly enhanced educational outcomes. Knowledge retention increased by 20.00%, and procedural skill acquisition improved by 25.00% in VR groups. Student engagement rose by 35.00%, and OSCE scores were 15.00% higher compared to traditional methods. Remote learning using VR achieved results comparable to in-person training. The p-values across these outcomes were statistically significant (e.g.,  $p=0.021$  for retention;  $p=0.033$  for procedural skills;  $p=0.018$  for OSCE scores).

**Conclusion:** Virtual reality is an effective educational tool that enhances student engagement, knowledge retention, and skill acquisition. Its integration into medical curricula bridges theoretical and practical learning. Future research should focus on adaptive VR systems for personalized education and long-term retention outcomes.

**Keywords:** Computer-Assisted Instruction, Education, Medical, Learning, Simulation Training, Virtual Reality.

## OP2

### Evaluation of competency in aquatic physiotherapists: Developing a comprehensive framework model

Prashanth Gopal, Al Madzhar Ahamdul, Amjad Annethattil

*Qatar Rehabilitation Institute, Aquatic Physiotherapy Department, HMC, Doha, Qatar*

**Purpose:** To develop a comprehensive framework for evaluating the competency of Aquatic physiotherapists on relevant domains within a corporate healthcare setting. The objectives include assessing clinical, professional skills and etiquette in a corporate setting. Associated objectives were to identify areas for improvement, support professional development, and enhance patient outcomes.

**Methods:** The competence evaluation is performed on three domains: Knowledge, Skill, and corporate etiquette. Each domain will be assessed using a 5-point Likert scale, ranging from 'Not enough Competency' to 'Outstanding Competency.' The proficiency levels are categorized from Beginner to Expert with clear criteria for each level. After reviewing competency tools used by various physiotherapy organizations and national bodies, a competency tool was developed that was adapted to suit the specific requirements of aquatic therapy. A process to evaluate the competence level of therapists at different levels was designed. A scoring system to recognize strength and weaknesses in clinical skills was constructed. The comprehensive level of therapists as per the Dreyfus model will be recognized and a pathway for reaching higher levels of competency was developed.

**Results:** An initial working draft of a comprehensive framework to measure the competency standards of aquatic physiotherapists. The model emphasizes both technical knowledge of aquatic therapy techniques as well as corporate etiquette required within healthcare settings. The draft is ready for undertaking a pilot study to establish the validity of the competence framework.

**Conclusion:** This framework offers a structured approach to competency evaluation, ensuring physiotherapists meet the required standards in aquatic therapy practice. It supports continuous professional development and enhances the quality of patient care.

**Keywords:** Aquatic Therapy, Clinical Competence, Evaluation, Healthcare, Workforce.

## OP3

### The mediating role of self-esteem between self-efficacy and life satisfaction in undergraduate nursing students

İrfan Akkoç<sup>1</sup>, Ebru Dıġrak<sup>2</sup>

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<sup>2</sup>Izmir University of Economics, Faculty of Health Sciences, Department of Nursing, Izmir, Turkiye

**Purpose:** In undergraduate nursing education, self-efficacy and self-esteem reinforce individuals' beliefs in their professional competence and can directly impact life satisfaction. This study was employed a relational survey model to examine the effect of self-efficacy on life satisfaction among nursing students and to explore the mediating role of self-esteem in this relationship.

**Methods:** A cross-sectional design was used in the study, which included 85 undergraduate nursing students enrolled at a university in Izmir during the 2022–2023 academic year. Data were collected using a Personal Information Form, Self-Efficacy Scale, Self-Esteem Scale, and Life Satisfaction Scale. Prior to data collection, ethical approval and institutional permission were obtained. All participants were informed about the study, and written informed consent was obtained. Data analysis was conducted using SPSS and AMOS software.

**Results:** The mean age of the participants was  $21.74 \pm 2.25$  years, and 67.1% were female. Self-efficacy significantly and positively predicted self-esteem, which in turn, significantly and positively predicted life satisfaction. The total and direct effects of self-efficacy on life satisfaction was significant. Additionally, the indirect effect of self-efficacy on life satisfaction through self-esteem was also significant. These findings indicate that self-esteem mediates the relationship between self-efficacy and life satisfaction among nursing students.

**Conclusion:** This study demonstrates that self-efficacy and self-esteem have significant positive effects on life satisfaction in nursing students. Therefore, it is recommended that nursing education programs incorporate strategies to enhance students' psychological resilience and self-worth.

**Keywords:** Life Satisfaction, Nursing Student, Self-Esteem, Self-Efficacy.

## OP4

### The “Stop Test” fails to predict pelvic floor muscle strength in women with urinary incontinence: A machine learning analysis

Elif Duygu Yıldız<sup>1</sup>, Seda Yakıt Yeşilyurt<sup>2</sup>, Büsra İnal<sup>1</sup>, Meryem Yalçınkaya<sup>3</sup>, Nuriye Özengin<sup>1</sup>

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<sup>3</sup>Hitit University, Faculty of Engineering, Department of Industrial Engineering, Çorum, Turkiye

**Purpose:** The “Stop Test” evaluates the ability to halt urine flow by contracting the pelvic floor muscles (PFM) during urination and is often used to assess PFM strength in women with urinary incontinence (UI). This study aims to identify if a specific PFM strength threshold exists for successfully stopping urine flow during the “Stop Test” in women with UI, utilizing machine learning techniques.

**Methods:** In this retrospective study, data from 374 women diagnosed with UI were analyzed. PFM strength was measured using vaginal probe via Myomed (ENRAF NONIUS) device. The ability to stop urine flow was categorized into three groups: “unable to stop,” “slowing down,” and “can stop.” An ordinal logistic regression model was applied to assess the effect of PFM strength on the ability to stop urine flow.

**Results:** The majority of women were in the “unable to stop” group (n=191), with 128 women in the “can stop” group and 55 in the “slows down” group. PFM strength, as the independent variable in the logistic regression, was statistically insignificant in predicting the ability to stop urine flow ( $\beta = -0.01$ ,  $p = 0.382$ ).

**Conclusion:** These results suggest that PFM strength alone does not significantly predict the ability to stop or slow down urination in women with UI. Other factors, including reflex control, neurological conditions, and tissue integrity, should be evaluated alongside PFM strength when assessing urinary control.

**Keywords:** Machine Learning, Pelvic Floor Muscle Assessment, Strength, Urinary Incontinence.

## OP5

### Health sciences students' mindfulness levels and their perspectives on war-affected children: A correlational study

Kardelen Sancar<sup>1</sup>, Kader Arslan<sup>1</sup>, Havvanur Kerim<sup>1</sup>,  
Bahise Aydın<sup>2</sup>

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<sup>2</sup>Izmir University of Economics, Faculty of Health Sciences, Department  
of Nursing, Izmir, Turkey

**Purpose:** This study aimed to determine the relationship between mindfulness levels and perspectives toward war-affected children among students from a Health Sciences Faculty.

**Methods:** This descriptive, comparative, and correlational study included 330 students from a Health Sciences Faculty of a state university. Data were collected using the Students' Socio-demographic Data and Perspectives on War-Affected Children Form and the Mindful Attention Awareness Scale. Data analyses were conducted using independent t-tests for pairwise comparisons, ANOVA for comparisons involving more than two groups, and correlation analyses.

**Results:** The mean mindfulness score of students was  $57.05 \pm 11.938$ . It was determined that 54.20% of students held positive attitudes towards war-affected individuals, 81.23% believed war-affected children could be reintegrated into society, and 55.81% stated these children lacked access to healthcare services. Mindfulness levels significantly increased with higher academic grades. Students with positive attitudes toward war-affected individuals were significantly more likely to acknowledge the negative impact of war on children.

**Conclusion:** Health Sciences Faculty students demonstrated insufficient levels of mindfulness and perspectives toward war-affected individuals. Enhancing educational curricula by including comprehensive content related to disadvantaged groups, particularly addressing health needs and service provision for war-affected children, could positively influence students' attitudes and awareness.

**Keywords:** Armed Conflicts, Children, Health, Mindfulness, Students.

## OP6

### Use of digital serious games in nursing education: Systematic review

Nehir Demirel<sup>1</sup>, Ayşe Eminoğlu<sup>2</sup>, Fahriye Oflaz<sup>3</sup>

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<sup>3</sup>Koç University, School of Nursing, İstanbul, Turkiye

**Purpose:** Changes in the healthcare system and emerging technologies require new skills and competences. Traditional methodologies alone are no longer sufficient for educating future health professionals. This systematic review aimed to evaluate the effectiveness of digital serious games in nursing education and to guide researchers in the development of future educational games.

**Methods:** A total of 2,439 participants from 23 studies published between 2015 and 2024 were included. Studies were selected using PICOS criteria. Between November 2023 and January 2024, systematic searches were conducted in PubMed, SCOPUS, Cochrane, EBSCOHost, Web of Science, YÖK National Thesis Center, and Google Scholar using MeSH-compatible keywords in English and Turkish ("serious game," "nurse," "education," "student").

**Results:** Digital serious games improved knowledge retention, enhanced confidence in psychomotor skills, and increased motivation and critical thinking among nursing students. Recommendations included adding language options for wider use, informing students about game content in advance, accommodating left-handed and glasses-wearing users, and using validated in-game assessment tools.

**Conclusion:** The findings indicate that digital serious games can be effectively integrated into standard nursing curricula. They are valuable not only for nursing students but also for patients and learners in general health education.

**Keywords:** Educational Technology, Nursing Education, Serious Game, Students.

## OP7

### Evaluation of educational environment perception in physiotherapy and rehabilitation undergraduate students in different countries: A pilot study

İlayda Elmas, Mustafa Tahsin Özer, Barış Gürpınar

*Izmir University of Economics, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Izmir, Turkiye*

**Purpose:** The aim of this study was to evaluate and compare perceptions of the educational environment among undergraduate Physiotherapy and Rehabilitation students across multiple countries, and to explore similarities and differences in how learners experience and appraise their academic settings using an educational environment assessment tool.

**Methods:** A cross-sectional survey was conducted among third and fourth year physiotherapy and rehabilitation students at universities in Turkiye, Spain, and the United Kingdom. After providing consent, participants completed the Dundee Ready Education Environment Measure (DREEM) questionnaire via Google Forms and supplied demographic information. The DREEM assesses five dimensions of the learning environment: Students' Perceptions of Learning (SPL); Students' Perceptions of Teachers (SPT); Students' Academic SelfPerceptions (SAP); Students' Perceptions of Atmosphere (SPA); and Students' Social SelfPerceptions (SSP).

**Results:** A total of 39 students participated. Country-wise participant numbers were Turkiye (n=18), Spain (n=12), and the United Kingdom (n=9). The overall DREEM score differed significantly across countries ( $p=0.017$ ). Sub-scale analysis revealed significant between-group differences in SPL ( $p=0.010$ ), SPA ( $p=0.031$ ) and SSP ( $p=0.000$ ), whereas SPT ( $p=0.360$ ) and SAP ( $p=0.215$ ) showed no statistically significant variation. Overall, students from Turkiye and the UK reported more positive than negative learning environments, while Spanish students indicated lower perceptions, particularly in SPL and SSP domains, pointing to potential areas for targeted educational improvement.

**Conclusion:** Countryspecific differences in learning environment perceptions underscore the influence of local academic culture and support structures; tailoring interventions to strengthen learning and social domains may enhance student experience and help align physiotherapy education with internationally consistent quality standards.

**Keywords:** Education, Educational Measurement, Learning, Physical Therapy Specialty, Teaching.

## OP8

### The relationship between locus of control and perception of the educational environment in physiotherapy students

İpek Yavas<sup>1,2</sup>, Gonca Sahiner Picak<sup>1,3</sup>, Ridvan Aktan<sup>1</sup>

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<sup>3</sup>*Izmir Bakırçay University, Graduate School of Health Sciences, Izmir, Turkey*

**Purpose:** To assess the relationship between locus of control and the perception of educational environment among students enrolled in an associate degree physiotherapy program.

**Methods:** This study was conducted with 34 students from Physiotherapy Program. Students' perceptions of educational environment were assessed using Dundee Ready Education Environment Measure (DREEM), while their locus of control using Rotter Internal-External Locus of Control Scale. Additional variables such as age, academic year, grade point average, employment status, exercise habits, and technology use were also recorded.

**Results:** Among the participants, 20 (58%) were female, and 20 were first-year students. The mean age was 21.64 (2.3). A total of 23 students (67.6%) exhibited a tendency toward internal locus of control. The mean DREEM total score was 131.44 (22.54), indicating a generally positive perception of educational environment. No significant relationship was found between DREEM total scores and locus of control ( $p>0.05$ ). However, academic self-perception ( $r=-0.618$ ) and perception of learning ( $r=-0.548$ ) were negatively correlated with locus of control scores ( $p<0.05$ ). Additionally, age ( $r=0.581$ ) and grade point average ( $r=0.553$ ) were positively correlated with DREEM total scores ( $p<0.05$ ). Academic year also appeared to positively influence perceptions. Lifestyle variables such as exercise, employment, and technology use showed no significant effect.

**Conclusion:** Students with an internal locus of control have higher perceptions regarding academic competence and learning. Furthermore, increased age and academic success were associated with more positive evaluations of educational environment. Locus of control appears to be an influential individual variable in shaping students' perceptions of their educational setting.

**Keywords:** Educational Environment, Locus of Control, Physiotherapy, Students Perception.

## OP9

### The effects of plyometric and strengthening exercises on jumping and balance in male university students

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**Purpose:** The aim of this study was to compare the effects of plyometric and strength training on performance in healthy male university students.

**Methods:** The study included 45 healthy university students. Participants were divided into three groups as plyometric exercises (n=15), strengthening exercises (n=15) and control group (n=15). The control group did not participate in any exercise intervention and was only involved in the pre- and post-test assessments. The experimental groups performed their respective exercise protocols 3 times per week for 6 weeks. Y Balance Test, Vertical Jump Test and Flamingo Balance Test were applied for evaluation.

**Results:** The results of the study show that both strength and plyometric exercises are effective in improving balance and jump performance in healthy male university students. While statistically significant improvements were recorded in the tests applied in the strength and plyometric exercise group ( $p=0.010$ ), no significant change was observed in the control group ( $p=0.050$ ). When the two experimental groups were compared, there was no statistically significant difference in the results of the Y test ( $p=0.790$ ), vertical jump test ( $p=0.790$ ) and Flamingo test ( $p=0.390$ ).

**Conclusion:** These results reveal the positive effects of both strength and plyometric exercises on balance and jump performance. Our study may provide an important reference for planning training programs to improve athletic performance and may serve as a basis for further evaluation of the effectiveness of these exercises in athlete groups in future studies.

**Keywords:** Balance, Physical Performance, Physiotherapy and Rehabilitation, Plyometric Exercise, Strengthening Exercise.

## OP10

### Investigation of the relationship between pain knowledge and pain attitudes and beliefs in physiotherapy and rehabilitation students

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**Purpose:** This study aimed to investigate the relationship between pain knowledge and pain attitudes and beliefs in physiotherapy and rehabilitation students.

**Methods:** This cross-sectional study included 159 undergraduate physiotherapy and rehabilitation students (3rd-grade n=75, 4th-grade n=84) studying at Dokuz Eylül University Faculty of Physical Therapy and Rehabilitation. The pain knowledge of the students who did their Summer Internship or took the Clinical Practice Course and had clinical contact with the patient was evaluated with the Neurophysiology of Pain Questionnaire (NPQ), which focused on pain neurobiology and neurophysiology, and their pain attitudes and beliefs were evaluated with the Pain Attitudes and Beliefs Scale for Physiotherapists (PABS-PT). According to the sub-scales of the PABS-PT, results were associated with students' biomedical and biopsychosocial tendencies.

**Results:** The total median score was  $6.30 \pm 1.88$  for NPQ. PABS-PT Biomedical and Biopsychosocial sub-scales scores were  $30.16 \pm 5.01$  and  $20.95 \pm 4.40$ , respectively. There was no significant relationship between pain knowledge and the students' biomedical or biopsychosocial tendencies for PABS-PT. However, 4th-grade students tended to be more biopsychosocial in pain management compared to 3rd-grade students ( $p < 0.05$ ). In addition, pain knowledge was higher in students who took specific pain-related Elective course ( $p < 0.05$ ), but PABS-PT results were not significantly different.

**Conclusion:** These results suggest that more clinical training and real patient experience may affect pain management. Targeted pain education may enhance theoretical pain knowledge, but further emphasis on integrating biopsychosocial perspectives into Physiotherapy and Rehabilitation education could be beneficial in shaping students' approaches to pain management.

**Keywords:** Pain Knowledge, Pain Attitudes and Beliefs, Pain Education, Physiotherapy and Rehabilitation.

## OP11

### A comparative analysis of physiotherapy curriculum in globally ranked universities

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**Purpose:** This study aims to compare the characteristics of universities that are ranked globally and offer education in health and medicine.

**Methods:** The 2025 rankings on the Times Higher Education (THE) website were examined for this study. Universities listed in the top 100 under the «Medical and Health» category and located in North America, Europe, or Australia were included. Among these, universities offering physiotherapy education and full curriculum access (n=51) were identified and analyzed.

**Results:** Among 51 universities that include physiotherapy and rehabilitation programs, 41 universities where the full curriculum was accessible were examined. The educational programs offered were 3-year (n=32, 78.04%), 4-year (n=8, 19.51%), and 5-year (n=1, 2.43%) programs. Curriculum content analysis of the programs revealed that basic medical courses (n=40, 97.56%), clinical education (n=40, 97.56%), biopsychosocial courses (n=18, 43.90%), technology-related courses (n=13, 34.70%), neuroscience (n=11, 26.82%), basic science courses (n=8, 19.51%) were included in the majority of universities. Also, some universities (n=10, 24.39%) offer academic support courses according to students' interest in postgraduate study.

**Conclusion:** The physiotherapy curricula of the 41 universities ranked in the top 100 in the «Medical and Health» category of THE rankings in North America, Europe, and Australia have various differences. This analysis is limited to the data provided on the universities' official websites. However, universities that include biopsychosocial courses, neuroscience, and technology-oriented courses in their curricula appear to offer a comparative advantage over others for physiotherapy education.

**Keywords:** Curriculum, Education, Physiotherapy.

## OP12

### Digital gaming and its impact on physical activity, sleep patterns, and health: A descriptive study

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**Purpose:** The widespread rise of digital gaming has raised questions about its impact on individuals' physical activity, sleep habits, and general health. Although digital games provide entertainment and cognitive engagement, excessive use may result in sedentary behavior, disrupted sleep, and physical health issues. This study aimed to examine the physical activity levels, sleep patterns, and health conditions of regular digital gamers.

**Methods:** The study included 40 participants aged 18–40 who regularly played digital games. Data were collected via an online questionnaire focusing on gaming habits, physical activity frequency and intensity, sleep quality, and self-reported health conditions. Physical activity levels were classified as low, moderate, or high. Sleep quality was assessed through subjective reports on sleep duration and disturbances. Participants also indicated if they experienced musculoskeletal pain. Descriptive statistics were used for analysis.

**Results:** Among participants, 50% reported low physical activity, 35% moderate, and 15% high activity in the past month. In terms of sleep, 75% had reported disruptions in sleep, while 37.5% reported sleeping less than seven hours per night. Participants reported physical discomfort during gaming (52,5%). Most common problem was back pain (45%) followed by eye discomfort (40%). Participants who played digital games more than four hours daily were more likely to have lower physical activity and poorer sleep.

**Conclusion:** The study highlights that frequent gamers may face reduced physical activity, disrupted sleep, and health problems. Promoting regular exercise and healthier sleep routines may help address these issues. Future studies with larger samples are needed for deeper insights.

**Keywords:** Esports, Gaming, Health, Physical Activity.

## OP13

### The relationship between physical activity score, exercise benefit/barrier perception and menopausal symptoms in menopausal women

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**Purpose:** The aim of this study was to examine the relationship between physical activity score, perception of exercise benefit/barrier and menopausal symptoms in menopausal women.

**Methods:** The study included 81 menopausal women. After recording the physical and sociodemographic information of the individuals, physical activity scores were assessed using the International Physical Activity Questionnaire-Short Form (IPAQ-SF), exercise benefit/barrier perception using the Exercise Benefit/Barrier Scale (EBBS), and menopausal symptoms using the Menopause Symptoms Assessment Scale (MSAS).

**Results:** The mean age of the women was 53.64±5.30 years. A negative and statistically significant correlation was found between Exercise Barrier Scale and Benefit Scale scores ( $r=-0.331$ ,  $p<0.05$ ). No significant correlation was found between the Barrier Scale score, IPAQ-SF score and MSAS score ( $p>0.05$ ). Similarly, the relationship between the Benefit Scale score and IPAQ-SF score and MSAS score was not statistically significant ( $p>0.05$ ). Also, the relationship between IPAQ-SF score and MSAS score was not statistically significant ( $p>0.05$ ).

**Conclusion:** As a result, there was no relationship between physical activity score, exercise barrier/benefit perception and menopausal symptoms in menopausal women. It was concluded that as women's perception of exercise benefits increased, their perception of barrier decreased. In line with the findings of this study, it is recommended that training and awareness programmes should be organised to increase the perception of exercise benefit of menopausal women. In addition strengthening social support mechanisms to encourage physical activity and providing exercise programs tailored to individual needs may contribute to the healthy aging process of this group.

**Keywords:** Exercise, Menopause, Physical Activity.

## OP14

### Global trends in evidence-based cardiopulmonary physiotherapy education: A bibliometric analysis

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**Purpose:** The aim of this study was to explore global publication trends and emerging themes in evidence-based cardiopulmonary physiotherapy education by conducting a comprehensive bibliometric analysis.

**Methods:** A systematic search was performed in the Web of Science Core Collection using a predefined search strategy with terms related to “cardiopulmonary physiotherapy”, “cardiac rehabilitation,” “pulmonary rehabilitation,” “physiotherapy education,” and “evidence-based practice.” English-language articles and reviews published between 2000 and 2025 were included. A total of 225 eligible documents were analyzed using the Bibliometrix package with the R program, Biblioshiny software to map co-occurrence of keywords and thematic clusters.

**Results:** Publication activity has significantly increased, particularly in the past decade. The most active countries included the United States, Canada, Australia, and the United Kingdom. Frequently occurring terms were “cardiac rehabilitation,” “COPD,” “education,” “exercise training,” and “health education.” Co-occurrence analysis revealed three major thematic clusters: (1) clinical education and guidelines; (2) psychosocial and behavioral interventions; (3) digital and telehealth-based education models. The most cited articles focused on structured rehabilitation programs, guideline-based care, and the integration of tele-education platforms. Institutional collaboration networks demonstrated strong links among research centers in North America and Europe, while keyword evolution indicated a shift from traditional clinical training to technology-supported education approaches.

**Conclusion:** The results highlight a growing emphasis on evidence-based practices in cardiopulmonary physiotherapy education. The thematic clusters reflect both traditional and emerging priorities, such as patient-centered approaches and digital transformation in education. These findings can inform curriculum development and interdisciplinary training strategies in health sciences education.

**Keywords:** Cardiac Rehabilitation, Education, Evidence-Based Practice, Physical Therapy Modalities, Respiratory Therapy.

## OP15

### Attitudes toward gender roles among faculty of medicine students

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**Purpose:** Gender inequality remains a persistent issue in Türkiye, contributing to the reinforcement of traditional gender norms. For future healthcare professionals, awareness of gender equality is essential to promote inclusive and equitable healthcare delivery. This study aimed to investigate the attitudes of medicine students toward gender roles and equality.

**Methods:** This descriptive, cross-sectional study was conducted with 111 medical students at a foundation university. Data were collected via self-reported online survey (Sociodemographic Information Form and the Gender Norm Attitudes Scale (GNAS)) between May and June 2022.

**Results:** The participants' mean age was  $21.24 \pm 1.63$ , 75.7% were female, and 69.4% reported having grown up in a city. While 80.2% of participants acknowledged the presence of gender inequality within the healthcare sector, 93.7% anticipated encountering gender-based discrimination from patients during their professional practice. The means of «Equality for Girls» subscales are similar in females and males ( $19.08 \pm 1.41$  and  $19.55 \pm 0.97$ , respectively). Females' mean of «Rights and Privileges of Men» subscale is higher than mean of males ( $46.66 \pm 5.73$  and  $41.32 \pm 9.47$ , respectively). ( $p < 0.01$ , Student's t test). Statistically significant differences were observed in attitudes toward infant care ( $p < 0.05$ ) and the use of slang or vulgar language ( $p < 0.001$ ), based on Fisher's Exact Test.

**Conclusion:** Female students exhibited more egalitarian attitudes toward gender roles compared to their male counterparts. Although female students demonstrated more progressive views overall, the persistence of certain inequitable attitudes emphasizes the importance of integrating structured gender equality education into medical and health sciences curricula to promote inclusive and equitable professional practice.

**Keywords:** Gender Roles, Gender Equality, Medical Students, Gender Norms, Health Education.

## OP16

### Effects of self-compassion and selected factors on attitudes towards pain assessment in nursing students: A descriptive cross-sectional study

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**Purpose:** The aim of this study was to examine the effects of self-compassion and other factors on nursing students' attitudes towards pain assessment.

**Methods:** A descriptive-cross-sectional correlational design was used. The study was conducted at a nursing department of a University in Turkey between 4 December 2023-5 August 2024 in the 2023-2024 academic year. The study population consisted of 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> year nursing students with clinical practice experience ( $N = 172$ ). The research sample included 141 nursing students and a convenience sampling method was used. Data were collected with 'Student Descriptive Information Form', "Nursing Students' Attitudes Scale Toward Pain Assessment" and "Self-compassion Scale". Descriptive analyses of the demographic characteristics, correlation analyses and multivariate linear regressions of the five variables were performed.

**Results:** The total mean score of the attitude scale towards pain assessment was  $64.42 \pm 9.18$  (min=25; max=75) and the total mean score of the self-compassion scale was  $2.82 \pm 0.38$  (min=2.08; max=4.00). The female gender and age were predictive of the attitude towards pain assessment ( $p < 0.05$ ); however students' self-compassion and academic years were not predictive of the attitude towards pain assessment ( $p > 0.05$ ).

**Conclusions:** The students who participated in this study had high attitudes towards pain assessment and moderate self-compassion. Female students had more positive attitudes towards pain assessment than male students. As students' ages increased, their attitudes towards pain assessment also increased positively. However, academic year and self-compassion had no effect on their attitudes towards pain assessment. Self-compassion courses may be recommended to be added to the curriculum.

**Keywords:** Attitude, Nursing Students, Pain Assessment, Self-Compassion.

## OP17

### The mediating role of psychological well-being in the association between intolerance of uncertainty and academic life satisfaction among university students

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**Purpose:** University students frequently encounter uncertainty during their academic lives, which can affect their psychological well-being and academic life satisfaction. This study aims to explore the mediating role of psychological well-being in the relationship between intolerance of uncertainty and academic life satisfaction among university students.

**Methods:** A cross-sectional design was utilized in this study, involving 443 students enrolled at a university in Izmir, between May and July 2023. Data were collected using a Personal Information Form, Academic Life Satisfaction Scale, Intolerance of Uncertainty Scale, and Psychological Well-Being Scale. Ethical approval and institutional permission were obtained prior to the commencement of the study. All participants were informed about the study, and informed consent was obtained. Data analysis was performed using SPSS and the AMOS software.

**Results:** Of the participants, 55.5% were female, 35.7% had one sibling, 53.5% lived with their families and the mean age was  $21.31 \pm 1.91$  years. The results indicate that psychological well-being significantly mediates the relationship between inhibitory anxiety and both dimensions of academic life satisfaction. However, psychological well-being did not mediate the relationship between prospective anxiety and academic life satisfaction. These findings emphasize the differential impact of various types of anxiety on academic life and highlight the importance of promoting psychological well-being to enhance students' academic life satisfaction.

**Conclusion:** The study suggests that supporting university students' psychological well-being may be an important strategy in addressing intolerance of uncertainty and improving academic life satisfaction.

**Keywords:** Academic Performance, Psychological Well-Being, Students, Uncertainty.

## OP18

### Effect of lower urinary tract symptoms on balance and fall risk in women with multiple sclerosis

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**Purpose:** Balance problems and falls are very common in individuals with multiple sclerosis (MS) and there are many risk factors that can cause falls. The purpose of this study was to evaluate the effect of lower urinary tract symptoms (LUTS) on balance and fall risk in women with MS.

**Methods:** 48 women with MS with a mean age of  $41.13 \pm 10.93$  years were included in the study. After recording the socio-demographic characteristics of the women, their LUTS were assessed with the Bristol Female Lower Urinary Tract Symptoms Index (BFLUTSI), their overactive bladder symptoms with the Overactive Bladder Questionnaire-V8 (OAB-V8), and their fall risks, static and dynamic balance were assessed with the Biodex balance system. The type of urinary incontinence(UI) of the women was determined according to the BFLUTSI. Women were classified according to their LUTS as non-UI, urge UI, stress UI and mixed UI.

**Results:** It was found that as the BFLUTSI storage sub-dimension score increased in women with MS, dynamic balance decreased ( $p=0.034$ ) and the risk of falling ( $p=0.002$ ). It was determined that the fall risk and balance of MS women classified according to their LUTS were similar.

**Conclusion:** In this study, it was found that as women's complaints about bladder storage increased, their dynamic balance decreased and their risk of falling increased. It was thought that UI problems should not be ignored while investigating the factors that cause balance problems and falls in MS women and that it would be useful to examine their LUTS in their evaluations.

**Keywords:** Multiple Sclerosis, Postural Balance, Urination Disorders, Urinary Incontinence, Women's Health.

## OP19

### Physiotherapy approach after radial artery aneurysm repair: A case report

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**Purpose:** Radial artery aneurysms are rare peripheral vascular conditions that may compress adjacent neural structures, leading to motor and sensory deficits. Postoperative physiotherapy can support functional recovery, yet its application in such cases is rarely reported. This case aims to highlight the role of physiotherapy after radial artery aneurysm repair.

**Methods:** A male patient diagnosed with a radial artery aneurysm extending 3 cm proximally from the wrist underwent surgical repair under local anesthesia. The aneurysmal sac was compressing the superficial branch of the radial nerve. After surgical removal of the sac and nerve decompression, a physiotherapy program was initiated post wound healing. The program included active and passive range of motion exercises, soft tissue mobilization, nerve gliding techniques, and proprioceptive training.

**Results:** Preoperatively, the patient experienced hand coldness, numbness, chilliness, and muscle weakness. These symptoms were consistent with anatomical nerve compression observed during surgery. Following physiotherapy, significant improvements were noted in sensory symptoms and hand function.

**Conclusion:** This case suggests that individualized physiotherapy following arterial repair can accelerate recovery in patients with motor and sensory impairments due to vascular compression. Physiotherapists should be involved in the multidisciplinary care of such cases to enhance functional outcomes.

**Keywords:** Exercise Therapy, Nerve Compression Syndromes, Peripheral Nervous System Diseases, Postoperative Care, Wrist Joint.

## OP20

### Educational interventions for patients undergoing surgery: a review of current evidence

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**Purpose:** To summarize current theses evaluating the effects of educational interventions applied to patients undergoing different surgical procedures on the physical, psychological, and functional outcomes of patients.

**Methods:** The literature review examined theses published in the YOK thesis in from 2024 to 2025, focusing on different educational approaches for surgical patients. Most studies have a randomized controlled experimental design and include methods such as web-based education, video-assisted education, virtual reality, and traditional educational materials (booklets, brochures).

**Results:** Web-based education and telephone counseling improved stoma compliance and quality of life in patients with stomas. Video-assisted education, structured programs, and telehealth applications provided significant improvements in parameters such as anxiety, pain, comfort, lymphedema, and shoulder dysfunction in patients undergoing breast surgery and mastectomy.

In abdominal surgeries, video-assisted early mobilization education and preoperative information reduced anxiety levels and increased mobilization. In orthopedic surgeries, mobile-based exercise programs and video training showed positive effects on anxiety, fear, functionality, and quality of life. In undergoing cardiac surgery, mobile applications, animation-based education, video-assisted education, and virtual reality had positive effects on discharge preparation, self-efficacy, and psychological well-being. In the fields of neurosurgery and organ transplantation, virtual reality and smartphone applications be effective in reducing anxiety, improving quality of life, enhancing hemodynamic parameters, and increasing treatment compliance.

**Conclusion:** Structured and technologically supported educational interventions for surgical patients are effective in improving patient outcomes at every stage of the surgical process. These findings emphasize the importance of individualizing patient education and integrating digital technologies into clinical practice.

**Keywords:** Education, Patients, Surgical Procedures.

## OP21

### Integration of team-based learning and artificial intelligence as an active learning method in nursing education

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Active learning methods in contemporary nursing education encourage students to take responsibility and foster critical thinking and problem-solving skills. Team-Based Learning (TBL), one such method, incorporates structured cooperative learning principles, involving both individual and team-based activities. Integrating TBL with artificial intelligence (AI) technologies could enhance the effectiveness of learning processes in nursing education. This review evaluates the use, advantages, and limitations of TBL in nursing education and examines the potential integration of AI applications into educational processes.

An AI-supported TBL approach can provide personalized learning experiences, assess students' readiness levels, deliver individually tailored learning materials, and effectively evaluate intra-team dynamics. This integration may thereby enhance students' responsibility for learning and further develop their critical thinking, clinical decision-making and problem-solving competencies. Additionally, employing AI-based tools enables objective evaluation of student performance and timely identification of individual developmental needs.

In conclusion, integrating AI with TBL in nursing education holds promising potential to enrich educational processes and enhance the quality of learning outcomes. Future studies are recommended to evaluate the impacts of this integration on both academic achievement and clinical competencies.

**Keywords:** Artificial Intelligence, Education, Educational Technology, Nursing, Problem-Based Learning.

## OP22

### Relationship between shoulder rotational isometric muscle strength and physical performance in overhead athletes

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**Purpose:** The aim of this study was to investigate the relationship between shoulder rotational isometric muscle strength and physical performance in overhead athletes.

**Methods:** Sixty overhead athletes mean aged  $18.97 \pm 1.46$  years (31 volleyball, 27 handball, and 2 basketball players; 35 M, 25 F) were included in the study. Shoulder isometric internal and external rotation muscle strength was assessed using a digital handheld dynamometer. Performance was assessed with Closed Kinetic Chain Upper Extremity Stability Test (CKUEST), Upper Quarter Y Balance Test, and Functional Throwing Performance Index (FTPI). Each measurement was repeated 3 times and the results were averaged. The relationship between the relevant parameters was assessed using the Spearman Correlation Coefficient.

**Results:** In this study, a positive moderate correlation was found between shoulder internal rotation isometric muscle strength with CKUEST ( $\rho=0.63$ ,  $p=0.00$ ), UQYBT medial reach distance ( $\rho=0.55$ ,  $p=0.00$ ), and UQYBT inferolateral reach distance ( $\rho=0.44$ ,  $p=0.000$ ). A positive moderate correlation was found between shoulder external rotation isometric muscle strength with CKUEST ( $\rho=0.678$ ,  $p=0.000$ ), UQYBT medial reach distance ( $\rho=0.467$ ,  $p=0.000$ ), and UQYBT inferolateral reach distance ( $\rho=0.409$ ,  $p=0.00$ ).

**Conclusion:** In overhead athletes, increases in shoulder internal and external rotator muscle strength were found to be associated with improvements in CKUEST performance, as well as greater reach distances in the medial and inferolateral directions of the Upper Quarter Y Balance Test (UQYBT). This finding may be attributed to the fact that increased rotational strength enhances shoulder stability and neuromuscular control, which are critical for optimal upper extremity functional performance.

**Keywords:** Functional Performance, Neuromuscular Control, Stability.

**OP23****The use of poverty simulations in public health education**Ebru Diğrak*Izmir University of Economics, Faculty of Health Sciences, Department of Nursing, Izmir, Turkiye*

**Purpose:** Poverty, which is increasing globally, is a significant social determinant of health that profoundly affects individuals and communities. For public health professionals, understanding the multifaceted impacts of poverty is critical for developing effective interventions. In this context, poverty simulations have been developed as innovative educational tools that allow health professionals to experience the daily struggles of low-income individuals and families. These simulations aim to raise awareness of health inequities, highlight the constraints imposed by poverty, and foster empathy by providing a more realistic perspective on social determinants of health. This study aims to evaluate the impact of poverty simulations in public health and nursing education.

**Methods:** A review of peer-reviewed publications was conducted, focusing on nursing and public health students' participation in poverty simulations. The analysis emphasized educational outcomes, ethical considerations, and implementation frameworks.

**Results:** Poverty simulations have been shown to enhance empathy, increase awareness of social determinants, and deepen understanding of income inequality and social mobility. These interventions also contribute to the development of more positive attitudes toward individuals living in poverty and strengthen participants' commitment to the principle of social justice. However, concerns regarding the sustainability of these approaches, their ethical implementation, and the need for cultural sensitivity remain important considerations.

**Conclusion:** Poverty simulations are considered effective tools for enhancing empathy and critical thinking in public health education. Future research should focus on the long-term outcomes and best practices for integrating these tools into diverse educational settings.

**Keywords:** Education, Health Equity, Poverty Simulation, Public Health, Social Determinants.

**OP24****Investigation of the relationship between academic motivation and course success in physiotherapy and rehabilitation undergraduate students**Mustafa Tahsin Özer, Burcu Ece Korkmaz, Ata Elvan*Izmir University of Economics, Faculty of Health Sciences, Department of Physiotherapy and Rehabilitation, Izmir, Turkiye*

**Purpose:** Motivation, a situation that elicits, directs and sustains behavior, is defined as a mental force in achieving a goal. One of the most important problems encountered in academic education is that students do not think they have sufficient self-efficacy. Physiotherapy and Rehabilitation education is a field of expertise that encompasses clinical and academic practices that aim to improve the quality of life of individuals. In this process, the professional competence and motivation levels of students are directly related to their adaptation to the clinical environment and professional success after graduation.

**Methods:** The study was conducted on 2nd and 3rd year students studying at Izmir University of Economics. Data was collected via GoogleForms. Age, gender, current class and Cumulative Grade Point Average (CGPA) information was recorded. The CGPA is classified according to the quatrains system. Additionally, an academic motivation scale was evaluated.

**Results:** 45 students (24 female, 21 male) participated in the study. CGPA values were grouped according to the 4-point system. Intergroup evaluation was done with one-way ANOVA. The means of the academic motivation scale between the groups are significantly different from each other. Students with higher grade point averages were found to have higher academic motivation values.

**Conclusion:** The results show a positive correlation between CGPA and academic motivation, suggesting motivated physiotherapy students achieve better academic performance.

**Keywords:** Average, Cumulative Grade Point, Physiotherapy Education, Self-Sufficiency.