Physiotherapy Update

February 2024

Welcome to the latest copy of the Physiotherapy Update. The aim of this publication is to bring together a range of recently published research and guidance that will help you make evidence-based decisions.

Accessing Articles

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A selection of papers from CINHAL (past 6 month-ish) most recent first

Contents

1. Exercise and physical activity promotion for people newly diagnosed with Parkinson's disease: a UK survey exploring current practice and the views of healthcare professionals

Item Type: Journal Article

Authors: Agley, Ledia; Hartley, Peter and Lafortune, Louise

Publication Date: 2024

Journal: Physiotherapy 122, pp. 17-26

Abstract: Exercise and physical activity (PA) are increasingly recognized as important components in the management of Parkinson's disease (PD). Their promotion at diagnosis is essential for better management of symptoms and overall well-being. Healthcare professionals (HCPs) are pivotal to the promotion of exercise and PA, but there is limited guidance on the content of such interventions. This study describes current practice, and explores views of HCPs around PA and exercise promotion at diagnosis for people with PD (PwP) A cross-sectional study using an anonymous online survey. HCPs working with PwP in the UK. Twenty-nine doctors, 17 nurses and 106 physiotherapists completed the survey. All nurses, 99% of physiotherapists and 72% of doctors reported that they always promote exercise and PA during clinic appointments. HCPs identified how PA impacts PD symptoms, evidence on the role of exercise, and signposting to support groups as core topics in PA promotion for PwP. However, these topics are mainly addressed during physiotherapy appointments. Referrals to physiotherapy occur most frequently when PwP experience falls or mobility issues, rather than at diagnosis. HCPs (52% doctors and 41% of nurses) identified lack of confidence as a barrier to prescribing exercise to PwP. The importance of promoting PA at diagnosis is widely acknowledged by HCPs. There are variations between disciplines in terms of the tools used, and the timing and duration of interventions. Previously identified barriers to exercise promotion were also found in this study, and should be explored further in order to aid the implementation of effective interventions. • First study exploring healthcare professional's practice and perspective on exercise promotion for people with Parkinson's. • Understanding on the role of exercise in PD management and baseline activity levels more often assessed by physiotherapists. • Referrals to physiotherapy services tend to occur when function declines, not around the time of diagnosis. • Lack of confidence in prescribing exercises to people with Parkinson's is reported by 52% of physicians and 41% of nurses. • Key topics in activity promotion: evidence on the role of specific exercise in PD management and support groups signposting.

Access or request full text: https://libkey.io/10.1016/j.physio.2023.12.004

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=175164890&custid=ns023446

2. International Survey of Cardiopulmonary Physical Therapy Management of Adult Intensive Care Unit Patients and the Impact of COVID-19

Item Type: Journal Article

Authors: Ntoumenopoulos, George and Patman, Shane

Publication Date: 2024

Journal: Cardiopulmonary Physical Therapy Journal (Lippincott Williams & Wilkins) 35(1), pp. 7-17

Abstract: Objectives: The aim of this study was to report on the cardiorespiratory assessments, interventions,

and outcome measures used by physical therapists with critically ill patients and the impact of COVID-19. **Design:** An anonymous international online survey of practice (through Google Forms) of physical therapists was conducted. **Setting:** The study was conducted in adult intensive care units. Participants: A total of 309 physical therapists participated in the study. Interventions: A survey was used to determine current cardiopulmonary physical therapy practices in ICU. **Results:** Predominantly participants were female (74%), aged 31 to 40 years (40%), having worked in intensive care unit (ICU) for either 0 to 5 years (38%) or 11 to 20 years (28%), and worked full time (72%). Most participants worked in the United Kingdom (36%), Europe (21%), or Australia/Oceania (18%). The 3most frequently reported assessment indicators for cardiopulmonary physical therapy interventions were lobar collapse/atelectasis, audible secretions, and decreased/added lung auscultation sounds. The 3 most commonly used outcome measures included lung auscultation, arterial blood gas analysis, and transcutaneous arterial saturation. The 3 most commonly used physical therapy interventions ("very often" in a descending order) included patient mobilization, repositioning to optimize gas exchange, and endotracheal suctioning. For the COVID-19 cohort, participants reported similar use of patient repositioning to optimize gas exchange and postural drainage, and lower use of patient mobilization and endotracheal suctioning, deep breathing exercises, active cycle of breathing technique, and oropharyngeal suctioning. **Conclusion:** This survey reports on the characteristics of physical therapists who work in ICU, and their cardiopulmonary physical therapy assessments, interventions, and outcome measures most commonly used, inclusive of patients with COVID-19. There were some differences in interventions provided to the COVID-19 cohort compared with the non-COVID-19 cohort.

Access or request full text: https://libkey.io/10.1097/CPT.0000000000000236

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174900897&custid=ns023446

3. Effectiveness of the Treatment of Physiotherapy in the Congenital Muscular Torticollis: A Systematic Review

Item Type: Journal Article

Authors: Rodríguez-Huguet, Manuel;Rodríguez-Almagro, Daniel;Rosety-Rodríguez, Miguel Ángel;Vinolo-Gil, Maria;Ayala-Martínez, Carmen and Góngora-Rodríguez, Jorge

Publication Date: 2024

Journal: Children 11(1), pp. 8

Abstract: A single congenital muscular torticollis (CMT) is a postural musculoskeletal deformity and is characterized by the shortening or stiffness of the sternocleidomastoid muscle. The reported incidence of CMT ranges from 0.2% to 2%. The objective is to evaluate the effect of physical therapy programs on CMT. For the search, PubMed, Scopus, Web of Science, PEDro and Cochrane databases were used. Randomized controlled trials published between 2018 and 2023 have been included. This study follows the PRISMA 2020 statement and has been registered in the PROSPERO database. Finally, six studies were included. The cervical range of motion (ROM) in rotation was the most analyzed variable, followed by the ultrasound evaluation; one of the studies included the analysis of children's motor development with the Alberta scale. All research found benefits associated with soft tissue mobilization, passive stretching techniques and manual therapy of the cervical spine. In conclusion, it is possible to recommend manual therapy and passive stretching techniques for the treatment of CMT, with significant results on the cervical ROM.

Access or request full text: https://libkey.io/10.3390/children11010008

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=175052309&custid=ns023446

4. Effects of remote combine exercise-music training on physical and cognitive performance in patients with Alzheimer's disease: a randomized controlled trial

Item Type: Journal Article

Authors: Shokri, Ghazaleh;Mohammadian, Fatemeh;Noroozian, Maryam;Amani-Shalamzari, Sadegh and Suzuki, Katsuhiko

Publication Date: 2024

Journal: Frontiers in Aging Neuroscience , pp. 1-9

Abstract: Introduction: This study aimed to investigate the effects of combined remote music and exercise training on the cognitive, psychological, and physical function of patients with Alzheimer's disease (AD). **Methods**: Forty-one AD patients were randomly allocated to three groups, including control (C), training (T), and training with music (TM) groups. Participants were evaluated by cognitive and performance test batteries before and after the interventions. Both experimental groups performed 36 remote workouts in 3 months online via WhatsApp video call individually with the trainer. Training included simple and varied movements of all physical indicators. The number of sets began with two sets and progressively increased to one set every month, 5--10 repetitions per set. The overload was applied by reducing the break between sets every week. The TM group performed the same exercises while listening to Mozart and traditional Iranian songs. **Results:** We observed a significant main, group, time, and interaction effect on Romberg (ηp2:0.72), 30 s chair sit and stand (ηp2:0.75), and walking on steppe test (ηp2:0.63). Furthermore, there was a significant main time and interaction effect on push-ups (ηp2:0.43), sit and reach (ηp2:0.64), and MMSE (ηp2:0.76). In all variables, two experimental groups demonstrated substantial improvements than the C group ($p < 0.01$). In addition, the TM group (27.8%) showed a significant improvement compared to the C group (-6.4%) and the T group (12.2%) in MMSE. **Conclusion:** Combined remote training with listening to music as adjuvant treatment is an appropriate item to improve the cognitive and physical performance of Alzheimer's patients, especially during the COVID-19 pandemic.

Access or request full text: https://libkey.io/10.3389/fnagi.2023.1283927

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174994113&custid=ns023446

5. Developing an international competency and capability framework for advanced practice physiotherapy: a scoping review with narrative synthesis

Item Type: Journal Article

Authors: Tawiah, Andrews K.;Stokes, Emma;Wieler, Marguerite;Desmeules, François;Finucane, Laura;Lewis, Jeremy;Warren, Jonathan;Lundon, Katie;Noblet, Tim;Cunningham, Caitriona and Woodhouse, Linda J.

Publication Date: 2024

Journal: Physiotherapy 122, pp. 3-16

Abstract: The need to address increasing numbers of people seeking care, insufficient numbers of physicians, and providing high-value and sustainable care has contributed to changing physiotherapy practice across the world, often referred to as advanced practice physiotherapy. Currently, there is no internationally standardized competency and capability framework to support advanced practice physiotherapy. This scoping review has

two aims; 1) To identify and map out the competencies of advanced practice physiotherapy available in the literature. 2) To develop a competency and capability framework by mapping the competencies identified from the review. The Arksey and O'Malley framework and the PRISMA Scoping review methodology were used. Databases searched included CINAHL Plus, MEDLINE Ovid, PubMed, and Scopus. The competency and capability framework was developed through a narrative synthesis approach. Nineteen documents were included in the final review, with 13 grey literature (government reports, policy documents, thesis) and six research papers. Included publications came from the United Kingdom, Ireland, Australia, New Zealand, and Canada. The included documents covered predominantly musculoskeletal practice (n = 17). The others focused on cardiorespiratory care, incontinence and pelvic health. Through narrative synthesis, 27 competencies and capabilities were identified and grouped under seven domains. The synthesis of this scoping review provides the first competency and capability framework for advanced practice physiotherapy that integrates competencies and capabilities from five different countries. With the expansion of advanced practice physiotherapy, the framework developed from this review is the first step towards international recognition, standardization and consistency of education and training of practitioners. • This paper provides an international competency and capability framework to support the global standardization of advanced practice physiotherapy. • This paper integrates advanced practice physiotherapy competencies and capabilities from five countries with established advanced practice roles into a single competency and capability framework. • This paper highlights the value of global standardization of the competencies for advanced practice physiotherapists' education and training.

Access or request full text: https://libkey.io/10.1016/j.physio.2023.07.002

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=175164881&custid=ns023446

6. Effects of virtual exercise on cardio-pulmonary performance and depression in cardiac rehabilitation phase I: A randomized control trial

Item Type: Journal Article

Authors: Yuenyongchaiwat, Kornanong;Boonkawee, Tunchanok;Pipatsart, Phansaporn;Tavonudomgit, Wararat;Sermsinsaithong, Natsinee;Songsorn, Preyaphorn;Charususin, Noppawan;Harnmanop, Somrudee;Namdaeng, Phuwarin;Kulchanarat, Chitima and Thanawattano, Chusak

Publication Date: 2024

Journal: Physiotherapy Research International 29(1), pp. 1-9

Abstract: Background: Cardiac rehabilitation is recommended for patients undergoing open-heart surgery (OHS). During the hospital admission, these patients suffer from reduced cardiopulmonary performance and decreased psychological health, leading to poor physical function, depression, and morbidity. To prevent post-operative pulmonary complications, a pre and post-operative physical therapy intervention is recommended for patients undergoing heart surgery. Virtual reality (VR) promotes the health status of healthy individuals and those with health conditions. However, few studies have reported the beneficial effects of VR exercise programs on the pulmonary performance and mental health status of patients undergoing OHS. **Objectives:** To determine whether by using training enhanced by VR, patients who have undergone OHS can more effectively attain cardiopulmonary performance and improve depression than through conventional physical therapy. **Method:** 60 participants were randomly assigned to a conventional physical therapy and VR exercise program. Each session was conducted once daily until discharge from the hospital. Cardiorespiratory performance and depression were evaluated before surgery and at the time of discharge from the hospital. A two-way mixed ANOVA was performed to compare within (i.e., pre and post-operation) and between (i.e., VR and conventional physical therapy) groups. **Results:** No significant cardiopulmonary performance gains were detected in patients receiving the VR exercise program when compared with those who participated in conventional physical

therapy prior to post-operative OHS ($p > 0.05$). However, the conventional physical therapy group showed significantly higher depression scores than the VR group ($\Delta 4.00 \pm 0.98$ vs. $\Delta 1.68 \pm 0.92$). However, cardiopulmonary performance did not differ in both VR exercise and conventional physical therapy.

Access or request full text: https://libkey.io/10.1002/pri.2066

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=175072232&custid=ns023446

7. Physiotherapists' perspectives of barriers and facilitators to effective community provision after hip fracture: a qualitative study in England

Item Type: Journal Article

Authors: Adams, Jodie;Jones, Gareth D.;Sadler, Euan;Guerra, Stefanny;Sobolev, Boris;Sackley, Catherine and Sheehan, Katie J.

Publication Date: 2023

Journal: Age & Ageing 52(9), pp. 1-13

Abstract: Purpose to investigate physiotherapists' perspectives of effective community provision following hip fracture. Methods qualitative semi-structured interviews were conducted with 17 community physiotherapists across England. Thematic analysis drawing on the Theoretical Domains Framework identified barriers and facilitators to implementation of effective provision. Interviews were complemented by process mapping community provision in one London borough, to identify points of care where suggested interventions are in place and/or could be implemented. Results four themes were identified: ineffective coordination of care systems, ineffective patient stratification, insufficient staff recruitment and retention approaches and inhibitory fear avoidance behaviours. To enhance care coordination, participants suggested improving access to social services and occupational therapists, maximising multidisciplinary communication through online notation, extended physiotherapy roles, orthopaedic-specific roles and seven-day working. Participants advised the importance of stratifying patients on receipt of referrals, at assessment and into appropriately matched interventions. To mitigate insufficient staff recruitment and retention, participants proposed return-to-practice streams, apprenticeship schemes, university engagement, combined acute-community rotations and improving job description advertisements. To reduce effects of fear avoidance behaviour on rehabilitation, participants proposed the use of patient-specific goals, patient and carer education, staff education in psychological strategies or community psychologist access. Process mapping of one London borough identified points of care where suggested interventions to overcome barriers were in place and/or could be implemented. Conclusion physiotherapists propose that effective provision of community physiotherapy following hip fracture could be improved by refining care coordination, utilising stratification techniques, employing enhanced recruitment and retainment strategies and addressing fear avoidance behaviours.

Access or request full text: https://libkey.io/10.1093/ageing/afad130

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=172443430&custid=ns023446

8. Perceptions of learning and teaching human movement in physiotherapy: A systematic review and metasynthesis of qualitative studies

Item Type: Journal Article

Authors: Ahola, Sirpa;Piirainen, Arja and Vuoskoski, Pirjo

Publication Date: 2023

Journal: International Journal of Qualitative Studies on Health & Well-Being 18(1), pp. 1-22

Abstract: Purpose: Human movement is essential for health and well-being. Understanding human movement is pivotal in physiotherapy, but also an important element of physiotherapy education. This review identified, critically appraised, and synthesized the available evidence on learning and teaching human movement in physiotherapy as perceived by students, therapists, and instructors. **Methods:** The databases MEDLINE, CINAHL, ERIC, PsycINFO, MEDIC and FINNA, were searched. The search was conducted in March/April 2020 and updated in March 2022. The systematic review followed the JBI methodology for systematic reviews of qualitative evidence and was conducted in accordance with an a priori protocol. **Results:** The overall quality of the 17 included studies was scored low on ConQual but dependability and credibility were rated as moderate. Four synthesized findings aggregated from 17 categories and 147 findings described the perceived significance of 1) being present in movement, 2) movement quality, 3) movement transfer, and 4) contextual factors for the learning or teaching of human movement in physiotherapy. **Conclusion:** The synthesized findings indicate that the perceived significance of contextual factors, movement quality and transfer, and being present in movement should be considered in all learning and teaching of movement in physiotherapy. However, the evidence of the review findings was evaluated as low-level, which should be considered when applying these results to physiotherapy education or practice.

Access or request full text: https://libkey.io/10.1080/17482631.2023.2225943

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174693268&custid=ns023446

9. Effectiveness of Physical Exercise on Pain, Disability, Job Stress, and Quality of Life in Office Workers with Chronic Non-Specific Neck Pain: A Randomized Controlled Trial

Item Type: Journal Article

Authors: Alshehre, Yousef M.;Pakkir Mohamed, Shahul Hameed;Nambi, Gopal;Almutairi, Sattam M. and Alharazi, Ahmed A.

Publication Date: 2023

Journal: Healthcare (2227-9032) 11(16), pp. 2286

Access or request full text: https://libkey.io/10.3390/healthcare11162286

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=170737472&custid=ns023446

10. Are doctors and nurses engaging in physical activity and its promotion?

Item Type: Journal Article

Authors: Bhandari, Sara;Watkinson, Emma and Fawkner, Samantha

Publication Date: 2023

Journal: British Journal of Nursing 32(3), pp. 144-149

Abstract: Background: Physical activity counselling in health care is inadequate but the reasons for this are not well understood. Aims: To evaluate physical activity participation and counselling perceptions and practices among doctors and nurses in the UK. **Methods:** This study used two anonymised online questionnaires distributed at different times to doctors and nurses throughout the UK. **Findings:** 629 responses were obtained; 78.3% of doctors and 73.4% of nurses met the UK guideline for aerobic physical activity. Perceived importance of counselling on physical activity was high but less than 50% of participants were actually providing counselling. Counselling was more likely in primary care and doctors were marginally more likely than nurses to counsel. **Conclusion:** Doctors and nurses are an active cohort and view counselling on physical activity as important. Despite this, counselling levels are low especially in secondary care. Efforts should be made to improve knowledge and opportunity for physical activity counselling.

Access or request full text: https://libkey.io/10.12968/bjon.2023.32.3.144

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=161824196&custid=ns023446

11. Virtual Reality-Based Exercise Therapy for Patients with Chronic Musculoskeletal Pain: A Scoping Review

Item Type: Journal Article

Authors: Bilika, Paraskevi;Karampatsou, Natalia;Stavrakakis, Giorgos;Paliouras, Achilleas;Theodorakis, Yannis;Strimpakos, Nikolaos and Kapreli, Eleni

Publication Date: 2023

Journal: Healthcare (2227-9032) 11(17), pp. 2412

Access or request full text: https://libkey.io/10.3390/healthcare11172412

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=171857211&custid=ns023446

12. Consensus on occupational health competencies for UK first contact physiotherapists

Item Type: Journal Article

Authors: Black, Cameron;Shanmugam, Sivaramkumar and Gray, Heather

Publication Date: 2023

Journal: Physiotherapy 121, pp. 58-68

Abstract: Patients at risk of preventable sickness absence frequently attend at primary care. First contact physiotherapists (FCP) may provide an optimal way of reducing this risk; however, there is significant variability in clinical practice, limited research directing best practice and this work and health role is traditionally seen as outside of the 'therapeutic relationship'. If FCP's training and development in this area is considered, FCP's will be able to effectively conduct fitness for work and sickness absence certification within UK primary care settings. This study aimed to reach expert consensus for work-related competencies for FCP practice for patients at risk of preventable sickness absence. A modified Delphi technique involved a UK-wide FCP expert

panel completing three rounds of an online questionnaire. The initial 30-competency questionnaire, based on two separate Nominal Group Techniques in a FCP and Association of Chartered Physiotherapists in Occupational Health and Ergonomics (ACPOHE) physiotherapist cohort and Health Education England's published Roadmap to Practice, covered occupational health specific items (knowledge and skills) related to the topic. Consensus threshold was set a priori at 70% level of group agreement. Items not reaching consensus were modified and new items added based on themes from qualitative data from the open-ended free text questions present in each section. Items that reached values greater than or equal to 70% of agreement among experts were considered definitive for the competency items. Items between 51% and 69% of agreement were included for the next round and those items with less than or equal to 50% of agreement were considered unnecessary and were excluded. In the third round, the occupational health (OH) specific contents for primary care were classified according to the degree of consensus as follows: strong (≥70% of agreement), moderate (51–69% of agreement) and weak (50% of agreement) based on the maximum consensus reached. Of the 30 initial competencies, 20 (67%) reached a strong degree of consensus and 2 (7%) reached a moderate degree of consensus and 8 (27%) competencies were not recommended (≤50% of agreement). 20 OH specific competencies reached a priori consensus level of agreement to provide the final group list. This paper provides an empirically derived list of OH competencies for FCP education in primary care 'first point of care' physiotherapy with a high level of expert agreement and high retention rate between rounds. • The role of certifying sickness absence and providing fitness for work advice within primary care settings has normally been conducted by General Practitioners, largely due to the legislative aspects that require a 'Fit Note'. • FCPs may be ideally suited in ensuring that work is considered at an early stage to help support and prompt conversations about work. • Most individual's health needs are addressed within Primary Care (first point of contact in the NHS). • There is a lack of empirical evidence on the competencies needed for the new 'first point of contact role' whereby FCPs manage undiagnosed and undifferentiated musculoskeletal (MSK) conditions.

Access or request full text: https://libkey.io/10.1016/j.physio.2023.07.004

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=173278860&custid=ns023446

13. A systematic review to explore how exercise-based physiotherapy via telemedicine can promote health related benefits for people with cystic fibrosis

Item Type: Journal Article

Authors: Bowhay, Ben;Latour, Jos M. and Tomlinson, Owen W.

Publication Date: 2023

Journal: PLoS Digital Health 1(2), pp. 1-12

Access or request full text: https://libkey.io/10.1371/journal.pdig.0000201

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=162120013&custid=ns023446

14. The effectiveness of mobilization with movement on patients with mild and moderate carpal tunnel syndrome: A single-blinded, randomized controlled study

Item Type: Journal Article

Authors: Ceylan, İsmail;Büyükturan, Öznur;Aykanat, Ömer;Büyükturan, Buket;Şaş, Senem and Ceylan, Mehmet Fethi

Publication Date: 2023

Journal: Journal of Hand Therapy 36(4), pp. 773-785

Abstract: • Carpal Tunnel Syndrome (CTS) causes pain and loss of function in the affected hand. • In MWM technique, neurophysiological and biomechanical effects are achieved by placing the joint in a painless position. • MWM technique provides faster and momentary painless joint movement in CTS compared to other physical therapy modalities. Single-blinded, randomized controlled study. Carpal Tunnel Syndrome (CTS) causes pain and loss of function in the affected hand. The mobilization with movement (MWM) technique is a manual therapy method applied to correct joint movement limitation and to relieve pain and functional disorders. This study aimed to examine the effectiveness of MWM technique on pain, grip strength, range of motion, edema, hand reaction, nerve conduction, and functional status in patients with CTS. A total of 45 patients enrolled in the study. The MWM group (n = 18) completed a 4-week combined conservative physiotherapy and MWM program, whereas the control group (n = 18) received only the 4 weeks of conservative physiotherapy. Pain severity according to the numerical rating scale was used as primary outcome. We found an improvement within the subjects in resting pain (MWMG:5.1 ± 3.6 vs 1.1 ± 2.4, Effect Size (ES)=1.3; CG:4.5 ± 3.3 vs 1.0 ± 2.2, ES=1.1), in activity pain (MWMG:6.5 ± 3.7 vs 1.1 ± 2.4, ES=1.5; CG:4.8 ± 3.4 vs 2.2 ± 2.3, ES=1) and in night pain (MWMG:5.9 ± 3.2 vs 1.8 ± 2.5, ES=1.2; CG:5.3 ± 4.2 vs ± 2.3 ± 3.5, ES=0.9). For between the groups, a statistical difference was found for the activity pain, Disabilities of the Arm Shoulder and Hand Questionnaire score (MWMG:52.2 ± 23.8 vs 27 ± 24.7, ES=1.3; CG:47.0 ± 24.8 vs 41.5 ± 22.1, ES=0.2), Michigan Hand Outcomes Questionnaire (MHQ-1), (MWMG:44.4 ± 23.7 vs 74.7 ± 24.5, ES=1.3; CG:44.8 ± 17.4 vs 57.4 ± 21.7, ES=0.9) and MHQ-5 (MWMG:68.8 ± 13.1 vs 82.5 ± 11.5, ES=0.9; CG:63.4 ± 26.7 vs 59.3 ± 25.8, ES=0.1) parameters in favour of MWM group. This study showed that MWM compared to conservative physiotherapy might be more effective in reducing perceived symptoms in mild and moderate CTS patients. MWM produced a small benefit to recovery of activity pain and upper extremity functionality level outcomes of patients with mild to moderate CTS when added to a traditional CTS physical therapy program.

Access or request full text: https://libkey.io/10.1016/j.jht.2023.02.004

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174604745&custid=ns023446

15. Effectiveness of Exercise Treatments with or without Adjuncts for Common Lower Limb Tendinopathies: A Living Systematic Review and Network Meta-analysis

Item Type: Journal Article

Authors: Challoumas, Dimitris;Crosbie, Gearoid;O'Neill, Seth;Pedret, Carles and Millar, Neal L.

Publication Date: 2023

Journal: Sports Medicine - Open 9(1), pp. 1-14

Abstract: Introduction: Exercise therapy is usually prescribed as first-line treatment for lower limb tendinopathies. The multitude of exercise- and non-exercise-based management options can be overwhelming for the treating sports professional and patient alike. We chose to investigate the comparative effectiveness of exercise therapy with or without adjuncts for managing the commonest lower limb tendinopathies. **Methods:** Through an extensive systematic literature search using multiple databases, we aimed to identify eligible randomised controlled trials (RCTs) on Achilles tendinopathy, patellar tendinopathy or greater trochanteric pain syndrome (GTPS) that included at least one exercise intervention in their treatment arms. Our primary outcomes were patient-reported pain and function (Victorian Institute of Sport Assessment; VISA). Follow-up was defined as short-term (≤ 12 weeks), mid-term (> 12 weeks to < 12 months) and long-term (≥ 12 months).

The risk of bias and strength of evidence were assessed with the Cochrane Collaboration and GRADE-NMA tools, respectively. Analyses were performed separately for each one of the three tendinopathies. **Results:** A total of 68 RCTs were included in the systematic review. All pairwise comparisons that demonstrated statistically and clinically significant differences between interventions were based on low or very low strength of evidence. Based on evidence of moderate strength, the addition of extracorporeal shockwave therapy to eccentric exercise in patellar tendinopathy was associated with no short-term benefit in pain or VISA-P. From the network meta-analyses, promising interventions such as slow resistance exercise and therapies administered alongside eccentric exercise, such as topical glyceryl trinitrate for patellar tendinopathy and high-volume injection with corticosteroid for Achilles tendinopathy were based on low/very low strength of evidence. **Conclusion**: In this network meta-analysis, we found no convincing evidence that any adjuncts administered on their own or alongside exercise are more effective than exercise alone. Therefore, we recommend that exercise monotherapy continues to be offered as first-line treatment for patients with Achilles and patellar tendinopathies and GTPS for at least 3 months before an adjunct is considered. We provide treatment recommendations for each tendinopathy. PROSPERO registration number CRD42021289534.

Access or request full text: https://libkey.io/10.1186/s40798-023-00616-1

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=169825500&custid=ns023446

16. New graduate physiotherapists' perceived preparedness for clinical practice. A cross-sectional survey

Item Type: Journal Article

Authors: Chesterton, Paul;Chesterton, Jennifer and Alexanders, Jenny

Publication Date: 2023

Journal: European Journal of Physiotherapy 25(1), pp. 33-42

Abstract: The study aimed to explore new United Kingdom (UK) graduate physiotherapists' perceived preparedness for clinical practice to provide valuable information to support curriculum development. An online, mixed method cross-sectional questionnaire was used. Newly qualified UK physiotherapists completed a survey, capturing how physiotherapy degrees prepared them for practice against (1) UK proficiency standards and (2) cross-discipline physiotherapy related clinical skills. Respondents were asked for reflections of their degree course including teaching and effectiveness. Data were converted into proportions with a 95% confidence interval. Likert-scale questions were treated as numeric variables with the mean and standard deviation (SD) calculated for combined responses. Thematic analysis reported patterns of data extracted from open-ended questions. Of a total of 376 respondents, 365 were included in data analysis. Overall respondents perceived that courses prepared them 'well' against 12 of the 15 standards, on a Likert scale of 1–5. Respondents reported that perceived competence was 'indifferent' for manual therapy skills (mean 3.14 ± SD 1.13), red flag (3.45 ± 1.11) and clinical flag management (2.92 ± 1.16). Exercise prescription (2.42 ± 1.35), psychosocial skills (2.27 ± 1.23) and patient management (2.41 ± 1.12) were areas identified for further teaching focus. Placements were the preferred teaching method most applicable to practice followed by practical seminars. Respondents felt sufficiently prepared for practice against UK proficiency standards but not physiotherapy related clinical skills. Areas for curricula development included exercise prescription, psychology and pain management.

Access or request full text: https://libkey.io/10.1080/21679169.2021.1958007

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=161688279&custid=ns023446

17. Musculoskeletal physiotherapists reasons for treatment selection and continuous professional development practices in the United Kingdom: A cross-sectional survey

Item Type: Journal Article

Authors: Chesterton, Paul and Skidmore, Nathan

Publication Date: 2023

Journal: Physiotherapy Practice & Research 44(1), pp. 25-36

Abstract: PURPOSE: The aims of the study were two-fold 1) to explore the treatment modalities musculoskeletal physiotherapists are utilising and the underlying reasons why and 2) report current continuing professional development (CPD) practises and their perceived effectiveness. **METHODS:** Using a cross-sectional questionnaire, musculoskeletal physiotherapists in the United Kingdom (UK) were invited to complete an online survey. The survey captured respondents' professional characteristics and their main reason for selecting a range of treatments sub-grouped into three broad categories; Manual Therapy, Treatment Modalities and Education Based Approaches. Respondents were asked to report their CPD practises and their perceived effectiveness. Data was converted into proportions with lower and upper limits of the 95% confidence interval (CI). Likert scale questions were treated as numeric variables with the mean and standard deviation (SD) calculated for combined responses. **RESULTS:** Of the 414 responders, 408 were eligible for analyses. The most common reason for treatment selection, based upon a combined total of 9792 responses across all treatment modalities, was content taught in 'entry-level training' (n = 2010, 20.5%, 85% CI 20 to 21), followed by 'practice related courses or CPD events' (n = 1241, 12.7%, 95% CI 12 to 13). 'Self-reflection' was the most common form of CPD (n = 404). All forms of CPD were considered 'effective' for developing knowledge and skills except 'clinical audit' and 'journal clubs' which were rated as 'indifferent' by respondents. **CONCLUSIONS:** Treatment technique depends heavily on skills taught in entry-level training. Despite research articles amongst the most utilised forms of CPD, a disconnect exists in its implementation as the main driver of treatment selection. A wide range of CPD activities were undertaken by participants and rated as 'effective' for acquiring and applying physiotherapy related skills.

Access or request full text: https://libkey.io/10.3233/PPR-210619

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=164680446&custid=ns023446

18. Cost-effectiveness of cognitive behavioural and personalized exercise interventions for reducing fatigue in inflammatory rheumatic diseases

Item Type: Journal Article

Authors: Chong, Huey Yi;McNamee, Paul;Bachmair, Eva-Maria;Martin, Kathryn;Aucott, Lorna;Dhaun, Neeraj;Dures, Emma;Emsley, Richard;Gray, Stuart R.;Kidd, Elizabeth;Kumar, Vinod;Lovell, Karina;MacLennan, Graeme;Norrie, John;Paul, Lorna;Packham, Jonathan;Ralston, Stuart H.;Siebert, Stefan;Wearden, Alison and Macfarlane, Gary

Publication Date: 2023

Journal: Rheumatology 62(12), pp. 3819-3827

Abstract: Objectives To estimate the cost-effectiveness of a cognitive behavioural approach (CBA) or a

personalized exercise programme (PEP), alongside usual care (UC), in patients with inflammatory rheumatic diseases who report chronic, moderate to severe fatigue. **Methods** A within-trial cost-utility analysis was conducted using individual patient data collected within a multicentre, three-arm randomized controlled trial over a 56-week period. The primary economic analysis was conducted from the UK National Health Service (NHS) perspective. Uncertainty was explored using cost-effectiveness acceptability curves and sensitivity analysis. **Results** Complete-case analysis showed that, compared with UC, both PEP and CBA were more expensive adjusted mean cost difference: PEP £569 (95% CI: £464, £665); CBA £845 (95% CI: £717, £993)] and, in the case of PEP, significantly more effective adjusted mean quality-adjusted life year (QALY) difference: PEP 0.043 (95% CI: 0.019, 0.068); CBA 0.001 (95% CI: −0.022, 0.022)]. These led to an incremental cost-effectiveness ratio (ICER) of £13 159 for PEP vs UC, and £793 777 for CBA vs UC. Non-parametric bootstrapping showed that, at a threshold value of £20 000 per QALY gained, PEP had a probability of 88% of being cost-effective. In multiple imputation analysis, PEP was associated with significant incremental costs of £428 (95% CI: £324, £511) and a non-significant QALY gain of 0.016 (95% CI: −0.003, 0.035), leading to an ICER of £26 822 vs UC. The estimates from sensitivity analyses were consistent with these results. **Conclusion** The addition of a PEP alongside UC is likely to provide a cost-effective use of health care resources.

Access or request full text: https://libkey.io/10.1093/rheumatology/kead157

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=173959449&custid=ns023446

19. Evidence for exercise therapy in patients with hand and wrist tendinopathy is limited: A systematic review

Item Type: Journal Article

Authors: Cordella, Marco;Pellicciari, Leonardo;Scopece, Fabrizio;Fornaro, Roberta;Giovannico, Giuseppe and Lanfranchi, Elena

Publication Date: 2023

Journal: Journal of Hand Therapy 36(4), pp. 940-955

Abstract: Several studies reported the efficacy of exercise therapy in hand and wrist tendinopathy. However, no systematic review synthesized the effect of exercise therapy on these patients. This study aimed to perform a systematic review to summarize evidence if exercise therapy may be considered an effective treatment in conservative management for patients with hand and wrist tendinopathy. This was a systematic review. A literature search in MEDLINE, Cochrane Library, PEDro, and Embase was conducted from their inception until April 10, 2022. Two independent reviewers included the studies administering exercise therapy in patients with hand and/or wrist tendinopathy in the review and extrapolated the data. Methodological quality was assessed using the framework developed by Murad et al for case reports and case series and the PEDro score for clinical trials. Seven case reports, 3 case series, and 2 randomized controlled studies were included and methodologically evaluated, obtaining a low score for all the analyzed studies. The total number of included patients in the analyzed studies was 106, of which 54 were female, 13 were male, and 39 were not specified. The type of exercise was widespread and often not really well described: it varies from eccentric forearm training to mobilization with movement, passing through strengthening exercises, grip proprioception training, and self-management exercises according to the McKenzie method. The dosage was often not precise, making it difficult to reproduce the therapeutic proposals. Exercise therapy was always administered together with different treatments; therefore, its efficacy alone is difficult to distinguish, although in some cases, the patients improved pain and functionality. Evidence on the efficacy of exercise therapy in patients with hand and wrist tendinopathies is limited. Future research is strongly recommended to determine the appropriate dosage of the exercise therapy to determine clinical changes in these patients. • Exercise therapy for wrist and hand tendinopathies is widespread used, but no systematic review summarized evidence. • In literature, the type of

exercise was heterogeneous and often not really well described. • Exercise therapy was always administered together with different treatments. • Efficacy of exercise therapy alone is difficult to distinguish, although in some cases, studies reported an improvement of pain and functionality.

Access or request full text: https://libkey.io/10.1016/j.jht.2023.08.016

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174604763&custid=ns023446

20. Randomized-controlled trial assessing a digital care program versus conventional physiotherapy for chronic low back pain

Item Type: Journal Article

Authors: Cui, Di;Janela, Dora;Costa, Fabíola;Molinos, Maria;Areias, Anabela C.;Moulder, Robert G.;Scheer, Justin K.;Bento, Virgílio;Cohen, Steven P.;Yanamadala, Vijay and Correia, Fernando Dias

Publication Date: 2023

Journal: NPJ Digital Medicine 6(1), pp. 1-10

Access or request full text: https://libkey.io/10.1038/s41746-023-00870-3

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=164783049&custid=ns023446

21. Vagus Nerve Stimulation Paired With Rehabilitation for Upper Limb Motor Impairment and Function After Chronic Ischemic Stroke: Subgroup Analysis of the Randomized, Blinded, Pivotal, VNS-REHAB Device Trial

Item Type: Journal Article

Authors: Dawson, Jesse;Engineer, Navzer D.;Cramer, Steven C.;Wolf, Steven L.;Ali, Rushna;O'Dell, Michael W.;Pierce, David;Prudente, Cecília N.;Redgrave, Jessica;Feng, Wuwei;Liu, Charles Y.;Francisco, Gerard E.;Brown, Benjamin L.;Dixit, Anand;Alexander, Jen;DeMark, Louis;Krishna, Vibor;Kautz, Steven A.;Majid, Arshad and Tarver, Brent

Publication Date: 2023

Journal: Neurorehabilitation & Neural Repair 37(6), pp. 367-373

Abstract: Background: Vagus Nerve Stimulation (VNS) paired with rehabilitation improved upper extremity impairment and function in a recent pivotal, randomized, triple-blind, sham-controlled trial in people with chronic arm weakness after stroke. **Objective:** We aimed to determine whether treatment effects varied across candidate subgroups, such as younger age or less injury. **Methods:** Participants were randomized to receive rehabilitation paired with active VNS or rehabilitation paired with sham stimulation (Control). The primary outcome was the change in impairment measured by the Fugl–Meyer Assessment Upper Extremity (FMA-UE) score on the first day after completion of 6-weeks in-clinic therapy. We explored the effect of VNS treatment by sex, age (≥62 years), time from stroke (>2 years), severity (baseline FMA-UE score >34), paretic side of body, country of enrollment (USA vs UK) and presence of cortical involvement of the index infarction. We assessed whether there was any interaction with treatment. **Findings:** The primary outcome increased by 5.0 points (SD 4.4) in the VNS group and by 2.4 points (SD 3.8) in the Control group (P =.001, between group difference 2.6,

95% CI 1.03-4.2). The between group difference was similar across all subgroups and there were no significant treatment interactions. There was no important difference in rates of adverse events across subgroups. Conclusion: The response was similar across subgroups examined. The findings suggest that the effects of paired VNS observed in the VNS-REHAB trial are likely to be consistent in wide range of stroke survivors with moderate to severe upper extremity impairment.

Access or request full text: https://libkey.io/10.1177/15459683221129274

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=164656956&custid=ns023446

22. Effectiveness of Digital Physiotherapy Practice Compared to Usual Care in Long COVID Patients: A Systematic Review

Item Type: Journal Article

Authors: Estebanez-Pérez, María-José;Martín-Valero, Rocío;Vinolo-Gil, Maria and Pastora-Bernal, Jos

Publication Date: 2023

Journal: Healthcare (2227-9032) 11(13), pp. 1970

Access or request full text: https://libkey.io/10.3390/healthcare11131970

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=164921064&custid=ns023446

23. Physiotherapy assessment in people with neurological conditions—Evidence for the most frequently included domains: A mixed-methods systematic review

Item Type: Journal Article

Authors: Garner, Jill;Berg, Maayken van den;Lange, Belinda;Vuu, Sally and Lennon, Sheila

Publication Date: 2023

Journal: Journal of Evaluation in Clinical Practice 29(8), pp. 1402-1424

Abstract: Rationale: There is a lack of consensus in the literature related to what is assessed clinically by physical therapists in people with neurological disorders. **Aims:** This mixed-methods systematic review aimed to identify domains that physiotherapists routinely assess in people with neurological conditions in clinical settings and explored factors influencing assessment domains including country, clinical setting, therapist experience and neurological condition. **Method:** Five databases were searched from 1946 to 31st January 2023. Studies with any design reporting on domains assessed by a physiotherapist, in people with neurological conditions in any clinical setting, were included. Independent reviewers assessed eligibility and risk of bias using relevant McMaster critical appraisal tools. Data were extracted and synthesised following the Joanna Briggs Institute approach for mixed systematic reviews. **Results:** A total of 23 (16 quantitative, 7 qualitative) studies involving 3134 participants were included. The studies were rated as high (n = 14) or medium (n = 9) quality. The domains of function (n = 14); postural alignment and symmetry (n = 11); gait (n = 11); balance (n = 9), and muscle strength (n = 8) were most frequently included in assessments. Five key themes were identified from the qualitative studies: the clinical reasoning process, clinical use of standardised measures, utilisation of the senses, clinician experience and information gathering. There was minimal data on how country, clinical setting,

therapist experience and neurological condition influence inclusion of assessed domains. **Conclusion:** Five domains were most frequently included in assessment: function; postural alignment and symmetry; gait; muscle strength; and balance. This limited number of domains is in stark contrast to the full neurological physiotherapy assessment recommended by expert textbooks. Further research is needed to understand the reasons why this might be so.

Access or request full text: https://libkey.io/10.1111/jep.13909

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=173586682&custid=ns023446

24. Goal setting in physiotherapy-led adult musculoskeletal care: A scoping review

Item Type: Journal Article

Authors: Gayton, Jonathan and Monga, Aastha

Publication Date: 2023

Journal: Musculoskeletal Care 21(4), pp. 1315-1340

Abstract: Introduction: Goal setting is a key part of rehabilitation across various fields of physiotherapy. It is less clear what evidence exists to underpin its effectiveness and to practically guide its use within musculoskeletal physiotherapy. **Objectives:** This scoping review provides an overview of current research regarding goal setting in adult physiotherapy-led musculoskeletal care with three aims: 1) to identify and analyse any gaps in the literature, 2) to identify relevant features of goal setting theory and 3) to make recommendations for future research. The principal research question was what does the literature tell us about the role of goal setting for adults over the age of 18 with musculoskeletal pain accessing outpatient physiotherapy services? **Inclusion Criteria:** The population, concept and context framework was used to define the inclusion criteria. Key definitions were adults over the age of 18 with musculoskeletal conditions, goal setting, and physiotherapy-led interventions. **Methods:** This scoping review followed the guidance set out by the Joanna Briggs Institute Manual for Evidence Synthesis. Allied and Complementary Medicine Database, Cumulative Index to Nursing and Allied Health Literature Plus with Full Text, MEDLINE, American Psychological Association PsycInfo and the Cochrane Database of Systematic Reviews, Protocols and Trials were searched using pre-defined search criteria. Data were extracted from screened full-text articles and presented in basic statistical and narrative form. Results: 41 articles were included in the review. Several broad themes and research methods were identified. The nature of the studies suggested that the clinical application of goal setting is complex and the depth of understanding is limited. Most studies suggested that goal setting is feasible and has a positive impact on outcomes. A common finding was a lack of clear definitions regarding goal setting terminology and approaches. Study samples were generally defined by biomedical categories, suggesting a pathoanatomical approach to researching a cognitive construct. Theoretical underpinning was lacking in many studies. No frameworks guiding goal setting in physiotherapy-led musculoskeletal rehabilitation have been identified. **Conclusions:** Goal setting is a popular tool within musculoskeletal outpatient physiotherapy. Further research is required to clarify its efficacy and provide guidance on its role and application in clinical practice.

Access or request full text: https://libkey.io/10.1002/msc.1803

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174158040&custid=ns023446

25. The effect of Otago exercises on fear of falling, balance, empowerment and functional mobility in the older people: Randomized controlled trial

Item Type: Journal Article

Authors: Genç, Fatma Zehra and Bilgili, Naile

Publication Date: 2023

Journal: International Journal of Nursing Practice (John Wiley & Sons, Inc.) 29(6), pp. 1-12

Abstract: Aim: This study aimed to test the effect of Otago exercises on fear of falling, balance, empowerment and functional mobility in older people living in nursing homes. **Methods:** This study is a parallel-group randomized controlled trial. In total, 56 individuals were stratified randomized according to age-gender. Participants were recruited from September 2021 to August 2022. Data were collected at baseline, in the 8th and 12th weeks. The researcher gave Otago exercise training to the intervention group three times per week for the first 4 weeks and applied it to the individuals, and in the next 8 weeks, the researcher visited the institution to ensure the continuity of the exercises and contacted the individuals by phone. Friedman test and generalized linear model were used in the analysis of data. **Results:** In the study, group and time interaction were found to be significant in terms of the Berg balance scale, 30-second sit-and-stand test, elderly empowerment scale and timed up-and-go test. It was determined that the intervention did not improve fear of falling, upper extremity strength and 6-min walk test results. **Conclusion:** Health personnel and administrators should have increased awareness about Otago exercises and can recommend implementation of the programme. Summary statement: What is already known about this topic? Otago exercises are an evidence-based, home-based programme for improving balance. What this paper adds? Otago exercises can improve the balance, lower-extremity strength, elderly empowerment score and timed up-go test score of older people living in nursing homes. The Otago exercise programme did not improve the fear of falling, the strength of the upper extremities and the 6-min walk test results for older people living in nursing homes. The implications of this paper: Health personnel and administrators should be aware of the potential benefits of Otago exercises and can recommend implementation of the programme. Nurses working in nursing homes can be taught how to deliver the programme and to plan training to roll out the programme.

Access or request full text: https://libkey.io/10.1111/ijn.13194

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174181440&custid=ns023446

26. Physiotherapy in Patients with Stress Urinary Incontinence: A Systematic Review and Meta-analysis

Item Type: Journal Article

Authors: Ghaderi, Fariba;Kharaji, Ghazal;Hajebrahimi, Sakineh;Pashazadeh, Fariba;Berghmans, Bary and Pourmehr, Hanieh Salehi

Publication Date: 2023

Journal: Urology Research & Practice 49(5), pp. 293-306

Abstract: Physiotherapy is the most commonly used treatment for stress urinary incontinence including pelvic floor muscle training, biofeedback, and electrical stimulation. This systematic review evaluated the effects of physiotherapy in patients with stress urinary incontinence compared with no treatment, placebo, sham, surgery, or other inactive control treatments. MEDLINE (via PubMed), The Cochrane Library (CENTRAL), Embase, Scopus, Web of Science, PEDro, and Trip Database were explored using applicable vocabularies for all English and Persian language investigations released from inception to January 2021. On one side, trials

including physiotherapy of pelvic floor muscle training, biofeedback, and electrical stimulation and on the other, either no treatment, placebo, sham, surgery, or other inactive control treatments were included. Studies were assessed for appropriateness and methodological excellence. Two authors extracted data. Disagreements were resolved by a third opinion. Data were processed as described in the Joanna Briggs Institute Handbook. Twenty-nine trials with 2601 participants were found, but only 16 were included because of data heterogeneity. The results showed that physiotherapy interventions are better than no treatment in terms of urine leakage, but no difference was found for urinary incontinence severity. Also, physiotherapy showed favorable results over comparison groups for International Consultation on Incontinence Questionnaire, pad test, pelvic floor muscle function, and improvement outcomes. This systematic review supports the widespread use of pelvic physiotherapy as the first-line treatment for adult patients with stress urinary incontinence.

Access or request full text: https://libkey.io/10.5152/tud.2023.23018

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=172750145&custid=ns023446

27. Future-proofing the Profession: Physiotherapists' perceptions of their current and emerging role

Item Type: Journal Article

Authors: Hartley, Sandra Elaine;Ryad, Hanane and Yeowell, Gillian

Publication Date: 2023

Journal: Physiotherapy 119, pp. 72-79

Abstract: As healthcare systems continue to modernise, physiotherapists are required to transform their practice to remain contemporary and meet future population needs. The study aims to gain an insight into physiotherapists' perceptions of their current and emerging future role. The intention is to develop an understanding of the physiotherapist's role and how it can continue to evolve to support populations' needs in more sustainable and innovative ways. A qualitative design using semi-structured interviews was undertaken informed by Gadamerian hermeneutic philosophy. Participants were gained from a postgraduate physiotherapy programme in Northwest England that recruits physiotherapists from across the UK; via the research teams' professional networks and using snowball sampling. Interviews were digitally recorded and transcribed verbatim. Thematic analysis was undertaken. Ethical approval and informed consent was obtained. 23 participants (15 female). 4 themes were identified: 'An underpinning philosophy of practice' that promotes holistic care and supports patient wellbeing. An 'evolving role broadening the scope of practice' with many 'agents of change shaping the profession'. When 'preparing the future workforce and their transition into practice', graduates were seen as more adaptable and resilient. However, more affiliation between the university and placement providers to enhance learning environments is needed. Physiotherapists need to re-evaluate their role so a clear vision for the future can be co-created to ensure they remain contemporary and continue to optimise their potential. An emerging role that re-envisages a holistic approach that incorporates health promotion as fundamental to this role could support physiotherapists' transformation in practice. • This study provides contemporary insights into physiotherapists' perceptions of their role and emerging future role. • A reconceptualization of a holistic approach that encompasses health promotion could be key to the transformation of the physiotherapy role. • Holistic care including health promotion as a central tenet within pre-registration education would facilitate a shift towards wellness and positive health and wellbeing.

Access or request full text: https://libkey.io/10.1016/j.physio.2022.11.007

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=163338454&custid=ns023446

28. Principles into Practice: An Observational Study of Physiotherapists use of Motor Learning Principles in Stroke Rehabilitation

Item Type: Journal Article

Authors: Johnson, Louise;Burridge, Jane;Ewings, Sean;Westcott, Ellie;Gayton, Marianne and Demain, Sara

Publication Date: 2023

Journal: Physiotherapy 118, pp. 20-30

Abstract: To describe a) how motor learning principles are applied during post stroke physiotherapy, with a focus on lower limb rehabilitation; and b) the context in which these principles are used, in relation to patient and/or task characteristics. Direct non-participation observation of routine physiotherapy sessions, with data collected via video recording. A structured analysis matrix and pre-agreed definitions were used to identify, count and record: type of activity; repetitions; instructional and feedback statements (frequency and type); strategies such as observational learning and augmented feedback. Data was visualised using scatter plots, and analysed descriptively. 6 UK Stroke Units 89 therapy sessions were observed, involving 55 clinicians and 57 patients. Proportion of time spent active within each session ranged from 26% to 98% (mean 85, SD 19). The frequency of task repetition varied widely, with a median of 3.7 repetitions per minute (IQR 2.1–8.6). Coaching statements were common (mean 6.46 per minute), with 52% categorised as instructions, 14% as feedback, and 34% as verbal cues/motivational statements. 13% of instructions and 6% of feedback statements were externally focussed. Examining the use of different coaching behaviours in relation to patient characteristics found no associations. Overall, practice varied widely across the dataset. To optimise the potential for motor skill learning, therapists must manipulate features of their coaching language (what they say, how much and when) and practice design (type, number, difficulty and variability of task). There is an opportunity to implement motor learning principles more consistently, to benefit motor skill recovery following stroke. Clinicaltrials.gov (NCT03792126). • The findings from this study highlight opportunities for therapists to consider how they use verbal instructions and feedback in a specific and precise way, in order to support the process of motor learning. There is scope within routine clinical practice to use the many and varied types of feedback more robustly. • This study provides insight into how therapists apply motor learning principles stroke rehabilitation settings, and potential associations with a range of patient characteristics.

Access or request full text: https://libkey.io/10.1016/j.physio.2022.06.002

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=161584269&custid=ns023446

29. Advanced practice physiotherapists can diagnose and triage patients with musculoskeletal disorders while providing effective care: a systematic review

Item Type: Journal Article

Authors: Lafrance, Simon;Vincent, Raphaël;Demont, Anthony;Charron, Maxime and Desmeules, François

Publication Date: 2023

Journal: Journal of Physiotherapy (Elsevier) 69(4), pp. 220-231

Abstract: What is the diagnostic and surgical triage concordance between advanced practice physiotherapists (APPTs) and physicians? What is the clinical efficacy of advanced practice physiotherapy care compared with

usual medical care? Systematic review with meta-analyses. Medline, Embase, Cochrane CENTRAL and CINAHL were searched up to March 2022. Concordance studies on diagnostic or surgical triage between APPTs and physicians and randomised controlled trials comparing the clinical efficacy of an advanced practice physiotherapy (APP) model of care compared with usual medical care for participants with musculoskeletal disorders. Meta-analyses were performed for concordance and clinical outcomes. Grading of Recommendations, Assessment, Development and Evaluations (GRADE) was used to evaluate the certainty of evidence. Nineteen concordance studies (n = 1,745) and six randomised trials (n = 1,960) were included. Based on moderate-certainty evidence, the pooled Kappa for diagnostic concordance between APPTs and physicians was 0.76 (95% CI 0.68 to 0.85, n = 1,108). Based on high-certainty evidence, the pooled Kappa for surgical triage concordance was 0.71 (95% CI 0.63 to 0.78, n = 1,128). Based on moderate-certainty evidence, APP care resulted in a comparable or greater reduction in pain (MD –0.92 out of 10, 95% CI –1.75 to –0.10, n = 494) when compared with usual medical care at medium-term follow-up. Based on low-certainty evidence, APP care resulted in a comparable or greater reduction in disability (SMD –0.31, 95% CI –0.67 to 0.04, n = 535) when compared with usual medical care at medium-term follow-up. Concordance between APPTs and physicians is probably good to very good for diagnosis and good to very good for surgical triage of musculoskeletal disorders. Patients with musculoskeletal disorders managed in an APP model of care probably report comparable or greater pain and disability reductions when compared with usual medical care. CRD42022320950.

Access or request full text: https://libkey.io/10.1016/j.jphys.2023.08.005

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=172776169&custid=ns023446

30. Access to first contact physiotherapy appointments in primary care: A scoping review

Item Type: Journal Article

Authors: Lamb, Kirsten;Comer, Christine;Walsh, Nicola and McHugh, Gretl

Publication Date: 2023a

Journal: Musculoskeletal Care 21(4), pp. 1182-1194

Abstract: Background: First Contact Physiotherapy (FCP) is part of the drive to increase General Practice (GP) capacity by providing access to expert musculoskeletal (MSK) Physiotherapists in GP surgeries. For the FCP model to provide effective MSK care at the start of the patient's journey, it is essential that patients are directed to FCP appointments in a timely manner. It is therefore important to know how patients are accessing FCP appointments. **Objective:** To provide an overview of the literature regarding patient access to FCP appointments. Design: Scoping review. **Methods:** We reviewed studies published from January 2016 to May 2023 that focused on FCP and made a mention of patient access to FCP appointments. A search was performed using six databases as well as grey literature sources. Study selection and data extraction were independently conducted by two reviewers. Extracted data were tabulated and analysed according to our research questions. **Results:** From 186 records identified, 24 studies and other materials were included in the review. A variety of terms were used to describe access routes to FCP appointments, the most common being 'signposting'. These studies suggest the importance of the role of GP reception/administrative staff in enabling efficient patient access to FCP appointments. **Conclusion:** There is a clear gap in the literature concerning how patients access FCP appointments. Since the importance of appropriate access is acknowledged as an essential feature of the expansion of FCP in Primary Care, future research is needed to refine and implement optimal FCP access models by identifying the key components needed to ensure timely and appropriate access to FCP.

Access or request full text: https://libkey.io/10.1002/msc.1798

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174158035&custid=ns

023446

31. Patient access to first contact practitioner physiotherapists in the UK: A national survey

Item Type: Journal Article

Authors: Lamb, Kirsten;Comer, Christine;Walsh, Nicola and McHugh, Gretl

Publication Date: 2023b

Journal: Musculoskeletal Care 21(4), pp. 1554-1562

Abstract: Background: First Contact Practice Physiotherapists (FCPPs) offer expert care for patients with musculoskeletal (MSK) conditions in Primary Care, usually within GP practices. This is a rapidly expanding area of practice endorsed by NHS England, the Chartered Society of Physiotherapy (CSP) and the British Medical Association (BMA). Efficient and appropriate access is important for optimising FCPP practice, but there is little published information about how patients currently access FCPP appointments. **Objective:** To investigate how patients access FCPP appointments in General Practice. Design: Cross-sectional online survey of FCPPs in the UK. **Methods:** FCPPs were surveyed about patient access to appointments. The survey instrument was designed using Jisc Online Surveys, piloted, and then distributed via social media and professional groups to FCPPs nationwide. Descriptive statistics were used to analyse demographic and multiple-choice questions, and free text responses were analysed using quantitative content analysis. **Results:** 193 participants completed the survey. Booking via GP Reception (n = 179) was reported as the most common route into an FCPP appointment, closely followed by booking after seeing another clinician for the problem (n = 172). **Conclusion:** This research has provided clarity regarding how patients access the rapidly growing speciality of FCPP within GP practices in the UK. The role of GP Reception staff in facilitating access to FCPPs, the application of triage and the use of digital or online systems were highlighted as important elements for enabling efficient access to FCPPs by patients with MSK conditions.

Access or request full text: https://libkey.io/10.1002/msc.1834

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174158071&custid=ns023446

32. Implementation of physiotherapy-led lung ultrasound in the intensive care unit

Item Type: Journal Article

Authors: Lockstone, Jane;Brain, Matt;Zalucki, Nadia and Ntoumenopoulos, George

Publication Date: 2023

Journal: Australian Health Review 47(5), pp. 614-618

Abstract: The use of lung ultrasound (LUS) in clinical settings is emerging as an important tool in the assessment of lung pathology and/or function and has gained considerable acceptance. LUS is being integrated into clinical care by trained respiratory physiotherapists and has been shown to influence physiotherapists' clinical decision-making in the respiratory management of patients. Considering the use of LUS by physiotherapy is in its infancy and still evolving, there is likely variability in the ability and confidence of physiotherapists to use LUS in clinical practice, both in Australia and internationally. While the UK has had a rapid increase in the number of LUS-accredited physiotherapists (n = 111), the number of LUS-accredited physiotherapists in Australia remains very low (n = 4). There is a growing body of work in the UK on physiotherapy-led LUS in respiratory care, however,

there is currently little work published on the practicalities of training and establishing physiotherapy-led LUS in Australia. This report describes the training and implementation of physiotherapy-led LUS in the intensive care unit from a regional hospital perspective.

Access or request full text: https://libkey.io/10.1071/AH23045

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=172803123&custid=ns023446

33. Access, use and satisfaction with physiotherapy services among adults with cerebral palsy living in the United Kingdom and Ireland

Item Type: Journal Article

Authors: Manikandan, Manjula;Cassidy, Elizabeth;Cook, Gemma;Kilbride, Cherry;Kerr, Claire;Walsh, Aisling;Walsh, Michael and Ryan, Jennifer M.

Publication Date: 2023

Journal: Disability & Rehabilitation 45(13), pp. 2160-2168

Abstract: The aims of this study were to describe how and why adults with CP living in the UK and Ireland accessed and used physiotherapy services; to describe the type of physiotherapy accessed and satisfaction with physiotherapy services and to examine the associations between relevant factors. A cross-sectional semi-structured online survey was employed. Participants were adults with CP aged 18 and above living in the UK and Ireland; able to complete an online questionnaire in English independently or with technical or physical assistance. Data were collected from April 2019 to February 2020. Participants (n = 162) were aged 18–74 years. The majority were female (75%) and lived in the UK (83%). Ninety percent of participants reported a need for physiotherapy but only 35% received physiotherapy services. The most common reason for visiting physiotherapy was mobility decline (62%). Satisfaction with the availability and quality of physiotherapy services were 21% and 27%, respectively. Adults with scoliosis and mobility decline were less likely to report that they received the physiotherapy they needed. Adults with CP did not receive the physiotherapy services that they perceived they needed. There is a need to develop physiotherapy services in collaboration with people living with CP. Adults with cerebral palsy (CP) needed physiotherapy services, but were not receiving the physiotherapy services that they perceive they needed. Adults were not satisfied with the availability or quality of physiotherapy services received. Adults with scoliosis and mobility decline were less likely to report that they received the physiotherapy they needed. There is a need to develop physiotherapy services from a life-span perspective for adults living with CP.

Access or request full text: https://libkey.io/10.1080/09638288.2022.2087760

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=164367253&custid=ns023446

34. Efficacy of Physiotherapy Rehabilitation Program In Post Operative Management of Femoroacetabular Impingement Syndrome: A systemic Review of Clinical Evidence

Item Type: Journal Article

Authors: Mankad, Dinkey;Bhagat, Camy and Bhura, Paras

Publication Date: Oct ,2023

Journal: Indian Journal of Physiotherapy & Occupational Therapy 17(4), pp. 31-39

Abstract: Background: Femoroacetabular impingement syndrome (FAIS) is a well-known cause of hip pain in adolescents and young adults. It is defined as the triad of symptoms, clinical signs and imaging findings in which structural morphology results in conflict between the femoral head and the acetabulum. **Aim:** To summarize the effects of physiotherapy rehabilitation in post operative management of FAI syndrome **Method:** A literature search was carried out on the PubMed, EMBASE, Scopus, Google Scholar,Chocrane, Research Gate and Pedro databases, using the following keywords: "femoroacetabular impingement", "FAI", in associationwith "surgery", "arthroscopy", "surgical" and "physiotherapy", "physical therapy", "rehabilitation", "exercise". Studies meeting all inclusion and exclusion were reviewed and data were extracted. **Results:** The above review includes a total of 10 studies. In the present review, data from 1281 patients were retrieved. Out of 1281 patients 820 were Male and 461were females. Furthermore, 117 cases were classified as a cam impingement, 40 as pincer impingement and 1124 as mixed FAI. The weighted mean age was 35.10 years, outcomes included iHOT-33, HOS ADL, HOS SPORTS, VAS, MHHS. **Conclusion:** Rehabilitation protocols following hip arthroscopy for the management of FAI syndrome typically consist of four to five phase programs with set goals and progression criteria. The study found Clinically significant improvement in reported outcomes from baseline noted in majority of the studies reviewed that involved a structured rehabilitation program following arthroscopic management of FAI.

Access or request full text: https://libkey.io/10.37506/ijpot.v17i4.20002

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=173478860&custid=ns023446

35. School-based allied health interventions for children and young people affected by neurodisability: a systematic evidence map

Item Type: Journal Article

Authors: McAnuff, Jennifer;Gibson, Jenny L.;Webster, Rob;Kaur-Bola, Kulwinder;Crombie, Sarah;Grayston, Aimee and Pennington, Lindsay

Publication Date: 2023

Journal: Disability & Rehabilitation 45(7), pp. 1239-1257

Abstract: To systematically map available evidence for school-based interventions led by allied health (i.e., occupational therapy, physiotherapy, and/or speech and language therapy). We searched for studies in pre-school, primary, secondary, or post-secondary settings, published 2004–2020. We coded study, population, and intervention characteristics. Outcomes were coded inductively, categorised, and linked to the International Classification of Functioning, Disability, and Health. We included 337 studies (33 countries) in an interactive evidence map. Participants were mainly pre-school and primary-aged, including individuals with neurodisability and whole-school populations. Interventions targeted wide-ranging outcomes, including educational participation (e.g., writing, reading) and characteristics of school environments (e.g., educators' knowledge and skills, peer support). Universal, targeted, and intensive interventions were reported in 21.7%, 38.9%, and 60.2% of studies, respectively. Teachers and teaching assistants delivered interventions in 45.4% and 22.6% of studies, respectively. 43.9% of studies conducted early feasibility testing/piloting and 54.9% had ≤30 participants. Sixty-two randomised controlled trials focused on intervention evaluation or implementation. In the United Kingdom, future research should take forward school-based allied health interventions that relate directly to agreed research priorities. Internationally, future priorities include implementation of tiered (universal, targeted, intensive) intervention models and appropriate preparation and deployment of the education workforce. Allied health professionals (occupational therapists, physiotherapists, and speech and language therapists) work in

schools supporting children and young people affected by neurodisability but the content, impact, and cost-effectiveness of their interventions are not well-understood. We systematically mapped the available evidence and identified that allied health school-based interventions target highly diverse health-related outcomes and wider determinants of children and young people's health, including educational participation (e.g., literacy) and characteristics of the school environment (e.g., educators' knowledge and skills). Our interactive evidence map can be used to help stakeholders prioritise the interventions most in need of further evaluation and implementation research, including tiered models of universal, targeted, and intensive allied health support. Teachers and teaching assistants play a central role in delivering allied health interventions in schools – appropriate preparation and deployment of the education workforce should therefore be a specific priority for future international allied health research.

Access or request full text: https://libkey.io/10.1080/09638288.2022.2059113

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=162432006&custid=ns023446

36. The experiences of physiotherapy independent prescribing in primary care: implications for practice

Item Type: Journal Article

Authors: Mullan, Jacqueline;Smithson, Janet and Walsh, Nicola

Publication Date: 2023

Journal: Primary Health Care Research & Development 24, pp. 1-7

Abstract: Aim: To explore the experiences of musculoskeletal (MSk) physiotherapy independent prescribing in primary care from the perspectives of physiotherapists and General Practitioners (GPs) and identify the implications these have for contemporary physiotherapy practice in primary care. **Background:** Legislative change in the United Kingdom (UK) in 2013 enabled physiotherapists holding a postgraduate non-medical prescribing qualification to independently prescribe certain drugs that assist in patient management. Independent prescribing by physiotherapists is a relatively contemporary development in role change and purpose, occurring alongside the development of physiotherapy first contact practitioner (FCP) roles in primary care. **Methods:** A critical realist approach was used, with qualitative data collected via 15 semi-structured interviews with physiotherapists and GPs in primary care. Thematic analysis was applied. Participants: Fifteen participants were interviewed (13 physiotherapists, 2 GPs). Of the 13 physiotherapists, 8 were physiotherapy independent prescribers, 3 were MSk service leads, and 3 were physiotherapy consultants. Participants worked across 15 sites and 12 organisations. **Findings:** Whilst physiotherapists were empowered by their independent prescribing qualification, they were frustrated by current UK Controlled Drugs legislation. Physiotherapists reported vulnerability, isolation, and risk as potential challenges to independent prescribing, but noted clinical experience and 'patient mileage' as vital to mitigate these. Participants identified the need to establish prescribing impact, particularly around difficult to measure aspects such as more holistic conversations and enhanced practice directly attributed to prescribing knowledge. GPs were supportive of physiotherapists prescribing. **Conclusions:** Establishment of physiotherapy independent prescribing value and impact is required to evaluate the role of, and requirement for, physiotherapy independent prescribers within primary care physiotherapy FCP roles. Additionally, there is a need for a review of physiotherapy prescribing permitted formulary, and development of support mechanisms for physiotherapists at individual and system levels to build prescribing self-efficacy and autonomy, and to advance and sustain physiotherapy independent prescribing in primary care.

Access or request full text: https://libkey.io/10.1017/S1463423623000142

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174896019&custid=ns023446

37. Effect of a stabilization exercise program versus standard treatment for thumb carpometacarpal osteoarthritis: A randomized trial

Item Type: Journal Article

Authors: Pisano, Katie;Wolfe, Terri;Lubahn, John and Cooney, Timothy

Publication Date: 2023

Journal: Journal of Hand Therapy 36(3), pp. 546-559

Abstract: • Standard therapy for CMC osteoarthritis with and without a stabilization home exercise program decreases pain and improves function over the course of a year. • Individuals with CMC osteoarthritis may benefit from individualized stabilization, stretching and strengthening exercises. • The role of exercise including optimal exercise selection and dosage is still under investigation. Randomized, interventional trial with 1 year follow-up. Though recommended, evidence is lacking to support specific exercises to stabilize and strengthen the first carpometacarpal (CMC) joint for cases of osteoarthritis (OA). To determine in a naturalistic setting, whether standard treatment plus a home exercise program (ST+HEP) is more effective than standard treatment (ST) alone in improving Quick Disabilities of Arm, Shoulder and Hand (qDASH) scores, and secondarily, in other patient-centered (pain, function) and clinical outcomes (range of motion, strength). A total of 190 patients from a hand therapy practice in northwestern PA were enrolled by informed consent and randomized into ST or ST+HEP groups. Average age was 60 years, most were female (78%) with sedentary occupations most common (36%). ST group received orthotic interventions, modalities, joint protection education and adaptive equipment recommendations, while the ST+HEP group received a home exercise program in addition to ST for 6-12 months. Follow-up occurred at 3, 6, and 12 months. Outcomes included grip strength, pinch strength, range of motion (ROM), qDASH, Patient Specific Functional Scale (PSFS) and pain ratings. At the 6 month mark, all subjects could change groups if desired. Efficacy data analysis included both parametric and non-parametric tests. The threshold for statistical significance was 0.05 and adjusted for multiple comparisons. Repeated measures ANOVA failed to show a statistically significant difference in strength and ROM assessments between treatment groups over the 12 month follow-up (P ≥.398). Differences between groups did not exceed 13%. Both the ST and ST+HEP groups evidenced improvement over time in most patient-focused assessments (P ≤.011), including improvements exceeding reported clinically important differences in pain with activity and PSFS scores. Scores for these measures were similar at each follow-up period (P ≥.080) in each group. The presence of CTS exerted no effect on outcomes; longer treatment time was weakly related to poorer qDASH and PSFS scores initially. Of those enrolled, 48% of subjects completed the study. The addition of a high-frequency home exercise program did not improve clinical or patient-centered outcomes more so than standard care in our sample however, study limitations are numerous. Both groups had decreased pain with activity and improved PSFS scores, meeting the established minimally clinically important difference (MCID) of each at 6 and 12 months. Adherence with the home program was poor and/or unknown.

Access or request full text: https://libkey.io/10.1016/j.jht.2022.03.009

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=172974935&custid=ns023446

38. Rehabilitation Interventions for Physical Capacity and Quality of Life in Adults With Post–COVID-19 Condition: A Systematic Review and Meta-Analysis

Item Type: Journal Article

Authors: Pouliopoulou, Dimitra V.;Macdermid, Joy C.;Saunders, Emily;Peters, Sue;Brunton, Laura;Miller, Erin;Quinn, Kieran L.;Pereira, Tiago V. and Bobos, Pavlos

Publication Date: 2023

Journal: JAMA Network Open 6(9), pp. e2333838

Abstract: This meta-analysis reviews studies investigating the association of rehabilitation interventions with physical capacity and quality of life in adults with post–COVID-19 condition (PCC). Key Points: Question: Are respiratory training and exercise-based rehabilitation interventions associated with improved functional exercise capacity in adults with post–COVID-19 condition? Findings: This systematic review, which incorporated a bayesian meta-analysis of 14 randomized clinical trials involving 1244 patients, found moderate-certainty evidence indicating that standardized rehabilitation interventions were associated with improvements in functional exercise capacity (standardized mean difference, −0.56; 95% credible interval −0.87 to −0.22) and had a 99% posterior probability of superiority compared with standard care. However, a high level of uncertainty and imprecision was observed concerning the probability of experiencing exercise-induced adverse events. Meaning: Although respiratory training and exercise-based rehabilitation interventions might be associated with improved functional exercise capacity in patients with post–COVID-19 condition, it is recommended that health care professionals closely monitor these patients during the implementation of such interventions to ensure patient safety until more definitive evidence is available. Importance: Current rehabilitation guidelines for patients with post–COVID-19 condition (PCC) are primarily based on expert opinions and observational data, and there is an urgent need for evidence-based rehabilitation interventions to support patients with PCC. Objective: To synthesize the findings of existing studies that report on physical capacity (including functional exercise capacity, muscle function, dyspnea, and respiratory function) and quality of life outcomes following rehabilitation interventions in patients with PCC. Data Sources: A systematic electronic search was performed from January 2020 until February 2023, in MEDLINE, Scopus, CINAHL, and the Clinical Trials Registry. Key terms that were used to identify potentially relevant studies included long-covid, post-covid, sequelae, exercise therapy, rehabilitation, physical activity, physical therapy, and randomized controlled trial. Study Selection: This study included randomized clinical trials that compared respiratory training and exercise-based rehabilitation interventions with either placebo, usual care, waiting list, or control in patients with PCC. Data Extraction and Synthesis: This study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses. A pairwise bayesian random-effects meta-analysis was performed using vague prior distributions. Risk of bias was assessed using the Cochrane risk of bias tool version 2, and the certainty of evidence was evaluated using the GRADE system by 2 independent researchers. Main Outcomes and Measures: The primary outcome was functional exercise capacity, measured at the closest postintervention time point by the 6-minute walking test. Secondary outcomes were fatigue, lower limb muscle function, dyspnea, respiratory function, and quality of life. All outcomes were defined a priori. Continuous outcomes were reported as standardized mean differences (SMDs) with 95% credible intervals (CrIs) and binary outcomes were summarized as odds ratios with 95% CrIs. The between-trial heterogeneity was quantified using the between-study variance, τ2, and 95% CrIs. Results: Of 1834 identified records, 1193 were screened, and 14 trials (1244 patients; 45% female participants; median IQR] age, 50 47 to 56] years) were included in the analyses. Rehabilitation interventions were associated with improvements in functional exercise capacity (SMD, −0.56; 95% CrI, −0.87 to −0.22) with moderate certainty in 7 trials (389 participants). These improvements had a 99% posterior probability of superiority when compared with current standard care. The value of τ2 (0.04; 95% CrI, 0.00 to 0.60) indicated low statistical heterogeneity. However, there was significant uncertainty and imprecision regarding the probability of experiencing exercise-induced adverse events (odds ratio, 1.68; 95% CrI, 0.32 to 9.94). Conclusions and Relevance: The findings of this systematic review and meta-analysis suggest that rehabilitation interventions are associated with improvements in functional exercise capacity, dyspnea, and quality of life, with a high probability of improvement compared with the current standard care; the certainty of evidence was moderate for functional exercise capacity and quality of life and low for other outcomes. Given the uncertainty surrounding the safety outcomes, additional trials with enhanced monitoring of adverse events are necessary.

Access or request full text: https://libkey.io/10.1001/jamanetworkopen.2023.33838

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=172304493&custid=ns023446

39. Effects of Exercise Training on Patient-Specific Outcomes in Pancreatic Cancer Patients: A Scoping Review

Item Type: Journal Article

Authors: Rosebrock, Kim;Sinn, Marianne;Uzunoglu, Faik G.;Bokemeyer, Carsten;Jensen, Wiebke and Salchow, Jannike

Publication Date: 2023

Journal: Cancers 15(24), pp. 5899

Abstract: Simple Summary: Pancreatic cancer remains one of the most malignant solid tumours. Due to the disease's rapid progression, pancreatic cancer patients often experience great distress and suffer from symptoms such as pain, cachexia, sarcopenia, and cancer-related fatigue. The importance of exercise interventions as a supportive strategy in cancer patients to address these and other symptoms is steadily increasing, and strong evidence of various beneficial effects is shown. However, the impact of exercise on pancreatic cancer patients is still poorly characterized. Therefore, this scoping review aimed to evaluate the impact of exercise on pancreatic cancer patients. The results of this review suggest that exercise can improve different patient-specific outcomes in this population. To confirm these findings, further randomized-controlled trials are needed. Background: International guidelines have already highlighted the beneficial effects of exercise in common cancer entities. However, specific recommendations for pancreatic cancer are still missing. This scoping review aimed to evaluate the impact of exercise training on patient-specific outcomes in pancreatic cancer patients. Methods: A literature search was undertaken using PubMed, Web of Science, and Cochrane Library. We included randomized controlled trials (RCTs) published before August 2023 with structured exercise interventions during or after pancreatic cancer treatment. Results: Seven articles that prescribed home-based or supervised exercise with aerobic or resistance training or both were reviewed. The results indicate that exercise is feasible and safe in pancreatic cancer patients. Furthermore, exercise was associated with improved quality of life, cancer-related fatigue, and muscle strength. Concerning other outcomes, heterogeneous results were reported. We identified a lack of evidence, particularly for patients with advanced pancreatic cancer. Conclusion: Exercise interventions in pancreatic cancer patients are feasible and can lead to improved quality of life, cancer-related fatigue, and muscle strength. However, further studies with larger sample sizes are needed to clarify the potential of exercise in pancreatic cancer, in particular for advanced stages.

Access or request full text: https://libkey.io/10.3390/cancers15245899

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174403549&custid=ns023446

40. Effectiveness of home-based exercise interventions on pain, physical function and quality of life in individuals with knee osteoarthritis: a systematic review and meta-analysis

Item Type: Journal Article

Authors: Si, Juncheng;Sun, Lili;Li, Zheng;Zhu, Wenning;Yin, Weidong and Peng, Lina

Publication Date: 2023

Journal: Journal of Orthopaedic Surgery & Research 18(1), pp. 1-18

Abstract: Objective: The objective of the study was to evaluate the effectiveness of home-based exercise interventions on pain, physical function and quality of life in individuals with knee osteoarthritis (KOA). **Methods**: Five databases (PubMed, Embase, Cochrane Library, CINAHL, Web of Science Core Collection) were searched for relevant randomized controlled trials (RCTs) published from database inception to 2 August 2022. The Cochrane Collaboration's standards were followed for study selection, eligibility criteria, data extraction and statistics, using the Cochrane Collaboration Risk of Bias Tool and PEDro for quality assessment. A meta-analysis and subgroup analyses, stratified by control condition and intervention duration, were conducted using RevMan 5.4. The study was reported in compliance with the PRISMA statement. **Results:** A total of 12 independent RCTs with 1442 participants were included. The meta-analysis showed that the home-based exercise interventions significantly reduced pain in individuals with KOA (SMD = − 0.32, 95% CI − 0.41, − 0.22], p <.01) and improved physical function (SMD = − 0.25, 95% CI − 0.47, − 0.02], p =.03) and quality of life (SMD = 0.63, 95% CI 0.41, 0.85], p <.001). Subgroup analysis revealed that home-based exercise interventions were superior to health education and no treatment, in terms of pain and physical function, and similar to clinic-based exercise and pharmacologic treatment. **Conclusions:** The effect of home-based exercise intervention is significantly better than health education and no treatment for reducing knee pain and improving physical function, and was able to achieve the effects of clinic-based exercise treatment and pharmacologic treatment. With regard to quality of life, the unsupervised home strength exercise intervention showed a significant effect compared with the health education control and combined with cognitive behavioural therapies may produce better results. Although home-based intervention provides effective treatment options for individuals with clinical treatment limitations, individual disease complications and the dosimetry of exercise need to be considered in practice. Furthermore, growing evidence supports the effectiveness of Tai Chi in the rehabilitation of KOA.

Access or request full text: https://libkey.io/10.1186/s13018-023-04004-z

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=164982374&custid=ns023446

41. Exercise Training in Non-Hospitalized Patients with Post-COVID-19 Syndrome—A Narrative Review

Item Type: Journal Article

Authors: Sick, Johanna and König, Daniel

Publication Date: 2023

Journal: Healthcare (2227-9032) 11(16), pp. 2277

Access or request full text: https://libkey.io/10.3390/healthcare11162277

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=170737463&custid=ns023446

42. Psychological, social and lifestyle screening of people with low back pain treated by physiotherapists in a National Health Service musculoskeletal service: an audit

Item Type: Journal Article

Authors: Singh, Gurpreet;McNamee, George;Sharpe, Laura;Lucas, Michael;Lewis, Paul;Newton, Christopher;O'Sullivan, Peter;Lin, Ivan and O'Sullivan, Kieran

Publication Date: 2023

Journal: European Journal of Physiotherapy 25(1), pp. 20-26

Abstract: Psychological, social and lifestyle (multidimensional) factors predict low back pain (LBP). The Short Form Örebro Musculoskeletal Questionnaire (SFÖQ) helps clinicians identify these factors in people with LBP and was mandated in a physiotherapy department at one NHS Hospital Trust in the UK. This study examined (i) use of the SFÖQ by physiotherapists with varying levels of clinical experience; (ii) whether psychological, social, and lifestyle factors were documented in patient records; and (iii) physiotherapists views on using the SFÖQ, and screening for these factors. A retrospective audit of the physiotherapy records of 100 people referred with LBP. Eighty-one patient records were eligible for analysis. The SFÖQ was completed in 52 records. Fourteen of the completed SFÖQ's were used by physiotherapists. Screening for, and documentation of, multidimensional factors varied between factors ((i) psychological: cognitive (20%), emotional (26%); (ii) social (41%) and (iii) lifestyle (62%)). 67% of the most senior physiotherapists screened and documented emotional factors. Physiotherapists identified a lack of training, confidence and time as barriers to screening for multidimensional factors and using the SFÖQ. Physiotherapists rarely used the SFÖQ and did not consistently screen or document multidimensional factors. However, more senior physiotherapists more consistently screened and documented emotional factors.

Access or request full text: https://libkey.io/10.1080/21679169.2021.1950208

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=161688277&custid=ns023446

43. Comparability of the Effectiveness of Different Types of Exercise in the Treatment of Achilles Tendinopathy: A Systematic Review

Item Type: Journal Article

Authors: Sivrika, Aikaterini Pantelis;Papadamou, Eleni;Kypraios, George;Lamnisos, Demetris;Georgoudis, George and Stasinopoulos, Dimitrios

Publication Date: 2023

Journal: Healthcare (2227-9032) 11(16), pp. 2268

Access or request full text: https://libkey.io/10.3390/healthcare11162268

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=170737454&custid=ns023446

44. Supervised exercise therapy program vs non-supervised exercise therapy program after distal radius fracture: A systematic review and meta-analysis

Item Type: Journal Article

Authors: Soares, Felipe;Paranhos, Darlisson;Campos, Fernanda;Gasparini, Andrea and Fernandes, Luciane

Publication Date: 2023

Journal: Journal of Hand Therapy 36(4), pp. 860-876

Abstract: It is an updated systematic review with meta-analysis that compared supervised exercise therapy (SET) vs non-supervised exercise therapy (NSET) programs for patients with distal radius fracture. The purpose of this systematic review is to appraise the current literature to determine if SET program is more effective than a NSET program for pain relief, improvement of range of movement, function and grip strength, both in the short or medium term for patients following distal radius fractures. Systematic review. The following electronic databases were searched: Medline/Pubmed, PEDro, Cinahl, Embase, CENTRAL, and Lilacs. PICOT strategy was used for trial selection. The searches were conducted on August 22, 2021, and May 26, 2022. Two researchers performed an independent search for papers from the references of the chosen trials. Grading of Recommendations, Assessment, Development and Evaluations (GRADE) was used for assessing the quality of evidence. The search strategy identified 2786 potentially eligible studies and 15 studies met our inclusion criteria. The results did not show that the SET program was more effective than the NSET program for all outcomes, in both terms for patients after distal radius fractures. GRADE showed that all analyses presented very low-quality evidence. Even the results showing there was no difference between the two programs analyzed, the available evidence for randomized controlled trials was insufficient to support these results. • The trials selected have very low methodological quality. • It was not possible to conclude that there is no difference between the programs. • Future clinical trials are needed to conclude the effectiveness of the programs. • The non-supervised programs used very different methods. • Instructions, videos, booklets and advice were used as methods.

Access or request full text: https://libkey.io/10.1016/j.jht.2023.06.009

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174604760&custid=ns023446

45. Early Respiratory Physiotherapy versus an Individualized Postural Care Program for Reducing Mechanical Ventilation in Preterm Infants: A Randomised Controlled Trial

Item Type: Journal Article

Authors: Tana, Milena;Bottoni, Anthea;Cota, Francesco;Papacci, Patrizia;Di Polito, Alessia;Del Vecchio, Arianna;Vento, Anna Laura;Campagnola, Benedetta;Celona, Sefora;Cricenti, Laura;Bastoni, Ilaria;Tirone, Chiara;Aurilia, Claudia;Lio, Alessandra;Paladini, Angela;Nobile, Stefano;Perri, Alessandro;Sbordone, Annamaria;Esposito, Alice and Fattore, Simona

Publication Date: 2023

Journal: Children 10(11), pp. 1761

Abstract: Background: Tactile stimulation manoeuvres stimulate spontaneous breathing in preterm newborns. The aim of this study is to evaluate the effect of early respiratory physiotherapy on the need for mechanical ventilation during the first week of life in preterm infants with respiratory failure. **Methods:** This is a monocentric, randomised controlled trial. Preterm infants (gestational age ≤ 30 weeks) not intubated in the delivery room and requiring non-invasive respiratory support at birth were eligible for the study. The intervention group received early respiratory physiotherapy, while the control group received only a daily physiotherapy program (i.e., modifying the infant's posture in accordance with the patient's needs). **Results:** between October 2019 and March 2021, 133 preterm infants were studied, 68 infants in the study group and 65 in routine care. The study group showed a reduction in the need for mechanical ventilation (not statistically significant) and a statistically significant reduction in hemodynamically significant patent ductus arteriosus with respect to the control group (19/68 (28%) vs. 35/65 (54%), respectively, p = 0.03). **Conclusions:** early respiratory

physiotherapy in preterm infants requiring non-invasive respiratory support at birth is safe and has proven to be protective against haemodynamically significant PDA.

Access or request full text: https://libkey.io/10.3390/children10111761

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=173825289&custid=ns023446

46. The effect of an online-supervised exercise program in older people with diabetes on fasting blood sugar, psychological resilience and quality of life: A double blind randomised controlled trial

Item Type: Journal Article

Authors: Terkes, Nurten;Aksu, Neriman Temel and Yamac, Sabriye Ucan

Publication Date: 2023

Journal: International Journal of Older People Nursing 18(5), pp. 1-10

Abstract: Background: Online exercise interventions can improve physical outcomes. Online supervised exercise program is more effective than unsupervised exercise program. **Objectives:** The aim of this study is to determine the effect of an online supervised exercise program on fasting blood glucose, body mass index (BMI), resilience and quality of life in older people with diabetes. **Methods:** This parallel group randomised controlled study included 70 older patients with Type 2 diabetes. Participants were divided into online supervised and unsupervised exercise training groups. Participants in the online-supervised exercise group were given an online-supervised exercise program 3 days a week for 6 weeks. Personal Information Form, Short Resilience Scale and Quality of Life Scale in Older People were used to collect data. In addition, fasting blood sugar BMI and values were measured. **Results:** According to the results of our study, while there was no significant difference between the pre-and post-training scores of the supervised and unsupervised groups on the Psychological Resilience Scale and Quality of Life Scale, it was observed that there was a significant difference in both groups according to time ($p < .05$). When the difference between the scores of the groups before and after the training was analysed according to time, a significant difference was observed between the online-supervised and unsupervised exercise groups ($p < .05$). In addition, it was seen that there was a significant difference in the fasting blood sugar and BMI results of the online-supervised exercise group according to time ($p < .05$). **Conclusions**: Online supervised exercise program decreases fasting blood sugar and BMI, increases psychological resilience and quality of life of older patients with Type 2 diabetes. Implication for practice: Online supervised exercise program may be an additional treatment that provides benefits for older people with diabetes who cannot participate in clinical-based rehabilitation programs.

Access or request full text: https://libkey.io/10.1111/opn.12564

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=171875002&custid=ns023446

47. Core competencies for first contact physiotherapists in a direct access model of care for adults with musculoskeletal disorders: A scoping review

Item Type: Journal Article

Authors: Vervaeke, Robin;Lafrance, Simon and Demont, Anthony

Publication Date: 2023

Journal: Musculoskeletal Care 21(4), pp. 1353-1363

Abstract: Introduction: To optimise the management of Musculoskeletal disorders (MSKDs), many countries have implemented direct access to physiotherapy; however, the core competencies required for first contact physiotherapists (PTs) have not been precisely defined. The aim of this scoping review is to identify and describe the core competencies required for first contact PTs treating adults with MSKDs. **Methods:** We conducted a scoping review of the literature by searching eight databases and grey literature up to July 2023. We performed a thematic analysis of the competencies identified based on predefined themes relevant to first contact physiotherapy in direct access models in primary or emergency care settings. **Results:** Sixty-five articles were included. Seventeen core competencies were identified and grouped into 5 themes: (1) Assessment and examination; (2) Management and interventions; (3) Communication; (4) Cooperation and collaboration; and (5) Professionalism and leadership. **Conclusions:** Our findings provide an international perspective on the core competencies required for first contact PTs.

Access or request full text: https://libkey.io/10.1002/msc.1813

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=174158050&custid=ns023446

48. Effectiveness of different exercises in improving postural balance among Parkinson's disease patients: a systematic review and network meta-analysis

Item Type: Journal Article

Authors: Wang, Di;Cui, Wen J.;Hou, Zhen H. and Gao, Ying

Publication Date: 2023

Journal: Frontiers in Aging Neuroscience , pp. 1-12

Abstract: Background: Exercise has been reported as an effective intervention for Parkinson's disease. However, there is still debate on the what kinds of exercises prior to choosing. This study aimed to compare and rank the different exercises that effectively enhance postural balance in Parkinson's disease patients by quantifying the information gleaned from randomized controlled trials (RCTs). **Methods:** We conducted a comprehensive database search, including PubMed, Cochrane Library, Embase, Web of Science, and PsycINFO. The included studies were evaluated for methodological quality by the Cochrane Risk of Bias tool. **Results:** The RCTs were collected between the earliest available date and March 2023. Sixty RCTs were included and the total sample size used in the study was 3,537. Thirty-five studies were defined as low risk of bias, twenty-one studies as medium risk of bias, and four studies as high risk of bias. The network meta-analysis results showed that exergaming exercise can significantly improve patients' Timed-Up-and-Go time (SUCRA = 91.5%). Dance can significantly enhance patients' Berg Balance Scale (surface under the cumulative ranking curve, SUCRA = 81.3%), and rhythmical auditory exercise can significantly improve patients' Mini-Balance Evaluation Systems Test score (SUCRA = 95.6%). **Conclusion:** Compared with other exercises, exergaming exercise, Dance, and rhythmical auditory exercise showed superior efficacy in improving postural balance among Parkinson's disease patients.

Access or request full text: https://libkey.io/10.3389/fnagi.2023.1215495

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=169738025&custid=ns023446

49. Effects of Different Exercise Modes on Gait Performance of Parkinson's Disease Patients: A Systematic Review and Network Meta-Analysis

Item Type: Journal Article

Authors: Zhang, Shi-kun;Gu, Mei-ling;Xu, Hong;Zhou, Wen-sheng;Mao, Su-jie and Yang, Yong

Publication Date: 2023

Journal: Perceptual & Motor Skills 130(4), pp. 1524-1561

Abstract: Gait disturbances are among the main symptoms of Parkinson's disease (PD) and can increase fall risk. In this study we aimed to systematically evaluate the effects of different exercise modes on gait indexes of PD patients. We conducted a review and network meta-analysis of randomized controlled trials in studies listed in Web of Science, MEDLINE, EMBASE, PsycINFO, Cochrane Library, ClinicalTrailS.gov, and China National Knowledge Infrastructure databases from their inception to October 23, 2021. Eligible studies were randomized controlled trials investigating the effect of exercise on gait index by using the Timed Up and Go test, (TUG), stride length, stride cadence, or 6 Minutes Walking Test (6MWT). We used Review Manager 5.3 to evaluate the quality of the included literature, and we used Stata 15.1 and R-Studio for the network meta-analysis. We assessed the relative ranking of therapies by the surface under the cumulative ranking possibilities. In 159 studies, there were 24 exercise interventions. Compared with the control group, 13 exercises showed significant improvements on the TUG; six exercises were significantly better for improving stride length; only one exercise was better for improving stride cadence; and four exercises were better for improving the 6MWT. The surface under the cumulative ranking curves suggested that Pilates, body weight support treadmill training, resistance training, and a multidisciplinary exercise program were preferable for gains on TUG, stride length, stride cadence, and 6MWT. This meta-analytic review found that exercise therapies bring obvious benefits to gait indexes of patients with PD, and the efficacy of exercise therapies varied with different types of exercise and outcome indexes.

Access or request full text: https://libkey.io/10.1177/00315125231178669

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=165473542&custid=ns023446

50. Effects of exercise therapy on disability, mobility, and quality of life in the elderly with chronic low back pain: a systematic review and meta-analysis of randomized controlled trials

Item Type: Journal Article

Authors: Zhang, Shi-kun;Gu, Mei-ling;Zhang, Ting;Xu, Hong;Mao, Su-jie and Zhou, Wen-sheng

Publication Date: 2023

Journal: Journal of Orthopaedic Surgery & Research 18(1), pp. 1-18

Abstract: Background: Exercise is an effective treatment in chronic low back pain (CLBP), but there are few studies on CLBP in the elderly, and the intervention effect is controversial. We aimed to compare the efficacy of different exercises therapy on CLBP, dysfunction, quality of life, and mobility in the elderly. **Methods:** We searched Web of Science, MEDLINE, Cochrane Library, Chinese National Knowledge Infrastructure, EMBASE, and PubMed from the database inception till December 31, 2022. The publication languages were Chinese and English. Randomized controlled trials (RCTs) of exercise intervention in the elderly (≥ 60 years) with CLBP were

included. Two reviewers independently extracted the data and evaluated them using the Revised Cochrane Risk of Bias Tool for Randomized Trials 2 (RoB2). The pooled effect sizes on different aspects of outcome measures were calculated. **Results:** Sixteen articles (18 RCTs) were included, comprising a total of 989 participants. The quality of included studies was relatively high. Meta-analysis results indicated that exercise therapy could improve visual analog scale (VAS) (WMD = − 1.75, 95% CI − 2.59, − 0.92, p < 0.05), Oswestry disability index (ODI) (WMD = − 9.42, 95% CI − 15.04, − 3.79, p < 0,005), short-form 36-item health survey physical composite summary (SF-36PCS) (WMD = 7.07, 95% CI 1.01, 13.14, p < 0.05), short-form 36-item health survey mental composite summary (SF-36MCS) (WMD = 7.88, 95% CI 0.09, 15.67, p < 0.05), and timed up and go test (TUG) (WMD = − 0.92, 95% CI − 2.22, 0.38, p < 0.005). **Conclusion:** Exercise therapy effectively improved VAS, ODI, and SF-36 indexes in the elderly. Based on the subgroup, when designing the exercise therapy regimen, aerobics, strength, and mind–body exercise (≥ 12 weeks, ≥ 3 times/week, ≥ 60 min) should be considered carefully, to ensure the safety and effectiveness for the rehabilitation of CLBP patients. More high-quality trials are needed in future to confirm the effect of exercise on SF-36 and TUG indexes.

Access or request full text: https://libkey.io/10.1186/s13018-023-03988-y

URL: https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=165048850&custid=ns023446