

# Rehabilitation

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April 2024

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## What does it mean to be a population health fellow as an allied health professional?

Gwyneth Ataderie explains why her fellowship in population health aligns well with her role as an occupational therapist – and why more allied health professionals should consider pursuing fellowships.

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### 1. Measuring and describing perceived quality on physiotherapy practice management software

**Authors:** Arza-Moncunill, Eduardo;Agustín, Rodrigo Martín-San and Medina-Mirapeix, Francesc

**Publication Date:** 2024

**Journal:** International Journal of Medical Informatics 185, pp. 105406

**Abstract:** Introduction: Despite the growing trend in the use of digital technologies in physiotherapy, the overall adoption and satisfaction of both, practice management software (PMS) and electronic health records in physiotherapy clinics has been low and slow over time. Satisfaction of expectations or perceived quality (PQ) is an abstract construct based on the discrepancy between expectations and perceptions, to measure the satisfaction of physiotherapists on PMS. This study aims to develop and validate an instrument to measure PQ on PMS, and to describe the PQ of the currently available physiotherapy PMS.; Methods: Instrument development study with validity and reliability testing. The development of this questionnaire was conducted in 3 phases: identification of attributes to be explored; development of the item pairs and pretesting; pilot study for item reduction, and psychometric testing. The questionnaire was distributed to chartered physiotherapists. A total of 144 participants completed the questionnaire.; Results: A series of analyses were conducted to assess item reduction, factor structure of the questionnaire and metric properties of multi-item scales. From the initial 43 attributes, the final version of the Quality Questionnaire on Physiotherapy Practice Management Software consisted of 24 items of PQ on PMS, structured in 3 areas (clinical care, administrative activities, and accounting), which included 11, 9, and 4 items grouped into 4, 3, and 2 scales respectively. The questionnaire proved to be reliable and valid. In multitrait scaling analysis, all scores had strong item-scale correlations, excellent item scaling success, and good internal consistency (Cronbach alpha coefficients of >0.7).; Conclusions: Our study provides a valuable PQ questionnaire on PMS attributes for clinical care, administrative activities, and accounting. The attributes related to clinical care and control stock supplies showed a worse PQ. This suggests that those functions related to clinical care should be improved to facilitate greater satisfaction with physiotherapy PMS.; Competing Interests: Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. (Copyright © 2024 The Authors. Published by Elsevier B.V. All rights reserved.)

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### 2. Dysphagia and Enteral Feeding After Stroke in the Rehabilitation Setting

**Authors:** Braun, Robynne G.;Arata, Jodi and Gonzalez-Fernandez, Marlis

**Publication Date:** 2024

**Journal:** Physical Medicine and Rehabilitation Clinics of North America 35(2), pp. 433-443

**Abstract:** Physiatrists play a vital role in post-stroke dysphagia management not only by providing guidance on the risks, benefits, and efficacy of various treatment options but also as advocates for patients' independence and quality of life. While swallow study results are often discussed broadly by acute stroke clinicians as "pass/fail" findings, physiatrists need a more nuanced working knowledge of dysphagia diagnosis and treatment that encompasses swallow pathophysiology, targeted treatment strategies, and prognosis for recovery. To that end, this review summarizes current clinical practice guidelines on dysphagia, nutrition and oral care, risks and benefits of differing enteral access routes, prognostic factors, and approaches to rehabilitation. (Copyright © 2023 Elsevier Inc. All rights reserved.)

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### 3. Health Care Disparities in Stroke Rehabilitation

**Authors:** Chavez, Audrie A.;Simmonds, Kent P.;Venkatachalam, Aardhra M. and Ifejika, Nneka L.

**Publication Date:** 2024

**Journal:** Physical Medicine and Rehabilitation Clinics of North America 35(2), pp. 293-303

**Abstract:** Stroke outcomes are influenced by factors such as education, lifestyle, and access to care, which determine the extent of functional recovery. Disparities in stroke rehabilitation research have traditionally included age, race/ethnicity, and sex, but other areas make up a gap in the literature. This article conducted a literature review of original research articles published between 2008 and 2022. The article also expands on research that highlights stroke disparities in risk factors, rehabilitative stroke care, language barriers, outcomes for stroke survivors, and interventions focused on rehabilitative stroke disparities. (Copyright © 2023 Elsevier Inc. All rights reserved.)

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#### 4. Stroke Recovery, Rehabilitation, and Innovation

**Authors:** Eapen, Blessen C.

**Publication Date:** 2024

**Journal:** Physical Medicine and Rehabilitation Clinics of North America 35(2), pp. xv-xvi

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#### 5. Evaluating the effects of mobile application-based rehabilitation on improving disability and pain in patients with disputed thoracic outlet syndrome: A randomized controlled trial

**Authors:** Goharinejad, Saeideh;Ahrari, Mohammad Naeem;Moulaei, Khadijeh and Sarafinejad, Afshin

**Publication Date:** 2024

**Journal:** International Journal of Medical Informatics 185, pp. 105400

**Abstract:** Background: Disputed thoracic outlet syndrome (D.TOS) stands as one of the primary global contributors to physical disability, presenting diagnostic and treatment challenges for patients and frequently resulting in prolonged periods of pain and functional impairment. Mobile applications emerge as a promising avenue in aiding patient self-management and rehabilitation for D.TOS. This study aimed to investigate the impact of a certain mobile application-based rehabilitation on pain relief and the improvement of disability in patients experiencing D.TOS.; Methods: Eighty-eight patients diagnosed with D.TOS randomized 1:1 to either the control group (n = 44) or the intervention group (n = 44). Participants in the control group were provided with a brochure containing standard rehabilitation exercise instructions, a written drug prescription from the physician, and guidance on recommended physical activity levels, including home exercises. In contrast, all participants in the intervention group used the mobile application. Disability and pain levels in patients were assessed after six weeks in both groups.; Result: Both groups improved pain and disability based on the scaled measurements. According to the questionnaire scale, the intervention group showed a considerable decline in disability; however, there was a significant difference in just one question (P 0.05).; Conclusion: Mobile applications are promising tools for alleviating disabilities and pain in patients with musculoskeletal conditions. This study confirmed the potential of mobile technology to enhance active and corrective physical activity, thereby reducing pain in patients with D.TOS.; Trial Registration: Iranian Registry of Clinical Trials (IRCT) with the identifier IRCT20141221020380N3 (<http://www.irct.ir/>).; Competing Interests: Declaration of competing interest The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper. (Copyright © 2024 Elsevier B.V. All rights reserved.)

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#### 6. Management of Sleep-Disordered Breathing in a Spinal Cord Injury Rehabilitation Center: Model of Care Adaptation and Implementation

**Authors:** Graco, Marnie;Weber, Gerard;Saravanan, Krisha;Curran, Jacqueline;Whitehead, Nicole;Ross, Jacqueline;DelaCruz, Charito;Sood, Samriti;Heriseanu, Roxana E.;Chai-Coetzer, Ching;Berlowitz, David J. and Joffe, David

**Publication Date:** 2024

**Journal:** Topics in Spinal Cord Injury Rehabilitation 30(1), pp. 113-130

**Abstract:** Background: Obstructive sleep apnea (OSA) is highly prevalent and poorly managed in spinal cord injury (SCI). Alternative management models are urgently needed to improve access to care. We previously described the unique models of three SCI rehabilitation centers that independently manage uncomplicated OSA.; Objectives: The primary objective was to adapt and implement a similar rehabilitation-led model of managing OSA in an SCI rehabilitation center in Australia. Secondary objectives were to identify the local barriers to implementation and develop and deliver tailored interventions to address them.; Methods: A clinical advisory group comprised of rehabilitation clinicians, external respiratory clinicians, and researchers adapted and developed the care model. A theory-informed needs analysis was performed to identify local barriers to implementation. Tailored behavior change interventions were developed to address the barriers and prepare the center for implementation.; Results: Pathways for ambulatory assessments and treatments were developed, which included referral for specialist respiratory management of complicated cases. Roles were allocated to the team of rehabilitation doctors, physiotherapists, and nurses. The team initially lacked sufficient knowledge, skills, and confidence to deliver the OSA care model. To address this, comprehensive education and training were provided. Diagnostic and treatment equipment were acquired. The OSA care model was implemented in July 2022.; Conclusion: This is the first time a rehabilitation-led model of managing OSA has been implemented in an SCI rehabilitation center in Australia. We describe a theory-informed method of adapting the model of care, assessing the barriers, and delivering interventions to overcome them. Results of the mixed-methods evaluation will be reported separately.; Competing Interests: Conflicts of Interest M.G., D.B., and C.L.C. have been involved in research studies that have received equipment and/or funding support from ResMed and Philips Respironics. The other authors declare no conflicts of interest. (© 2024 American Spinal Injury Association.)

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## 7. Pediatric Occupational Therapists' Perspectives on Sleep: A Qualitative Descriptive Study

**Authors:** Hartman, Amy G.;Caspero, Kaitlyn;Bodison, Stefanie C.;Soehner, Adriane;Akcakaya, Murat;DeAlmeida, Dilhari and Bendixen, Roxanna

**Publication Date:** 2024

**Journal:** The American Journal of Occupational Therapy : Official Publication of the American Occupational Therapy Association 78(3)

**Abstract:** Importance: Insufficient sleep is common among children seeking occupational therapy services but is rarely a focus of therapy despite sleep's critical impact on health.; Objective: To examine pediatric occupational therapists' experiences, views, and confidence in addressing sleep concerns in their practice as well as barriers to and supports for doing so.; Design: A qualitative descriptive study with thematic analysis of data from 1-hr virtual interviews. Rapport building, multiple-coder analysis, and member checking were used to ensure reliability and validity.; Setting: Interviews were conducted remotely at each participant's preferred time and location.; Participants: Pediatric occupational therapists (N = 20) practicing across multiple settings in the United States were recruited through emails directed to their place of work and social media posts. A goal of 20 participants was set a priori with the goal of thematic saturation.; Outcomes and Measures: A semistructured interview guide.; Results: Participants were predominately cisgender (95%), female (85%), and White, non-Hispanic (90%). Overall, they voiced the importance of sleep but reported almost never writing sleep-related goals. Reported barriers that affected the participants' ability to fully address sleep in practice included therapists' lack of confidence and knowledge and low caregiver buy-in.; Conclusions and Relevance: The findings identify themes on the basis of which actionable steps toward promoting occupational

therapists as sleep champions can be developed. Future implications include increasing sleep education opportunities, enhancing awareness of sleep health's impact on goal areas, and facilitating discussions about occupational therapy's role within the medical system and family system in supporting sleep. Plain-Language Summary: This qualitative study identifies what helps and hinders occupational therapists in addressing the sleep health concerns of their clients. We give occupational therapy clinicians and educators key supports to seek out or barriers to address. (Copyright © 2024 by the American Occupational Therapy Association, Inc.)

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## 8. Optimal Medical Therapy for Stable Ischemic Heart Disease in 2024: Focus on Exercise and Cardiac Rehabilitation

**Authors:** Khadanga, Sherrie and Beebe-Peat, Tanesha

**Publication Date:** 2024

**Journal:** The Medical Clinics of North America 108(3), pp. 509-516

**Abstract:** Given the prevalence of chronic coronary disease, efforts should be made toward risk factor modification. Cardiac rehabilitation is a secondary prevention program consisting of tailored exercise and lifestyle counseling and has been shown to not only reduce cardiovascular morbidity and mortality but also improve quality of life and exercise capacity. Despite the benefits, it remains underutilized. Efforts should be made to increase referral for patients with chronic coronary disease to aid in symptom management and reduction of cardiovascular risk factors.; **Competing Interests:** Disclosure All authors have nothing to disclose. There are no relationships with industry for any of the authors. (Copyright © 2023 Elsevier Inc. All rights reserved.)

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## 9. Promoting physical activity in rheumatoid arthritis through a physiotherapist led behaviour change-based intervention (PIPPRA): a feasibility randomised trial

**Authors:** Larkin, Louise;McKenna, Seán;Pyne, Tadhg;Comerford, Paul;Moses, Anusha;Folan, Ailish;Gallagher, Stephen;Glynn, Liam;Fraser, Alexander;Esbensen, Bente Appel and Kennedy, Norelee

**Publication Date:** 2024

**Journal:** Rheumatology International 44(5), pp. 779-793

**Abstract:** Physical activity (PA) is recommended as a key component in the management of people with rheumatoid arthritis (RA). The objective of this study was to examine the feasibility of a physiotherapist led, behaviour change (BC) theory-informed, intervention to promote PA in people with RA who have low levels of current PA. A feasibility randomised trial (ClinicalTrials.gov NCT03644160) of people with RA over 18 years recruited from outpatient rheumatology clinics and classified as insufficiently physically active using the Godin-Shephard Leisure Time Physical Activity Questionnaire. Participants were randomised to intervention group (4 BC physiotherapy sessions in 8 weeks) delivered in person/virtually or control group (PA information leaflet only). Feasibility targets (eligibility, recruitment, and refusal), protocol adherence and acceptability were measured. Health care professionals (HCPs) involved in the study and patients in the intervention and control arms were interviewed to determine acceptability. Descriptive statistics were used to analyse the data with SPSS (v27) with interviews analysed using content analysis using NVivo (v14). Three hundred and twenty participants were identified as potentially eligible, with n = 183 (57%) eligible to participate, of which n = 58 (32%) consented to participate. The recruitment rate was 6.4 per month. Due to the impact of COVID-19 on the study, recruitment took place over two separate phases in 2020 and 2021. Of the 25 participants completing the full study, 23 were female (mean age 60 years (SD 11.5)), with n = 11 allocated to intervention group and n = 14 to control. Intervention group participants completed 100% of sessions 1 & 2, 88% of session 3 and 81% of session 4. The study design and intervention were acceptable overall to participants, with enhancements suggested. The PIPRA study to improve promote physical activity in people with RA who have low PA levels was feasible, acceptable and safe.

Despite the impact of COVID-19 on the recruitment and retention of patients, the study provides preliminary evidence that this physiotherapist led BC intervention is feasible and a full definitive intervention should be undertaken. Health care professionals involved in the study delivery and the patient participants described a number of positive aspects to the study with some suggestions to enhance the design. These findings hence inform the design of a future efficacy-focused clinical trial. (© 2024. The Author(s).)

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#### **10. Exploring the personal stroke and rehabilitation experiences of older adults with chronic stroke during the COVID-19 pandemic: a qualitative descriptive study**

**Authors:** Lee, Nicole P.; Pearson, Erin S.; Sanzo, Paolo and Klarner, Taryn

**Publication Date:** 2024

**Journal:** International Journal of Qualitative Studies on Health and Well-Being 19(1), pp. 2331431

**Abstract:** Purpose: The purpose of this study was to explore the personal stroke and rehabilitation experiences of older adults with chronic stroke living in a mid-sized Northwestern Ontario city in Canada during the COVID-19 pandemic.; Methods: A qualitative descriptive approach with a constructivist worldview was used. In addition, a semi-structured interview guide was used to gather the participants' perspectives on their experiences throughout stroke recovery. Ten participants were interviewed, including six males and four females. The interviews were completed, transcribed, and analysed using inductive and deductive content analysis. Multiple steps were taken to enhance data trustworthiness.; Results: Six main themes and eight related subthemes emerged. These included: getting help is complex, the effects of stroke are multifaceted, losing rehabilitation services during the COVID-19 pandemic, overcoming hardships but not alone, "If you don't use it, you lost it": rehabilitative success is based on one's actions, and "look at me now": the importance of taking pride in one's successes.; Conclusions: One unique finding was that the participants used this study as an opportunity to teach and advocate for future stroke survivors which is not often seen in qualitative stroke rehabilitation research. Future stroke research should place emphasis on both the positive and negative experiences of this population.

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#### **11. Efficacy of exercise rehabilitation for managing patients with Alzheimer's disease**

**Authors:** Li, Dan; Jia, Jinning; Zeng, Haibo; Zhong, Xiaoyan; Chen, Hui and Yi, Chenju

**Publication Date:** 2024

**Journal:** Neural Regeneration Research 19(10), pp. 2175-2188

**Abstract:** Alzheimer's disease (AD) is a progressive and degenerative neurological disease characterized by the deterioration of cognitive functions. While a definitive cure and optimal medication to impede disease progression are currently unavailable, a plethora of studies have highlighted the potential advantages of exercise rehabilitation for managing this condition. Those studies show that exercise rehabilitation can enhance cognitive function and improve the quality of life for individuals affected by AD. Therefore, exercise rehabilitation has been regarded as one of the most important strategies for managing patients with AD. Herein, we provide a comprehensive analysis of the currently available findings on exercise rehabilitation in patients with AD, with a focus on the exercise types which have shown efficacy when implemented alone or combined with other treatment methods, as well as the potential mechanisms underlying these positive effects. Specifically, we explain how exercise may improve the brain microenvironment and neuronal plasticity. In conclusion, exercise is a cost-effective intervention to enhance cognitive performance and improve quality of life in patients with mild to moderate cognitive dysfunction. Therefore, it can potentially become both a physical activity and a tailored intervention. This review may aid the development of more effective and individualized treatment strategies to address the challenges imposed by this debilitating disease, especially in low- and middle-income countries. (Copyright © 2024 Copyright: © 2024 Neural Regeneration Research.)

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## 12. Examining the role of attention focus walking training on conscious motor processing during rehabilitation by older adults at risk of falling: A randomized controlled trial

**Authors:** Mak, Toby C. T.;Ng, Shamay S. M.;Leung, Melody C. Y. and Wong, Thomson W. L.

**Publication Date:** 2024

**Journal:** Archives of Gerontology & Geriatrics 121, pp. N.PAG

**Abstract:** • Conscious motor processing might disrupt automatic motor control and hamper gait. • External focus training during gait reduces real-time conscious motor processing. • Instruction-specific gait training shortly improves functional balance and gait. This study examined the impact of walking training with different attention focus instructions on real-time conscious motor processing and fall-related rehabilitation outcomes in older adults at risk of falling. A total of 102 community-dwelling older adults (mean age = 75.2 years, SD = 6.8 years) were randomly assigned to three groups: no attention focus walking group (NAFWG), external attention focus walking group (EAFWG), or internal attention focus walking group (IAFWG). All groups underwent 12 training sessions. Assessments were conducted at baseline, post-training, and six months later, measuring real-time conscious motor processing, functional balance and gait, balance ability, functional mobility, walking ability, trait conscious motor processing propensity, fear of falling, and recurrent falls. The EAFWG showed significant reduction on real-time conscious motor processing immediately after training ( $p = 0.015$ ). No changes were observed for the IAFWG and NAFWG. All groups showed significant improvements in functional balance and gait ( $p < 0.001$ ) and balance ability ( $p < 0.001$ ) post-training. Implementing external focus instructions during walking training could be a feasible and beneficial strategy for reducing real-time conscious motor processing, which may improve walking performance and prevent falls in older adults. Further research is needed to examine the sustained benefits of these interventions and determine optimal training dosage for older adults with different risks of falling in fall prevention.

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## 13. Acceptability of two mobile applications to support cross-sectoral, person-centred and empowering stroke rehabilitation - a process evaluation

**Authors:** Marwaa, Mille Nabsen;Guidetti, Susanne;Ytterberg, Charlotte and Kristensen, Hanne Kaae

**Publication Date:** 2024

**Journal:** Annals of Medicine 56(1), pp. 2302979

**Abstract:** Aim: To evaluate the acceptability of two co-designed mobile applications [Mit Sygehus a knowledge-based solution] and Genoptræn.dk a self-training solution] to support a cross-sectoral, person-centred and empowering stroke rehabilitation.; Setting: The applications were implemented and tested throughout two stroke rehabilitation trajectories in Southern Denmark, comprising two acute, two sub-acute and two municipal stroke rehabilitation settings.; Methods, Participants and Analysis: A process evaluation focusing on acceptability was conducted. Individual and dyadic interviews were performed with ten stroke survivors (three women and seven men, aged 50-84) with moderate stroke and seven significant others (five women and two men, aged 50-78) post-rehabilitation. A constructivist Grounded Theory analysis was used to explore what, why, when, and how the apps worked or did not work throughout the stroke rehabilitation trajectory and if adaptations were needed.; Results: Participants found that Mit Sygehus provided adequate and sufficient knowledge and was easy to use, however, acceptability of Mit Sygehus declined throughout the rehabilitation process. Also, knowledge on 'return-to-work' and 're-gaining driver's license/permission to drive' needed to be developed. The content in Genoptræn.dk was perceived as acceptable, through content being person-centred, motivating and meaningful. Genoptræn.dk furthermore, supported the transfer between rehabilitation settings, provided a sense of progress throughout the rehabilitation process, facilitated positive habits regarding self-training, and relieved the burden on significant others. Genoptræn.dk was perceived most acceptable in the sub-acute rehabilitation setting and declined when rehabilitation continued in the

municipal setting.; Conclusion: Stroke survivors and their significant others found Mit Sygehus and Genoptræn.dk acceptable to support cross-sectoral, person-centred and empowering stroke rehabilitation, however acceptability declined throughout the rehabilitation process. Further investigations are required to determine how cognitive rehabilitation can play a greater role in app-supported stroke rehabilitation and how the need for more long-term follow-up can be supported.

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#### **14. Depressive Symptoms Moderate the Association Between Functional Level at Admission to Intensive Post-Stroke Rehabilitation and Effectiveness of the Intervention**

**Authors:** Mazzeo, Salvatore;Pancani, Silvia;Sodero, Alessandro;Castagnoli, Chiara;Politi, Angela Maria;Barnabè, Monica;Ciullini, Francesca;Baccini, Marco;Grippio, Antonello;Hakiki, Bahia;Macchi, Claudio and Cecchi, Francesca

**Publication Date:** 2024

**Journal:** Journal of Geriatric Psychiatry and Neurology 37(3), pp. 222-233

**Abstract:** Introduction: Previous studies showed that depression acts as an independent factor in functional recovery after stroke. In a prospective cohort of patients admitted to intensive inpatient rehabilitation after a stroke, we aimed to test depression as a moderator of the relationship between the functional level at admission and the effectiveness of rehabilitation at discharge.; Methods: All patients admitted to within 30 days from an ischemic or hemorrhagic stroke to 4 intensive rehabilitation units were prospectively screened for eligibility to a multicenter prospective observational study. Enrolled patients underwent an evidence-based rehabilitation pathway. We used clinical data collected at admission (T0) and discharge (T1). The outcome was the effectiveness of recovery at T1 on the modified Barthel Index (proportion of achieved over potential functional improvement). Moderation analysis was performed by using the PROCESS macro for SPSS using the bootstrapping procedure.; Results: Of 278 evaluated patients, 234 were eligible and consented to enrolment; 81 patients were able to answer to the Hospital Anxiety and Depression Scale (HADS) and were included in this analysis. The relationship between the functional status at admission and rehabilitation effectiveness was significant only in persons with fewer depressive symptoms; depression (HADS cut-off score: 5.9) moderated this relationship (  $P = .047$ ), independent from age and neurological impairment.; Conclusions: Our results suggest that depression moderates between the functional status at admission and the functional recovery after post-stroke rehabilitation. This approach facilitates the identification of subgroups of individuals who may respond differently to stroke rehabilitation based on depression.; Competing Interests: Declaration of Conflicting InterestsThe author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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#### **15. Personalized rehabilitation: A step towards humanizing critical care**

**Authors:** Nydahl, Peter;Heras-La Calle, Gabriel and McWilliams, David

**Publication Date:** 2024

**Journal:** Intensive & Critical Care Nursing 82, pp. 103634

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#### **16. Purpose in Life as an Explicit Outcome of Occupational Therapy**

**Authors:** Radomski, Mary Vining;Anheluk, Mattie;Carroll, Ginger and Zola, Joette

**Publication Date:** 2024

**Journal:** The American Journal of Occupational Therapy : Official Publication of the American Occupational Therapy Association 78(3)

**Abstract:** Purpose in life is increasingly understood to be important to health and well-being. Despite occupational therapy's long history of using occupations to advance health and the linkage between a



subclass of occupations and purpose in life, the term is nearly absent from the American Occupational Therapy Association's documents and the profession's empirical literature. We propose that the profession explicitly name purpose in life as among our intervention outcomes and address disruptions of purpose in life in practice. This can be accomplished by first investing in purpose in our own lives, discussing the topic with colleagues and students, identifying possible purpose disruptions in our clients, and using direct or indirect intervention approaches to help clients reconnect to purpose in their lives. By explicitly naming purpose in life as part of the domain of occupational therapy, we become poised to leverage human occupation to address both a broad societal gap and our clients' needs for a renewal of purpose in life. (Copyright © 2024 by the American Occupational Therapy Association, Inc.)

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### **17. Technological Advances in Stroke Rehabilitation: Robotics and Virtual Reality**

**Authors:** Rajashekar, Deepthi;Boyer, Alexa;Larkin-Kaiser, Kelly and Dukelow, Sean P.

**Publication Date:** 2024

**Journal:** Physical Medicine and Rehabilitation Clinics of North America 35(2), pp. 383-398

**Abstract:** Robotic technology and virtual reality (VR) have been widely studied technologies in stroke rehabilitation over the last few decades. Both technologies have typically been considered as ways to enhance recovery through promoting intensive, repetitive, and engaging therapies. In this review, we present the current evidence from interventional clinical trials that employ either robotics, VR, or a combination of both modalities to facilitate post-stroke recovery. Broadly speaking, both technologies have demonstrated some success in improving post-stroke outcomes and complementing conventional therapy. However, more high-quality, randomized, multicenter trials are required to confirm our current understanding of their role in precision stroke recovery. (Copyright © 2023 Elsevier Inc. All rights reserved.)

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### **18. Occupational therapy's oversight: How science veiled our humanity**

**Authors:** Reid, Heleen;Hocking, Clare and Smythe, Elizabeth

**Publication Date:** 2024

**Journal:** Scandinavian Journal of Occupational Therapy 31(1), pp. 2306585

**Abstract:** Background: Occupational therapy's connection to positivist science predates the profession's formal beginning, with important contributing knowledge sources coming from mathematics, physics, psychology, and systems theory. While these sources of objective knowledge provide a rational, defensible position for practice, they can only explain a portion of what it means to exist as an occupational being.; Aims/objectives: This article aims to reveal some of the history of science within occupational therapy and reveal the subjective, ontological nature of doing everyday activities that the profession's preoccupation with positivist science has obscured.; Methods: This research used a history of ideas methodology to uncover how occupational therapy perceived people and how practice was conceptualised and conducted between 1800 and 1980s, as depicted in writing of the time.; Conclusion: Analysis showed that, through history, people were increasingly categorised and delimited. Practice also became systematically controlled, moving occupational therapy into a theoretical, scientific, and abstract realm.; Significance: The emphasis placed on objectivity diminishes the attention given to human ways of practicing, where the subjective experience is central to our thinking.

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### **19. Physiotherapy students' rating on lecturers' and supervisors' clinical education attributes**

**Authors:** Safo-Kantanka, Nana;Quartey, Jonathan and Kwakye, Samuel Koranteng

**Publication Date:** 2024

**Journal:** Hong Kong Physiotherapy Journal : Official Publication of the Hong Kong Physiotherapy Association Limited = Wu Li Chih Liao 44(2), pp. 79-90

**Abstract:** Background: Clinical education is considered a vital aspect of education of health science students. Attributes of clinical educators play a crucial role in determining the outcome of clinical teaching and learning. A good clinical educator ensures that students get maximum benefits of the clinical learning experience.; Objective: To determine the ratings of physiotherapy students on clinical education attributes of lecturers and clinical supervisors.; Methods: The study was conducted with 81 clinical physiotherapy students from two universities in Ghana. Two copies of McGill clinical teachers' evaluation (CTE) tool were used to obtain students' ratings on their clinical supervisors' and lecturers' clinical education attributes. Independent t -test was used to compare the means of students' level of study and ratings regarding the clinical education attributes of clinical supervisors and lecturers.; Results: Students had a high rating on their clinical education attributes of supervisors and lecturers with a mean score of ( 121 . 22 ± 18 . 12 ) and ( 122 . 11 ± 16 . 71 ), respectively. Rating on clinical education attributes of supervisors ( p = 0 . 111 ) and lecturers ( p = 0 . 124 ) did not differ significantly between the different levels of study.; Conclusion: Clinical physiotherapy students rated the clinical education attributes of their lecturers and supervisors high.; Competing Interests: There were no competing interests from all authors in this study. (© Hong Kong Physiotherapy Association.)

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## **20. An initiative to implement a triage and referral system to make exercise and rehabilitation referrals standard of care in oncology**

**Authors:** Schmitz, Kathryn H.;Chongaway, Andrew;Saeed, Anwaar;Fontana, Toni;Wood, Kelley;Gibson, Susan;Trilk, Jennifer;Adsul, Prajakta and Baker, Stephen

**Publication Date:** 2024

**Journal:** Supportive Care in Cancer : Official Journal of the Multinational Association of Supportive Care in Cancer 32(4), pp. 259

**Abstract:** Background: Clinical guidelines suggest that patients should be referred to exercise while undergoing cancer treatment. Oncology clinicians report being supportive of exercise referrals but not having the time to make referrals. Toward the goal of making exercise referrals standard of care, we implemented and evaluated a novel clinical workflow.; Methods: For this QI project, a rehabilitation navigator was inserted in chemotherapy infusion clinics. Patients were offered a validated electronic triage survey. Exercise or rehabilitation recommendations were communicated to patients during a brief counseling visit by the rehabilitation navigator. The implementation approach was guided by the EPIS framework. Acceptability and feasibility were assessed.; Results: Initial meetings with nursing and cancer center leadership ensured buy-in (exploration). The education of medical assistants contributed to the adoption of the triage process (preparation). Audit and feedback ensured leadership was aware of medical assistants' performance (implementation). 100% of medical assistants participated in implementing the triage tool. A total of 587 patients visited the infusion clinics during the 6-month period when this QI project was conducted. Of these, 501 (85.3%) were offered the triage survey and 391 (78%) completed the survey (acceptability). A total of 176 (45%) of triaged patients accepted a referral to exercise or rehabilitation interventions (feasibility).; Conclusions: Implementation of a validated triage tool by medical assistants and brief counseling by a rehabilitation navigator resulted in 45% of infusion patients accepting a referral to exercise or rehabilitation. The triage process showed promise for making exercise referrals standard of care for patients undergoing cancer treatment. (© 2024. The Author(s).)

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## **21. Prognosis of Pain after Stroke during Rehabilitation Depends on the Pain Quality**

**Authors:** Uragami, Shinji;Osumi, Michihiro;Sumitani, Masahiko;Fuyuki, Masanori;Igawa, Yuki;Iki, Shinya;Koga, Masayuki;Tanaka, Yoichi;Sato, Gosuke and Morioka, Shu

**Publication Date:** 2024

**Journal:** Physical Therapy

**Abstract:** Objective: Pain after a stroke interferes with daily life and the rehabilitation process. This study aimed to clarify the prognosis of pain in subgroups of patients with pain after a stroke using pain quality data.; Methods: The study included 85 patients with pain after stroke undergoing exercise-based rehabilitation. Items of the Neuropathic Pain Symptom Inventory (NPSI) were used, and patients with pain after stroke were clustered according to their scores of NPSI. Other clinical assessments, such as physical and psychological conditions, were assessed by interviews and questionnaires, and then these were compared among subgroups in a cross-sectional analysis. Longitudinal pain intensity in each subgroup was recorded during 12 weeks after the stroke and the patients' pain prognoses were compared between subgroups.; Results: Four distinct subgroups were clustered: cluster 1 (cold-evoked pain and tingling), cluster 2 (tingling only), cluster 3 (pressure-evoked pain), and cluster 4 (deep muscle pain with a squeezing and pressure sensation). The cross-sectional analysis showed varying clinical symptoms among the subgroups, with differences in the prevalence of joint pain, limited range of motion, somatosensory dysfunction, and allodynia. There were no significant differences in pain intensity at baseline among the subgroups. A longitudinal analysis showed divergent prognoses of pain intensity among the subgroups. The pain intensity in cluster 4 was significantly alleviated, which suggested that musculoskeletal pain could be reduced with conventional exercise-based rehabilitation. However, the pain intensity of patients in clusters 1 and 2 remained over 12 weeks.; Conclusion: The study classified patients into clinically meaningful subgroups using pain quality data and provided insight into their prognosis of pain. The findings could be useful for guiding personalized rehabilitation strategies for pain management.; Impact: Assessment of pain quality in patients with pain after stroke leads to personalized rehabilitation for pain management. (© The Author(s) 2024. Published by Oxford University Press on behalf of the American Physical Therapy Association. All rights reserved. For permissions, please e-mail: [journals.permissions@oup.com](mailto:journals.permissions@oup.com).)

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## 22. Evaluating stroke rehabilitation using brain functional network and corticomuscular coupling

**Authors:** Wang, Ting;Wang, Chenghao;Chen, Kai;Yang, Donghui;Xi, Xugang and Kong, Wanzeng

**Publication Date:** 2024

**Journal:** The International Journal of Neuroscience 134(3), pp. 234-242

**Abstract:** Objective: Stroke is the leading cause of disability worldwide. Traditionally, doctors assess stroke rehabilitation assessment, which can be subjective. Therefore, an objective assessment method is required. Methods: In this context, we investigated the changes in brain functional connectivity patterns and corticomuscular coupling in stroke patients during rehabilitation. In this study, electroencephalogram (EEG) and electromyogram (EMG) of stroke patients were collected synchronously at baseline(BL), two weeks after BL, and four weeks after BL. A brain functional network was established, and the corticomuscular coupling relationship was calculated using phase transfer entropy (PTE). Results: We found that during the rehabilitation of stroke patients, the overall connection of the brain functional network was strengthened, and the network characteristic value increased. The average corticomuscular PTE appeared to first decrease and subsequently increase, and the PTE increase in the frontal lobe was significant. Value: In this study, PTE was used for the first time to analyze the relationship between EEG signals in patients with hemiplegia. We believe that our findings contribute to evaluating the rehabilitation of stroke patients with hemiplegia.

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## 23. Innovations in Stroke Recovery and Rehabilitation: Poststroke Pain

**Authors:** Zakel, Juliet;Chae, John and Wilson, Richard D.

**Publication Date:** 2024

**Journal:** Physical Medicine and Rehabilitation Clinics of North America 35(2), pp. 445-462

**Abstract:** Pain can be a significant barrier to a stroke survivors' functional recovery and can also lead to a decreased quality of life. Common pain conditions after stroke include headache, musculoskeletal pain, spasticity-related pain, complex regional pain syndrome, and central poststroke pain. This review investigates the evidence of diagnostic and management guidelines for various pain syndromes after stroke and identifies opportunities for future research to advance the field of poststroke pain. (Copyright © 2023 Elsevier Inc. All rights reserved.)

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**24. Improving the standardisation, timeliness and efficiency of the occupational therapy admission process in an older adult inpatient service.**

**Authors:** Ige JJ.

**Publication Date:** 2023

**Journal:** BMJ Open Quality;12(4):e002514.

**Abstract:** [Our paper provides a clear and replicable account of how improvement in an OT admission process was achieved using quality improvement approaches with balancing measures and an objective measure of sustainability. It produces a reflective account on how collaboration, system thinking and iterative learning within psychologically safe environments can produce sustainable improvement.]

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