

Physiotherapy Update

January-June 2022



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.

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A selection of papers from Medline and CINHAL from January – June 2022

1. Effect of the knee replacement surgery on activity level based on ActivPAL: a systematic review and meta-analysis study

Item Type: Journal Article

Authors: Alfatafta, Huda;Alfatafta, Mahmoud;Onchonga, David;Hammoud, Sahar;Khatatbeh, Haitham;Zhang, Lu;Boncz, Imre;Lohner, Szimonetta and Molics, Bálint

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-9

Abstract: Background: The knee replacement (KR) surgery aims to restore the activity level and reduce the risk of experiencing disabilities. The outcomes of this surgery are evaluated mainly with subjective tools or low validity objective tools. However, the effect of the surgery on activity level using high validity objective accelerometer is still in question. Methods: A systematic review and meta-analysis were conducted to evaluate the benefit of KR surgery alone to enhance physical activity recommendations based on high validity accelerometer. Two independent reviewers evaluated five electronic databases (Cochrane-Central-Register-of-Controlled Trials, EMBASE, PubMed, Web of Science, and Scopus) to find relative studies between January 2000 and October 2021. The quality assessments and risk of bias assessments were examined. Results: Three articles were included with 202 participants (86 males, 116 females), with an average age of 64 years and an average 32 kg/m² body mass index. The results found that the number of steps was significantly improved up to 36.35 and 45.5% after 6-months and 1-year of the surgery, respectively. However, these changes did not meet the recommended activity level guideline and could be related to the patients' health status and their activity level before the surgery. No significant changes were seen in sedentary time, standing time, and upright time after 6-months and 1-year follow-ups. Heterogeneity among studies was low to moderate (0-63%). Conclusion: Knee replacement surgery is an effective treatment for improving patients' quality of life with severe knee injuries. However, various factors impact the success of surgical and achieving maximum benefit of the surgery. One factor, sedentary time, can be reduced by implementing pre-and post-surgery exercise or physical activity recommendations. Further studies are needed to understand the benefit of surgery with or without rehabilitation assessed using high validity monitors.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05531-2>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157462874&custid=ns023446>

2. Using a modified nominal group technique to develop complex interventions for a randomised controlled trial in children with symptomatic pes planus

Item Type: Journal Article

Authors: Backhouse, Michael R.;Parker, Daniel J.;Morison, Stewart C.;Anderson, Jenny;Cockayne, Sarah and Adamson, Joy A.

Publication Date: 2022

Journal: Trials 23(1), pp. 1-8

Abstract: Background: Children with symptomatic flat feet (pes planus) frequently present for care but there remains uncertainty about how best to manage their condition. There is considerable variation in

practice between and within professions. We intend to conduct a three-arm trial to evaluate three frequently used interventions for pes planus (exercise and advice, exercise and advice plus prefabricated orthoses, and exercise and advice plus custom made orthoses). Each of these interventions are complex and required developing prior to starting the trial. This paper focusses on the development process undertaken to develop the interventions. Methods: We used a modified Nominal Group Technique combining an electronic survey with two face-to-face meetings to achieve consensus on the final logic model and menu of options for each intervention. Using the Nominal Group Technique across consecutive meetings in combination with a questionnaire is novel, and enabled us to develop complex interventions that reflect contemporary clinical practice. Results: In total 16 healthcare professionals took part in the consensus. These consisted of 11 podiatrists, two orthotists, two physiotherapists, and one orthopaedic surgeon. Both meetings endorsed the logic model with amendments to reflect the wider psychosocial impact of pes planus and its treatment, as well as the increasing use of shared decision making in practice. Short lists of options were agreed for prefabricated and custom made orthoses, structures to target in stretching and strengthening exercises, and elements of health education and advice. Conclusions: Our novel modification of the nominal group technique produced a coherent logic model and shortlist of options for each of the interventions that explicitly enable adaptability. We formed a consensus on the range of what is permissible within each intervention so that their integrity is kept intact and they can be adapted and pragmatically applied. The process of combining survey data with face-to-face meetings has ensured the interventions mirror contemporary practice and may provide a template for other trials.

Access or request full text: <https://libkey.io/10.1186/s13063-022-06251-7>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156244288&custid=ns023446>

3. The prevalence of musculoskeletal pain and therapy needs in adults with Osteogenesis Imperfecta (OI) a cross-sectional analysis

Item Type: Journal Article

Authors: Barlow, Sophie;Dove, Lucy;Jaggi, Anju;Keen, Richard and Bubbear, Judith

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-7

Abstract: Background: Osteogenesis Imperfecta affects approximately 1 in every 10,000 people. Musculoskeletal disorders and pain are common in adults with Osteogenesis Imperfecta, but specific knowledge of the problems people have is lacking. Access to therapy services for adults with Osteogenesis Imperfecta is variable. We designed this analysis to better understand the musculoskeletal disorders and consequent therapy needs for adults with Osteogenesis Imperfecta. METHODS: This study was a cross-sectional analysis of outpatients with Osteogenesis Imperfecta. Adults attending a newly established multidisciplinary clinic at a tertiary centre in 2019 were included. A highly specialist physiotherapist worked within the clinic to offer therapy input if required and to refer patients to appropriate therapy as needed. People over the age of 18 were included if they had a diagnosis of Osteogenesis Imperfecta. Data were collected over a five month period using routinely collected clinical information and patient reported outcomes. Results: Over five months 50 patients attended the clinic. Musculoskeletal pain was a significant feature reported by 84% of patients. Over 50% of patients reported persistent pain for longer than one year duration and the most common site of pain was in the spine (46%). No difference in pain between types of OI and age. Forty five per cent (n = 19) of patients reported moderate to severe problems with mobility on the EQ-5D with over half reporting problems with self-care and ability to carry out usual activities. Over 50% of patients in clinic also reported anxiety (EQ-5D). During the consultation 70% of patients received therapy input which was either advice in clinic or an onward referral to the appropriate service. The referral rate to specialist out-patient rehabilitation services at a tertiary centre was 30%.Conclusions: This analysis highlights the high prevalence of MSK pain in adults with OI and the effect on physical function and

emotional wellbeing. This study demonstrates the diverse needs of the adult Osteogenesis Imperfecta population and the need for suitable multidisciplinary therapy services.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05433-3>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157004141&custid=ns023446>

4. Effectiveness of workshops to teach a home-based exercise program (BEST at Home) for preventing falls in community-dwelling people aged 65 years and over: a pragmatic randomised controlled trial

Item Type: Journal Article

Authors: Bates, Amanda;Furber, Susan;Sherrington, Cathie;van den Dolder, Paul;Ginn, Karen;Bauman, Adrian;Howard, Kirsten;Kershaw, Michelle;Franco, Lisa;Chittenden, Cathy and Tiedemann, Anne

Publication Date: 2022

Journal: BMC Geriatrics 22(1), pp. 1-13

Abstract: Background: Falls are a significant public health issue. There is strong evidence that exercise can prevent falls and the most effective programs are those that primarily involve balance and functional exercises, however uptake of such programs is low. Exercise prescribed during home visits by health professionals can prevent falls however this strategy would be costly to deliver at scale. We developed a new approach to teach home exercise through group-based workshops delivered by physiotherapists. The primary aim was to determine the effect of this approach on the rate of falls among older community-dwelling people over 12 months. Secondary outcomes included the proportion of people falling, fear of falling, physical activity, lower limb strength, balance and quality of life. Methods: A randomised controlled trial was conducted among community-dwelling people aged ≥ 65 in New South Wales, Australia. Participants were randomised to either the intervention group (exercise targeting balance and lower limb strength) or control group (exercise targeting upper limb strength). Results: A total of 617 participants (mean age 73 years, \pm SD 6, 64% female) were randomly assigned to the intervention group ($n = 307$) or control group ($n = 310$). There was no significant between-group difference in the rate of falls (IRR 0.91, 95% CI 0.64 to 1.29, $n = 579$, $p = 0.604$) or the number of participants reporting one or more falls (IRR 0.99, 95% CI 0.76 to 1.29, $n = 579$, $p = 0.946$) during 12 month follow-up. A significant improvement in the intervention group compared to control group was found for fear of falling at 3, 6 and 12 months (mean difference 0.50, 95% CI 0.2 to 0.8, $p = 0.004$; 0.39, 95% CI 0.001 to 0.8, $p = 0.049$; 0.46, 95% CI 0.006 to 0.9, $p = 0.047$, respectively), and gait speed at 3 months (mean difference 0.09 s, 95% CI 0.003 to 0.19, $p = 0.043$). No statistically significant between-group differences were detected for the other secondary outcomes. Conclusions: There was no significant intervention impact on the rate of falls, but the program significantly reduced fear of falling and improved gait speed. Other exercise delivery approaches are needed to ensure an adequate intensity of balance and strength challenge and dose of exercise to prevent falls.

Access or request full text: <https://libkey.io/10.1186/s12877-022-03050-2>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156525768&custid=ns023446>

5. INSPIRA: study protocol for a randomized-controlled trial about the effect of spirometry-assisted preoperative inspiratory muscle training on postoperative complications in abdominal surgery

Item Type: Journal Article

Authors: Birrer, D. L.;Kuemmerli, C.;Obwegeser, A.;Liebi, M.;von Felten, S.;Pettersson, K. and Horisberger, K.

Publication Date: 2022

Journal: Trials 23(1), pp. 1-13

Abstract: Background: Rehabilitation strategies after abdominal surgery enhance recovery and improve outcome. A cornerstone of rehabilitation is respiratory physiotherapy with inspiratory muscle training to enhance pulmonary function. Pre-habilitation is the process of enhancing functional capacity before surgery in order to compensate for the stress of surgery and postoperative recovery. There is growing interest in deploying pre-habilitation interventions prior to surgery. The aim of this study is to assess the impact of preoperative inspiratory muscle training on postoperative overall morbidity. The question is, whether inspiratory muscle training prior to elective abdominal surgery reduces the number of postoperative complications and their severity grade. Methods: We describe a prospective randomized-controlled single-centre trial in a tertiary referral centre. The primary outcome is the Comprehensive Complication Index (CCI) at 90 days after surgery. The CCI expresses morbidity on a continuous numeric scale from 0 (no complication) to 100 (death) by weighing all postoperative complications according to the Clavien-Dindo classification for their respective severity. In the intervention group, patients will be instructed by physiotherapists to perform inspiratory muscle training containing of 30 breaths twice a day for at least 2 weeks before surgery using Power@Breathe KHP2. Depending on the surgical schedule, training can be extended up to 6 weeks. In the control group, no preoperative inspiratory muscle training will be performed. After the operation, both groups receive the same physiotherapeutic support. Discussion: Existing data about preoperative inspiratory muscle training on postoperative complications are ambiguous and study protocols are often lacking a clear design and a clearly defined endpoint. Most studies consist of multi-stage concepts, comprehensively supervised and long-term interventions, whose implementation in clinical practice is hardly possible. There is a clear need for randomized-controlled studies with a simple protocol that can be easily transferred into clinical practice. This study examines the effortless adjustment of the common respiratory physiotherapy from currently postoperative to preoperative. The external measurement by the device eliminates the diary listing of patients' performances and allows the exercise adherence and thus the effect to be objectively recorded. Trial Registration: ClinicalTrials.gov NCT04558151 . Registered on September 15, 2020.

Access or request full text: <https://libkey.io/10.1186/s13063-022-06254-4>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157304610&custid=ns023446>

6. Machine learning methods for functional recovery prediction and prognosis in post-stroke rehabilitation: a systematic review

Item Type: Journal Article

Authors: Campagnini, Silvia;Arienti, Chiara;Patrini, Michele;Liuzzi, Piergiuseppe;Mannini, Andrea and Carrozza, Maria Chiara

Publication Date: 2022

Journal: Journal of NeuroEngineering & Rehabilitation (JNER) 19(1), pp. 1-22

Abstract: Background: Rehabilitation medicine is facing a new development phase thanks to a recent wave of rigorous clinical trials aimed at improving the scientific evidence of protocols. This phenomenon, combined with new trends in personalised medical therapies, is expected to change clinical practice dramatically. The emerging field of Rehabilomics is only possible if methodologies are based on biomedical data collection and analysis. In this framework, the objective of this work is to develop a systematic review of machine learning algorithms as solutions to predict motor functional recovery of post-stroke patients after treatment. Methods: We conducted a comprehensive search of five electronic databases using the

Patient, Intervention, Comparison and Outcome (PICO) format. We extracted health conditions, population characteristics, outcome assessed, the method for feature extraction and selection, the algorithm used, and the validation approach. The methodological quality of included studies was assessed using the prediction model risk of bias assessment tool (PROBAST). A qualitative description of the characteristics of the included studies as well as a narrative data synthesis was performed. Results: A total of 19 primary studies were included. The predictors most frequently used belonged to the areas of demographic characteristics and stroke assessment through clinical examination. Regarding the methods, linear and logistic regressions were the most frequently used and cross-validation was the preferred validation approach. Conclusions: We identified several methodological limitations: small sample sizes, a limited number of external validation approaches, and high heterogeneity among input and output variables. Although these elements prevented a quantitative comparison across models, we defined the most frequently used models given a specific outcome, providing useful indications for the application of more complex machine learning algorithms in rehabilitation medicine.

Access or request full text: <https://libkey.io/10.1186/s12984-022-01032-4>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157261425&custid=ns023446>

7. Effects of control strategies on gait in robot-assisted post-stroke lower limb rehabilitation: a systematic review

Item Type: Journal Article

Authors: Campagnini, Silvia;Liuzzi, Piergiuseppe;Mannini, Andrea;Riener, Robert and Carrozza, Maria Chiara

Publication Date: 2022

Journal: Journal of NeuroEngineering & Rehabilitation (JNER) 19(1), pp. 1-16

Abstract: Background: Stroke related motor function deficits affect patients' likelihood of returning to professional activities, limit their participation in society and functionality in daily living. Hence, robot-aided gait rehabilitation needs to be fruitful and effective from a motor learning perspective. For this reason, optimal human-robot interaction strategies are necessary to foster neuroplastic shaping during therapy. Therefore, we performed a systematic search on the effects of different control algorithms on quantitative objective gait parameters of post-acute stroke patients. Methods: We conducted a systematic search on four electronic databases using the Population Intervention Comparison and Outcome format. The heterogeneity of performance assessment, study designs and patients' numerosity prevented the possibility to conduct a rigorous meta-analysis, thus, the results were presented through narrative synthesis. Results: A total of 31 studies (out of 1036) met the inclusion criteria, without applying any temporal constraints. No controller preference with respect to gait parameters improvements was found. However, preferred solutions were encountered in the implementation of force control strategies mostly on rigid devices in therapeutic scenarios. Conversely, soft devices, which were all position-controlled, were found to be more commonly used in assistive scenarios. The effect of different controllers on gait could not be evaluated since conspicuous heterogeneity was found for both performance metrics and study designs. Conclusions: Overall, due to the impossibility of performing a meta-analysis, this systematic review calls for an outcome standardisation in the evaluation of robot-aided gait rehabilitation. This could allow for the comparison of adaptive and human-dependent controllers with conventional ones, identifying the most suitable control strategies for specific pathologic gait patterns. This latter aspect could bolster individualized and personalized choices of control strategies during the therapeutic or assistive path.

Access or request full text: <https://libkey.io/10.1186/s12984-022-01031-5>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157261424&custid=ns023446>

d=ns023446

8. Study protocol for 'the effects of multimodal training of cognitive and/or physical functions on cognition and physical fitness of older adults: a cluster randomized controlled trial'

Item Type: Journal Article

Authors: Chow, Bik-Chu;Jiao, Jiao;Man, David and Lippke, Sonia

Publication Date: 2022

Journal: BMC Geriatrics 22(1), pp. 1-9

Abstract: Background: The elderly population worldwide is increasing exponentially which will be associated with more people suffering from cognition and fitness declines. The well-established benefits of exercise training for the elderly's cognitive and physical functioning have been observed. However, the amalgamated effect of combining cognitive and physical exercises on the older adults' cognitive functions, physical fitness, or psycho-related health remains unclear. Thus, this study protocol was planned to conduct different combinations of cognitive and/or physical training interventions to community-dwelling older adults and expected to see the multifaceted effects of the varied combination of training on their health. Methods: This study is a cluster randomized controlled trial (CRCT). A total of 285 older adults (age ≥ 60) from twenty elderly centres as clusters will be randomly selected and assigned to intervention groups (IGs, $n = 16$) or control groups (CGs, $n = 4$). Each IG will be randomly assigned to one of the four combinations of three training modes that include cognitive (A), physical (B), and combined cognitive and physical training (CCPT, i.e. C), namely Mixed ABC, A + B, C + A, B + C. The intervention will last for 4 months in which the training is conducted for 16 sessions, 2 sessions per week, and 60 min per session. Four repeated assessments (pre-test, two post-training tests after 2 months and 4 months, and a follow-up test) will be conducted. The CG will only receive the four repeated assessments but no intervention. The outcome measures include cognitive tests (tests of execution, memory, and psych-social status), physical fitness, and dynamic balance tests. Discussion: This study will provide substantial evidence that the integrated format of cognitive and physical exercises training will have higher cognition and fitness impact than the single training modes, and all these mixed modalities will have greater positive outcomes than the control condition. If the effectiveness is proven, the intervention can be further explored and extended to the nation so that many more elderly would be benefited. Trial Registration: The trial has been registered in the ClinicalTrials.gov in U.S. NIH (ID: NCT04727450 , date: January 27, 2021).

Access or request full text: <https://libkey.io/10.1186/s12877-022-03031-5>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=158162564&custid=ns023446>

9. Evaluating the effectiveness of patient tailored treatment for patients with non-specific low back pain: A systematic review

Item Type: Journal Article

Authors: Chys, M.;Cagnie, B.;De Meulemeester, K.;Bontinck, J.;Meeus, M. and Dewitte, V.

Publication Date: 2022

Journal: Musculoskeletal Care 20(1), pp. 31-46

Abstract: Objective: This systematic review summarizes the relevant literature on the effectiveness of tailored interventions in non-specific low back pain (NSLBP). Methods: The search strategy has been

executed in December 2019 in the electronic databases PubMed, Web of Science and Embase. Study selection, data extraction and quality assessment were done independently by two authors. Results: A total six eligible studies were identified. Five out of six articles used a classification system to subgroup patients. All active patient tailored interventions had similar or better results than the non-patient tailored interventions, most importantly on pain (short- and mid-term, not for long term follow-up). Two motor control interventions revealed sustained or increased effects at 12 months follow-up for disability. For cost-effectiveness, medication use and work absenteeism, results were inconclusive. Global rating of change evaluation confirmed significant between-group results at 10 weeks to 4 months follow-up, but results were not maintained at 12-month evaluation. Discussion & conclusion: Our findings support the preliminary evidence for the use of patient tailored treatment for reductions in pain and disability. However, our results are of very low to moderate quality evidence and the observed effects strongly depend on the subgroups and the chosen interventions. More high-quality RCT's with homogenous designs and larger sample sizes are needed.

Access or request full text: <https://libkey.io/10.1002/msc.1572>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155730480&custid=ns023446>

10. **Effective interventions to improve long-term physiotherapy exercise adherence among patients with lower limb osteoarthritis. A systematic review**

Item Type: Journal Article

Authors: Cinthuja, Pathmanathan; Krishnamoorthy, Nidhya and Shivapatham, Gamalendir

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-11

Abstract: Introduction: Osteoarthritis (OA) is a chronic condition. Physiotherapy is known to be beneficial for people with OA. Patient adherence to physiotherapy exercise is essential for the effective management of OA. Objectives: To determine different methods used to enhance physiotherapy exercise adherence for a period of more than 12 months among patients with OA and to report the most effective methods to enhance exercise adherence among people with lower limb OA. Design: Systematic review. Methods: PubMed, Pedro, Web of Science, and EMBASE databases were searched for randomized controlled trials, cohort studies, case-control studies, and cross-sectional studies published in the English language from 2000 to 2020. The literature search was done on 27 August 2020. Two researchers independently conducted the screening, eligibility assessment, data extraction, methodology quality assessment using the PEDro scale, and risk of bias assessment using RoB2. A narrative synthesis of key outcomes is presented, percentage of adherence rate; Preferred Reporting Items for Systematic Review was used to report the review. Meta-analysis was not performed due to heterogeneity of studies. The study protocol was registered in Prospero (Prospero ID: CRD42020205653). Results: The primary search strategy identified 5839 potentially relevant articles, of which 5157 remained after discarding duplicates. After screening based on title and abstract, 40 papers were potentially eligible for inclusion. Five of these papers met all predefined eligibility criteria. Introducing methods to enhance exercise adherence has caused a significant increase in exercise adherence for less than 6 or 12 months. There were no significant differences in adherence for more than 12 months with different methods. The results indicate that booster-sessions (89.69%) and telephone-linked communication (86%) had higher percentages for exercise adherence. Secondary outcomes such as pain, stiffness and function show positive outcomes with increasing exercise adherence. However, there were no significant differences on these secondary outcomes. Conclusion: The booster sessions and telephone-linked communication appear to enhance exercise adherence for more than 12 months among patients with OA. However, the number of high-quality studies is inadequate to confirm our findings. Therefore, more studies with higher methodological quality are needed to determine the best strategies to enhance long-term exercise adherence among people with OA.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05050-0>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155237558&custid=ns023446>

11. The active knee extension after extensor mechanism reconstruction using allograft is not influenced by "early mobilization": a systematic review and meta-analysis

Item Type: Journal Article

Authors: De Franco, Cristiano; de Matteo, Vincenzo; Lenzi, Marco; Marano, Ernesto; Festa, Enrico; Bernasconi, Alessio; Smeraglia, Francesco and Balato, Giovanni

Publication Date: 2022

Journal: Journal of Orthopaedic Surgery & Research 17(1), pp. 1-8

Abstract: Background: Postoperative rehabilitation after extensor mechanism reconstruction (EMR) with allograft following total knee arthroplasty (TKA) is not standardized. This meta-analysis aimed to evaluate the effectiveness of early and late knee mobilization after EMR. The range of motion (ROM) and extensor lag in both groups were also assessed as the secondary endpoint. Methods: Following the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) guidelines, a systematic review of the literature was performed, including studies dealing with the use of allograft for EMR following TKA. Failure was defined as the persistence of extensor lag > 20°. Coleman Methodology Score and Methodological Index for Non-Randomized Studies (MINORS) score were used to assess the quality of studies included. The failure rate was set as the primary outcome in early (4 weeks) and late (8 weeks) mobilization groups after EMR with allograft. Secondary outcomes were postoperative extensor lag and ROM. Results: Twelve articles (129 knees) were finally selected for this meta-analysis. Late and early knee mobilization was described in five and seven studies, respectively. No difference was noted between both groups' failure rates (11/84 vs. 4/38, respectively; $p = 0.69$). The mean extensor lag at last follow-up was $9.1^\circ \pm 8.6$ in the early mobilization group, and $6.5^\circ \pm 6.1$ in the late mobilization group is not significantly different ($p > 0.05$). The mean postoperative knee flexion was $107.6^\circ \pm 6.5$ and $104.8^\circ \pm 7$ in the early and late mobilization group, respectively. Conclusion: While immobilization after EMR in TKA is mandatory to allow tissue healing, early knee mobilization after four weeks can be recommended with no additional risk of failure and increased extensor lag compared to a late mobilization protocol. Level of evidence: IV, therapeutic study. Registration PROSPERO (International Prospective Register of Systematic Reviews): CRD42019141574.

Access or request full text: <https://libkey.io/10.1186/s13018-022-03049-w>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155689371&custid=ns023446>

12. Why falls risk shouldn't be a barrier to mobilisation: Bed may seem the safest place for older or frail patients, but preventing deconditioning by supporting people to move around is a hallmark of holistic care

Item Type: Journal Article

Authors: Dean, Erin

Publication Date: 2022

Journal: Nursing Standard 37(4), pp. 35-37

Abstract: With two older relatives in hospital in one year, retired senior nurse Anne Cooper was surprised to be told neither would be supported to mobilise until a physiotherapist assessed them.

Access or request full text: <https://libkey.io/10.7748/ns.37.4.35.s18>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156161792&custid=ns023446>

13. Impairment characteristics of static balance and plantar load distribution of patients undergoing tibial cortex transverse distraction for diabetic foot ulcers

Item Type: Journal Article

Authors: Fan, Zhi-Qiang and Liu, De-Wu

Publication Date: 2022

Journal: Journal of Orthopaedic Surgery & Research 17(1), pp. 1-8

Abstract: Objective: Tibial cortex transverse distraction (TCTD) has been recently reported for the treatment of diabetic foot ulcers. Herein, we explored the characteristics of the impairments in static balance and plantar load distribution in patients. Methods: We performed a retrospective study of 21 patients with diabetic foot ulcers who underwent TCTD, who were regularly followed up for > 1 year after surgery, and 20 healthy individuals (control group). A pressure platform was used to assess the standing balance functions of the lower extremities and the plantar load distribution. Results: One patient underwent amputation because of severe infection. In patient group, center of pressure (COP) ellipse sway area, COP path length and angle θ were all larger, compared with those of control group ($250.15 \pm 98.36 \text{ mm}^2$ vs. $135.67 \pm 53.21 \text{ mm}^2$, $145.15 \pm 67.43 \text{ mm}$ vs. $78.47 \pm 34.15 \text{ mm}$, $39.75 \pm 17.61^\circ$ vs. $22.17 \pm 14.15^\circ$), with statistically significant differences ($P < 0.01$). The average plantar load and backfoot load of the unaffected side was significantly larger than that of the affected side ($58.4 \pm 5.5\%$ vs. $41.6 \pm 5.5\%$, $45.3 \pm 6.4\%$ vs. $36.5 \pm 5.6\%$), but they were similar for the two feet of members of the control group. Conclusions: Although TCTD may represent an appropriate method for the treatment of diabetic foot ulcers, postoperative impairments in static balance and plantar load distribution remain in the long term. These potential long-term problems should be taken into account in further rehabilitation planning. Type of study/level of evidence: Therapeutic III.

Access or request full text: <https://libkey.io/10.1186/s13018-022-03042-3>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155870501&custid=ns023446>

14. Effectiveness of physiotherapy interventions for back care and the prevention of non-specific low back pain in children and adolescents: a systematic review and meta-analysis

Item Type: Journal Article

Authors: García-Moreno, José Manuel;Calvo-Muñoz, Inmaculada;Gómez-Conesa, Antonia and López-López, José Antonio

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-14

Abstract: Background: Non-specific low back pain in children and adolescents has increased in recent

years. The purpose of this study was to upgrade the evidence of the most effective preventive physiotherapy interventions to improve back care in children and adolescents. Methods: The study settings were children or adolescents aged 18 years or younger. Data were obtained from the Cochrane Library, MEDLINE, PEDro, Web of Science, LILACS, IBECs, and PsycINFO databases and the specialized journals BMJ and Spine. The included studies were published between May 2012 and May 2020. Controlled trials on children and adolescents who received preventive physiotherapy for back care were considered. Data on all the variables gathered in each individual study were extracted by two authors separately. Two authors assessed risk of bias of included studies using the RoB2 and quality of the body of evidence using the GRADE methodology. Data were described according to PRISMA guidelines. To calculate the effect size, a standardized mean difference "d" was used and a random-effects model was applied for the following outcome variables: behaviour, knowledge, trunk flexion muscle endurance, trunk extension muscle endurance, hamstring flexibility and posture. Results: Twenty studies were finally included. The most common physiotherapy interventions were exercise, postural hygiene and physical activity. The mean age of the total sample was 11.79 years. When comparing the change from baseline to end of intervention in treatment and control groups, the following overall effect estimates were obtained: behaviour $d+ = 1.19$ (95% CI: 0.62 and 1.76), knowledge $d+ = 1.84$ (0.58 and 3.09), trunk flexion endurance $d+ = 0.65$ (-0.02 and 1.33), trunk extension endurance $d+ = 0.71$ (0.38 and 1.03), posture $d+ = 0.65$ (0.24 and 1.07) and hamstrings flexibility $d+ = 0.46$ (0.36 and 0.56). At follow-up, the measurement of the behaviour variable was between 1 and 12 months, with an effect size of $d+ = 1.00$ (0.37 and 1.63), whereas the knowledge variable obtained an effect size of $d+ = 2.08$ (-0.85 and 5.02) at 3 months of follow-up. Conclusions: Recent studies provide strong support for the use of physiotherapy in the improvement of back care and prevention of non-specific low back pain in children and adolescents. Based on GRADE methodology, we found that the evidence was from very low to moderate quality and interventions involving physical exercise, postural hygiene and physical activity should be preferred.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05270-4>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156111415&custid=ns023446>

15. Efficacy of non-surgical management and functional outcomes of partial ACL tears. A systematic review of randomised trials

Item Type: Journal Article

Authors: Giummarra, Michael;Vocale, Loretta and King, Matthew

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-13

Abstract: Background: The incidence of anterior cruciate ligament (ACL) injuries represents a large burden of knee injuries in both the general and sporting populations, often requiring surgical intervention. Although there is much research on complete ACL tears including outcomes and indications for surgery, little is known about the short- and long-term outcomes of non-operative, physiotherapy led intervention in partial ACL tears. The primary aim of this study was to evaluate studies looking at the effectiveness of physiotherapy led interventions in improving pain and function in young and middle-aged adults with partial ACL tears. Additionally, the secondary aim was to evaluate the completeness of exercise prescription in randomised trials for physiotherapy led interventions in the management in partial ACL tears. Methods: A comprehensive and systematic search was performed on six databases (Medline, CINAHL, EMBASE, PEDro, Scopus, SPORTDiscus and Cochrane). The search strategy consisted of two main concepts: (i) partial ACL tears, and (ii) non-operative management. 7,587 papers were identified by the search. After screening of eligible articles by two independent reviewers, 2 randomised studies were included for analysis. The same two reviewers assessed the completeness of reporting using the Toigio and Boutellier mechanobiological exercise descriptions and Template for Intervention Description and Replication (TIDieR) checklist. Group

mean standard deviations (SD) for the main outcomes was extracted from both papers for analysis. Prospero Registration Number: CRD42020179892. Results: The search strategy identified two studies; one looking at Tai Chi and the other Pilates. The analysis indicated that Tai Chi was significant in reducing pain scores and both Tai Chi and Pilates were found to increase Muscle Peak Torque Strength (MPTS) at 180 degrees. Furthermore, Tai Chi showed a significant increase in proprioception. Conclusions: Physiotherapy led interventions such as Pilates, and Tai Chi may improve pain, proprioception and strength in young and middle-aged adults with partial ACL tears, however full scale, high-quality randomised studies are required with long term outcomes recorded.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05278-w>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156219768&custid=ns023446>

16. Effects of adding aerobic physical activity to strengthening exercise on hip osteoarthritis symptoms: protocol for the PHOENIX randomised controlled trial

Item Type: Journal Article

Authors: Hall, Michelle;Allison, Kim;Hinman, Rana S.;Bennell, Kim L.;Spiers, Libby;Knox, Gabrielle;Plinsinga, Melanie;Klyne, David M.;McManus, Fiona;Lamb, Karen E.;Da Costa, Ricardo;Murphy, Nicholas J. and Dobson, Fiona L.

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-17

Abstract: Background: Hip osteoarthritis (OA) is a leading cause of musculoskeletal pain. Exercise is a core recommended treatment. Most evidence is based on muscle-strengthening exercise, but aerobic physical activity has potential to enhance clinical benefits. The primary aim of this study is to test the hypothesis that adding aerobic physical activity to a muscle strengthening exercise leads to significantly greater reduction in hip pain and improvements in physical function, compared to a lower-limb muscle strengthening exercise program alone at 3 months. Methods: This is a superiority, 2-group, parallel randomised controlled trial including 196 people with symptomatic hip OA from the community. Following baseline assessment, participants are randomly allocated to receive either i) aerobic physical activity and muscle strengthening exercise or; ii) muscle strengthening exercise only. Participants in both groups receive 9 consultations with a physiotherapist over 3 months. Both groups receive a progressive muscle strengthening exercise program in addition to advice about OA management. The aerobic physical activity plan includes a prescription of moderate intensity aerobic physical activity with a goal of attaining 150 min per week. Primary outcomes are self-reported hip pain assessed on an 11-point numeric rating scale (0 = 'no pain' and 10 = 'worst pain possible') and self-reported physical function (Western Ontario and McMaster Universities Osteoarthritis Index physical function subscale) at 3 months. Secondary outcomes include other measures of self-reported pain (assessed at 0, 3, 9 months), self-reported physical function (assessed at 0, 3, 9 months), performance-based physical function (assessed at 0, 3 months), joint stiffness (assessed at 0, 3, 9 months), quality of life (assessed at 0, 3, 9 months), muscle strength (assessed at 0, 3 months), and cardiorespiratory fitness (assessed at 0, 3 months). Other measures include adverse events, co-interventions, and adherence. Measures of body composition, serum inflammatory biomarkers, quantitative sensory measures, anxiety, depression, fear of movement and self-efficacy are included to explore causal mechanisms. Discussion: Findings will assist to provide an evidence-based recommendation regarding the additional effect of aerobic physical activity to lower-limb muscle strengthening on hip OA pain and physical function. Trial Registration: Australian New Zealand Clinical Trials Registry reference: ACTRN 12619001297112. Registered 20th September 2019.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05282-0>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156413161&custid=ns023446>

17. Effects of adding a diet intervention to exercise on hip osteoarthritis pain: protocol for the ECHO randomized controlled trial

Item Type: Journal Article

Authors: Hall, Michelle;Hinman, Rana S.;Knox, Gabrielle;Spiers, Libby;Sumithran, Priya;Murphy, Nicholas J.;McManus, Fiona;Lamb, Karen E.;Cicuttini, Flavia;Hunter, David J.;Messier, Stephen P. and Bennell, Kim L.

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-14

Abstract: Background: Hip osteoarthritis (OA) is a leading cause of musculoskeletal pain. Exercise is a core recommended treatment. Despite some clinical guidelines also recommending weight loss for hip OA, there is no evidence from randomised controlled trials (RCT) to substantiate these recommendations. This superiority, 2-group, parallel RCT will compare a combined diet and exercise program to an exercise only program, over 6 months. Methods: One hundred people with symptomatic and radiographic hip OA will be recruited from the community. Following baseline assessment, participants will be randomly allocated to either, i) diet and exercise or; ii) exercise only. Participants in the diet and exercise group will have six consultations with a dietitian and five consultations with a physiotherapist via videoconferencing over 6 months. The exercise only group will have five consultations with a physiotherapist via videoconferencing over 6 months. The exercise program for both groups will include prescription of strengthening exercise and a physical activity plan, advice about OA management and additional educational resources. The diet intervention includes prescription of a ketogenic very low-calorie diet with meal replacements and educational resources to support weight loss and healthy eating. Primary outcome is self-reported hip pain via an 11-point numeric rating scale (0 = 'no pain' and 10 = 'worst pain possible') at 6 months. Secondary outcomes include self-reported body weight (at 0, 6 and 12 months) and body mass index (at 0, 6 and 12 months), visceral fat (measured using dual energy x-ray absorptiometry at 0 and 6 months), pain, physical function, quality of life (all measured using subscales of the Hip Osteoarthritis Outcome Scale at 0, 6 and 12 months), and change in pain and physical activity (measured using 7-point global rating of change Likert scale at 6 and 12 months). Additional measures include adherence, adverse events and cost-effectiveness. Discussion: This study will determine whether a diet intervention in addition to exercise provides greater hip pain-relief, compared to exercise alone. Findings will assist clinicians in providing evidence-based advice regarding the effect of a dietary intervention on hip OA pain. Trial Registration: ClinicalTrials.gov . Identifier: NCT04825483 . Registered 31st March 2021.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05282-0>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155688490&custid=ns023446>

18. Providing easier access to community-based healthcare for people with joint pain: Experiences of delivering ESCAPE-pain in community venues by exercise professionals

Item Type: Journal Article

Authors: Hurley, Michael;Sheldon, Helen;Connolly, Margaret;Carter, Andrea and Hallett, Rachel

Publication Date: 2022

Journal: Musculoskeletal Care 20(2), pp. 408-415

Abstract: Background: Joint pain adversely impacts the physical, mental, socioeconomic and emotional wellbeing of many millions of people. Enabling Self-management and Coping with Arthritic Pain using Exercise, ESCAPE-pain, is a rehabilitation programme that reduces joint pain and its impact. The programme is usually delivered in clinical settings by physiotherapists but delivering it in community venues would improve access greatly. Aim: To explore the feasibility of delivering ESCAPE-pain in community venues, and the experiences of organisations and facilitators delivering it. Methods: Semi-structured interviews were conducted with managers of 17 community organisations and 10 facilitators. Results: People were happy to attend ESCAPE-pain delivered by exercise professionals at community venues, which they found convenient and valuable. It expanded community organisation's offer to older people, utilised their facilities off-peak and advanced facilitator's personal and professional development. Recruitment onto the programme was easiest where there were good links with local clinical providers. Although collecting outcome data was burdensome it demonstrated the programme's effectiveness to commissioners. Some clinical commissioners contracted community organisations to deliver ESCAPE-pain reducing their costs and freeing up clinical facilities. Organisations also financed ESCAPE-pain by charging participants a nominal fee for the programme, post-programme classes to support participants remain active and/or a membership fee. Conclusions: ESCAPE-pain delivered in community venues facilitated access to better care and on-going support. Partnerships between healthcare commissioners and community providers maximised efficient use of their facilities and resources and fulfilled national policy of encouraging self-management of long-term conditions in the community.

Access or request full text: <https://libkey.io/10.1002/msc.1584>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157398675&custid=ns023446>

19. **Rehabilitation for life: the effect on physical function of rehabilitation and care in older adults after hip fracture-study protocol for a cluster-randomised stepped-wedge trial**

Item Type: Journal Article

Authors: Ipsen, Jonas Ammundsen;Pedersen, Lars T.;Viberg, Bjarke;Nørgaard, Birgitte;Suetta, Charlotte and Bruun, Inge H.

Publication Date: 2022

Journal: Trials 23(1), pp. 1-11

Abstract: Background: A hip fracture is a serious event for older adults, given that approximately 50% do not regain their habitual level of physical function, and the mortality rate is high, as is the number of readmissions. The gap in healthcare delivery, as separated into two financial and self-governing sectors, might be a contributing cause of inferior rehabilitation and care for these patients. Therefore, we aim to assess the effect of continuous and progressive rehabilitation and care across sectors for older adults after hip fracture. Methods/design: The project is designed as a stepped-wedge cluster randomised controlled trial. The study population of patients are older adults 65 years of age and above discharged after a hip fracture and healthcare professionals in primary and secondary care (municipalities and hospitals). Healthcare professionals from different sectors (hospital and municipalities) will be engaged in the empowerment-orientated praxis, through a workshop for healthcare professionals with knowledge sharing to the older adults using a digital health application (app). The rehabilitation intervention consists of 12 weeks of progressive resistance exercises initiated 1-2 days after discharge. To improve communication across sectors, a videoconference involving the patient and physiotherapists from both sectors will be conducted. On day, 3 after discharge, an outreach nurse performs a thorough assessment including measurement of vital signs. A hotline to the hospital for medical advice is a part of the intervention. The intervention is delivered as an add-on to the usual rehabilitation and care, and it involves one regional hospital and the municipalities within the catchment area of the hospital. The primary outcome is a Timed

Up and Go Test 8 weeks post-surgery. Discussion: Using a stepped-wedge design, the intervention will be assessed as well as implemented in hospital and municipalities, hopefully for the benefit of older adults after hip fracture. Furthermore, the collaboration between the sectors is expected to improve. Trial Registration: The study is approved by the Regional Scientific Ethics Committees of Southern Denmark (S-20200070) and the Danish Data Protection Agency (20-21854). Registered 9 of June 2020 at ClinicalTrials.gov, NCT04424186 .

Access or request full text: <https://libkey.io/10.1186/s13063-022-06321-w>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156788395&custid=ns023446>

20. Combined effects of virtual reality techniques and motor imagery on balance, motor function and activities of daily living in patients with Parkinson's disease: a randomized controlled trial

Item Type: Journal Article

Authors: Kashif, Muhammad;Ahmad, Ashfaq;Bandpei, Muhammad Ali Mohseni;Gilani, Syed Amir;Hanif, Asif and Iram, Humaira

Publication Date: 2022

Journal: BMC Geriatrics 22(1), pp. 1-14

Abstract: Background: Parkinson's disease (PD) is the second most prevalent neurodegenerative disorder, impairing balance and motor function. Virtual reality (VR) and motor imagery (MI) are emerging techniques for rehabilitating people with PD. VR and MI combination have not been studied in PD patients. This study was conducted to investigate the combined effects of VR and MI techniques on the balance, motor function, and activities of daily living (ADLs) of patients with PD. Methods: This study was a single-centered, two-armed, parallel-designed randomized controlled trial. A total of 44 patients of either gender who had idiopathic PD were randomly allocated into two groups using lottery methods. Both groups received Physical therapy (PT) treatment, while the experimental group (N: 20) received VR and MI in addition to PT. Both groups received assigned treatment for three days a week on alternate days for 12 weeks. The Unified Parkinson's Disease Rating Scale (UPDRS) (parts II and III), Berg Balance Scale (BBS), and Activities-specific Balance Confidence (ABC) Scale were used as outcome measures for motor function, balance, and ADLs. The baseline, 6th, and 12th weeks of treatment were assessed, with a 16th week follow-up to measure retention. The data was analysed using SPSS 24. Results: The experimental group showed significant improvement in motor function than the control group on the UPDRS part III, with 32.45 ± 3.98 vs. 31.86 ± 4.62 before and 15.05 ± 7.16 vs. 25.52 ± 7.36 at 12-weeks, and a p-value < 0.001. At 12 weeks, the experimental group's BBS scores improved from 38.95 ± 3.23 to 51.36 ± 2.83 , with p-value < 0.001. At 12 weeks, the experimental group's balance confidence improved considerably, from 59.26 ± 5.87 to 81.01 ± 6.14 , with a p-value of < 0.001. The experimental group's ADL scores improved as well, going from 22.00 ± 4.64 to 13.07 ± 4.005 after 12 weeks, with a p-value of < 0.001. Conclusion: VR with MI techniques in addition to routine PT significantly improved motor function, balance, and ADLs in PD patients compared to PT alone. Trial Registration: IRCT20200221046567N1 . Date of registration: 01/04/2020.

Access or request full text: <https://libkey.io/10.1186/s12877-022-03035-1>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156618812&custid=ns023446>

21. Effect of post-isometric relaxation versus myofascial release therapy on pain, functional disability, rom and qol in the management of non-specific neck pain: a randomized controlled trial

Item Type: Journal Article

Authors: Khan, Zainab Khalid;Ahmed, Syed Imran;Baig, Aftab Ahmed Mirza and Farooqui, Waqas Ahmed

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-11

Abstract: Background: Non-specific neck pain is the most prevailing musculoskeletal disorder which has a large socioeconomic burden worldwide. It is associated with poor posture and neck strain which may lead to pain and restricted mobility. Physical therapists treat such patients through several means. Post isometric relaxation and Myofascial release therapy are used in clinical practice with little evidence to be firmed appropriately. So, this study was conducted to explore the effect of Post-isometric relaxation in comparison to Myofascial release therapy for patients having non-specific neck pain. Methodology: Sixty patients were randomly allocated to Post isometric group and the Myofascial group. The treatment period was of 2 weeks. All the patients were evaluated using the Visual analogue scale (VAS), Neck disability index (NDI), Universal Goniometer, and WHO BREF Quality of life-100 in the 1st and 6th sessions. Recorded data was entered on SPSS 21. Data were examined using two-way repeated ANOVA to measure the variance of analysis (group x time). Results: Analysis of the baseline characteristics revealed that both groups were homogenous in terms of age and gender i.e. a total of 60 participants were included in this research study 30 in each group. Out of 60 patients, there were 20(33.3%) males and 40(66.7%) females with a mean age of 32.4(5.0) years. Participants in the Post Isometric group demonstrated significant improvements ($p < 0.025$) in VAS, NDI, Cervical Extension, left side rotation ranges, and QoL (Social Domain) at the 2-week follow-up compared with those in the Myofascial group. In addition, the Myofascial group indicated significantly better improvement in the mean score of CROM (flexion and right and left side bending). Conclusion: The study demonstrated patients with nonspecific neck pain can benefit from the post isometric relaxation with significant improvement in pain, disability, cervical ROM, and Quality of life compared with myofascial release therapy. Trial Registration: Clinical Trial registered on clinicaltrial.gov (NCT number) NCT04638062 , 20/11/2020 (prospectively registered).

Access or request full text: <https://libkey.io/10.1186/s12891-022-05516-1>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157410357&custid=ns023446>

22. Patients' and clinicians' experiences with stratified exercise therapy in knee osteoarthritis: a qualitative study

Item Type: Journal Article

Authors: Knoop, J.;de Joode, J. W.;Brandt, H.;Dekker, J. and Ostelo, R. W. J. G.

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-14

Abstract: Background: We have developed a model of stratified exercise therapy that distinguishes three knee osteoarthritis (OA) subgroups ('high muscle strength subgroup', 'low muscle strength subgroup', 'obesity subgroup'), which are provided subgroup-specific exercise therapy (supplemented by a dietary intervention for the 'obesity subgroup'). In a large clinical trial, this intervention was found to be no more effective than usual exercise therapy. The present qualitative study aimed to explore experiences from users of this intervention, in order to identify possible improvements. Methods: Qualitative research design embedded within a cluster randomized controlled trial in a primary care setting. A random sample from the experimental arm (i.e., 15 patients, 11 physiotherapists and 5 dieticians) was interviewed on their experiences with receiving or applying the intervention. Qualitative data from these semi-structured

interviews were thematically analysed. Results: We identified four themes: one theme regarding the positive experiences with the intervention and three themes regarding perceived barriers. Although users from all 3 perspectives (patients, physiotherapists and dieticians) generally perceived the intervention as having added value, we also identified several barriers, especially for the 'obesity subgroup'. In this 'obesity subgroup', physiotherapists perceived obesity as difficult to address, dieticians reported that more consultations are needed to reach sustainable weight loss and both physiotherapists and dieticians reported a lack of interprofessional collaboration. In the 'high muscle strength subgroup', the low number of supervised sessions was perceived as a barrier by some patients and physiotherapists, but as a facilitator by others. A final theme addressed barriers to knee OA treatment in general, with lack of motivation as the most prominent of these. Conclusion: Our qualitative study revealed a number of barriers to effective application of the stratified exercise therapy, especially for the 'obesity subgroup'. Based on these barriers, the intervention and its implementation could possibly be improved. Moreover, these barriers are likely to account at least partly for the lack of superiority over usual exercise therapy. Trial Registration: The Netherlands National Trial Register (NTR): NL7463 (date of registration: 8 January 2019).

Access or request full text: <https://libkey.io/10.1186/s12891-022-05496-2>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157410347&custid=ns023446>

23. Comparative effect of walking meditation and rubber-band exercise on ankle proprioception and balance performance among persons with chronic ankle instability: A randomized controlled trial

Item Type: Journal Article

Authors: Lapanantasin, Saitida;Thongloy, Natee;Samsee, Manatsawee;Wonghirunsombat, Natchapol;Nuangpulsarp, Norasate;Ua-areejit, Chudmanee and Phattaraphanasakul, Phatchayanun

Publication Date: 2022

Journal: Complementary Therapies in Medicine 65, pp. N.PAG

Abstract: Background: Ankle proprioception and balance impairments are usual consequences of chronic ankle instability (CAI). The impairments affect functional and sport activities and can lead to recurrent ankle sprain. Mind-body practice is claimed to improve ankle proprioception and balance. Objective: To investigate the effects of walking meditation, a mind-body practice, and compare it with the rubber-band exercise on ankle proprioception and balance among individuals with CAI. Study Design: A randomized controlled trial. Methods: Thirty-two participants with CAI aged 20.3 ± 1.8 years were randomized into three groups; 1) walking meditation (WM, $n = 10$), 2) Rubber-band exercise (RE, $n = 11$) and 3) control ($n = 11$). WM and RE were enrolled on a 4-week training regimen (30 min/day, 3 days/week). Before and after the training, ankle proprioception was evaluated by angular error of the ankle reposition test (AEA) at three positions, randomly, i.e., plantarflexion-5°, plantarflexion-10° and dorsiflexion-5°. Balance performance was assessed by the star excursion balance test (SEBT). Results: As adjusted by pre-training baseline, no significant difference in AEA and SEBT was found among three groups. However, after training, only the WM group revealed a significant decrease in AEA at plantarflexion-5° ($p = 0.007$) and plantarflexion-10° ($p = 0.04$) compared to the baseline. For SEBT, the WM and RE groups showed significant improvements compared to the baseline in 4 directions each ($p < 0.05$), while the control group improved only 2 directions ($p < 0.05$). Conclusions: WM and RE groups significantly improved SEBT after 4-week training when compared to before training. Additionally, WM group also improved ankle proprioception. Therefore, WM demonstrates feasibility as a promising intervention that could be applied for balance and ankle proprioceptive rehabilitations in persons with CAI.

Access or request full text: <https://libkey.io/10.1016/j.ctim.2022.102807>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155258449&custid=ns023446>

d=ns023446

24. The Effects of Er Xian Decoction Combined with Baduanjin Exercise on Bone Mineral Density, Lower Limb Balance Function, and Mental Health in Women with Postmenopausal Osteoporosis: A Randomized Controlled Trial

Item Type: Journal Article

Authors: Li, Keqiang;Yu, Hongli;Lin, Xiaojun;Su, Yuying;Gao, Lifeng;Song, Minjia;Fan, Hongying;Krokosz, Daniel;Yang, Huixin and Lipowski, Mariusz

Publication Date: 2022

Journal: Evidence-Based Complementary & Alternative Medicine (eCAM) , pp. 1-13

Abstract: Background. Postmenopausal osteoporosis (PMOP) is a common disease in older women that can severely jeopardize their health. Previous studies have demonstrated the effect of Er xian decoction (EXD) or Baduanjin exercise (BE) on PMOP. However, reports on the effect of EXD combined with BE on PMOP are limited. This study aimed to investigate the impact of EXD combined with BE on bone mineral density (BMD), lower limb balance, and mental health in women with PMOP. Methods. A 1 : 1 : 1 simple randomization technique was employed. Fifty participants with postmenopausal osteoporosis were allocated to three groups: the EXD group (EXD = 15); the BE group (BE = 18); and the combined group (EXD + BE = 17). After both 8 weeks and 16 weeks of intervention treatment, participants improved significantly with respect to BMD and the one-leg standing test (OLST), Berg balance scale (BBS), timed up and go (TUG) test, self-anxiety scale (SAS), and self-rating depression scale (SDS). The results were used to compare the effect of the intervention on BMD, lower limb balance function, and mental health in patients with PMOP. Results. Compared to the EXD and BE groups, the EXD + BE group showed the strongest effects on BMD, lower limb balance function, and mental health ($p < 0.01$). A correlation between BMD and lower limb balance and mental health was noted in the EXD + BE group. The change in mental health (SAS score) was correlated with BMD (femoral neck) improvement. Conclusions. The present study demonstrates that EXD combined with BE (EXD + BE) may have a therapeutic advantage over both monotherapies for treating BMD, lower limb balance function, and mental health in patients with PMOP. The feasibility of the approach for a large-scale RCT was also confirmed. Er xian decoction combined with Baduanjin exercise (EXD + BE) might offer a viable treatment alternative for participants with postmenopausal osteoporosis given its promising effects in disease control and treatment, with good efficacy and safety profiles.

Access or request full text: <https://libkey.io/10.1155/2022/8602753>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157741664&custid=ns023446>

25. Efficacy of leg swing versus quadriceps strengthening exercise among patients with knee osteoarthritis: study protocol for a randomized controlled trial

Item Type: Journal Article

Authors: Li, Ruiyang;Sun, Pingping;Zhan, Yu;Xie, Xuetao;Yan, Weibing and Luo, Congfeng

Publication Date: 2022

Journal: Trials 23(1), pp. 1-11

Abstract: Background: Knee osteoarthritis (OA) is a leading cause of global disability. According to current guidelines, exercise is the most recommended and important non-surgical treatment for knee OA. However,

the best type of exercise for this condition remains unclear. Evidence has shown that traditional Chinese exercises may be more effective. Therefore, the current prospective, two-armed, single-center randomized controlled trial (RCT) aimed to identify an effective physiotherapy for knee OA. Methods/design: In total, 114 patients with painful knee OA will be recruited from the orthopedic outpatient department of Shanghai Jiao Tong University Affiliated Sixth People's Hospital. To compare the therapeutic effect of two different home-based exercise programs, the participants will be randomly assigned into the experimental group (leg swing exercise) or the control group (quadriceps strengthening exercise). Each participant in both groups will be required to attend five individual sessions with a physiotherapist who will teach the exercise program and monitor progress. Participants will be instructed to perform the exercises at home every day for 12 weeks. Clinical outcomes will be assessed at baseline and 12 and 24 weeks after starting the intervention. The primary outcomes are average overall knee pain and physical function in daily life. The secondary outcomes include other measures of knee pain, physical function, patient-perceived satisfactory improvement, health-related quality of life, physical activity and performance, muscle strength of the lower limb, and adherence. Discussion: This study will provide more evidence on the effects of traditional Chinese exercise on improving physical function and relieving joint pain among patients with knee OA. If proven effective, leg swing exercise can be used as a non-surgical treatment for knee OA in the future. Trial Registration: Chinese Clinical Trial Registry ChiCTR2000039005 . Registered on 13 October 2020.

Access or request full text: <https://libkey.io/10.1186/s13063-022-06282-0>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156444579&custid=ns023446>

26. **Effect of proprioceptive neuromuscular facilitation technique on the treatment of frozen shoulder: a pilot randomized controlled trial**

Item Type: Journal Article

Authors: Lin, Ping;Yang, Moudan;Huang, Deqing;Lin, Huan;Wang, Jialin;Zhong, Chaoping and Guan, Li

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-10

Abstract: Background and Objectives: Frozen shoulder is a common painful disease of the shoulder joint characterized by structural changes in the shoulder joint, restricting both active and passive shoulder joint activities. Proprioceptive neuromuscular facilitation (PNF) effectively improved and maintained the range of motion; however, it is not clear whether it can improve the shoulder joint structure in patients with frozen shoulder. This pilot study used magnetic resonance imaging (MRI) observation to assess the improvement of the local structure of the shoulder joint upon PNF treatment to elucidate a target based on structure for the treatment of frozen shoulder. Materials and Methods: Forty-eight patients with frozen shoulder were randomly divided into the traditional manual therapy group and the PNF technique group. Changes in the thicknesses of the coracohumeral ligament (CHL) and capsule in axillary recess (CAR) of the shoulder joint were observed via MRI upon admission and at 4 weeks after treatment. A visual analog scale (VAS) and passive shoulder range of motion (ROM) at abduction, anteflexion and external rotation position were used to evaluate the improvement of shoulder joint pain and function in the initial, mid-term, and discharge of the two groups of patients. Results: The primary outcome results shown that the PNF joint mobilization significantly reduced the thickness of the CHL ($p = 0.0217$) and CAR ($p = 0.0133$). Compared with simple joint mobilization, The mid-term and discharge rehabilitation assessment results showed that PNF has a better effect on shoulder pain. At the mid-term evaluation, the ROM of the PNF group was significantly better than that of the Control group in the three directions ($p < 0.05$). Conclusion: As an adjunctive therapy, PNF can improve the shoulder joint structure of patients with frozen shoulder and is an effective treatment strategy for frozen shoulder.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05327-4>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156444372&custid=ns023446>

27. Randomized controlled trial of all-inside and standard single-bundle anterior cruciate ligament reconstruction with functional, MRI-based graft maturity and patient-reported outcome measures

Item Type: Journal Article

Authors: Lin, Rubing;Zhong, Qiuwen;Wu, Xiao;Cui, Lei;Huang, Rong;Deng, Qianhua;Zuo, Jianwei;Jiang, Changqing and Li, Wei

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-10

Abstract: Background: All-inside anterior cruciate ligament reconstruction (ACLR) is a novel technique that has gained attention due to its minimally invasive and graft-saving properties. However, studies comparing MRI-based graft maturity between all-inside and standard ACLR are lacking. Purpose: This study focused on the functional, knee laxity, and MRI-based graft maturity characteristics of all-inside and standard single-bundle ACLR. Study Design: Randomized controlled trial (RCT). Methods: Fifty-four patients were randomly assigned to an all-inside reconstruction group (n = 27) or standard reconstruction group (n = 27). Using the same rehabilitation strategy. The Tegner, International Knee Documentation Committee, and Lysholm scores were recorded at postoperative months 3, 6, and 12 to assess functional recovery. MRI was conducted to measure the signal/noise quotient (SNQ) of the intra-articular graft to assess the maturity. A higher SNQ indicates lower graft maturity. Knee laxity was assessed using GNRB arthrometer at the postoperative month 12. Results: The graft SNQ of the all-inside group was significantly higher than that of the standard group at postoperative month 6 (p 0.05). Both groups exhibited the highest SNQ in the middle region of the graft, followed by the proximal region, and the distal region. Functional scores improved significantly for both groups and had no statistical difference (p > 0.05). The knee laxity was higher in the all-inside group (p 0.05). Conclusions: All-inside and standard single-bundle ACLR show good functional outcomes; however, knee laxity was relatively higher in the all-inside ACLR group than in the standard ACLR group. Moreover, both techniques exhibited poor maturity in the middle graft region and the best in the distal region. Graft maturity with all-inside ACLR is inferior to that with standard ACLR in the early postoperative stages. There is no correlation between knee function and graft maturity. Trial Registration: Clinical trial registration numbers: ChiCTR1800018543 . Date of registration: 09/23/2018.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05231-x>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155953659&custid=ns023446>

28. Comprehensive Rehabilitation Therapy Plus Glucosamine Hydrochloride for Exercise-Induced Knee Injuries and the Effect on Knee Function of Patients

Item Type: Journal Article

Authors: Liu, Na and Wang, Binggang

Publication Date: 2022

Journal: Evidence-Based Complementary & Alternative Medicine (eCAM) , pp. 1-7

Abstract: Objective. To assess the application value of comprehensive rehabilitation therapy plus

glucosamine hydrochloride for exercise-induced knee injuries and its effect on knee function. **Methods.** A total of 96 patients with an exercise-induced knee injury who were admitted to our hospital from February 2019 to February 2022 were recruited and assigned at a ratio of 1 : 1 with matched general information to a control group (n = 45) or an experimental group (n = 51). Both groups of patients received comprehensive rehabilitation therapy, and the patients in the experimental group were daily given additional glucosamine hydrochloride tablets for 8 weeks. **Results.** The experimental group showed a higher treatment efficacy than the control group ($P < 0.001$). After the treatment, the VAS scores and C-reactive protein of the two groups showed a decline, with a lower result in the experimental group than in the control group ($P < 0.001$). The Lysholm knee scores were increased in the two groups after the treatment, and the experimental group had a higher score ($P < 0.001$). After the treatment, patients of both groups showed reduced five-times-sit-to-stand-test (FTSST) results, with a better outcome obtained in the experimental group ($P < 0.001$). **Conclusion.** Comprehensive rehabilitation therapy plus glucosamine hydrochloride effectively improves the clinical efficacy of exercise-induced knee joint injuries and enhances the knee joint rehabilitation of the patients.

Access or request full text: <https://libkey.io/10.1155/2022/8120458>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157683676&custid=ns023446>

29. Evaluating the impact of a training program to support transitioning from the hospital to the community for people after stroke: a community case study

Item Type: Journal Article

Authors: Lui, Michelle; McKellar, Katherine; Cooper, Shari; Eng, Janice J. and Bird, Marie-Louise

Publication Date: 2022

Journal: BMC Health Services Research 22(1), pp. 1-10

Abstract: Background: The transitions in care along the stroke recovery path are challenging, particularly in finding mechanisms to continue one's recovery once at home. We aim to evaluate the impact of training physiotherapists and fitness instructors from one regional community together to deliver an evidence-based group exercise program starting in the hospital and transitioning to the community using an implementation approach. **Methods:** The evidenced based exercise program Fitness and Mobility Exercise (FAME) for stroke was chosen as the intervention. Data from interviews with stakeholders (community centre and health authority hospital staff including a physiotherapy navigator) was transcribed and themes evaluated using the RE-AIM (Reach, Efficacy, Adoption, Implementation, Maintenance) framework. These data were supplemented by information collected as a quality assurance project within the health authority. **Results:** Two programs were established; one in the community centre (run over 15 months by fitness instructors) and one in the regional hospital (run over 12 months by a rehabilitation assistant under the direction from a physiotherapist). Transitions in care were facilitated by implementing the same evidence-based group exercise class in both the hospital and community setting, so people living with stroke could seamlessly move from one to another. An existing physiotherapist navigator service also was valued as a support for the transitions between the two centres for people with stroke. The hospital group accessed group-based physiotherapy service on average 31 days earlier than they were able to in a one-to-one format. **Conclusions:** This case study described the implementation of the Fitness and Mobility Exercise (FAME) program in one community and the use of a physiotherapist navigator to assist transition between them. After a community training workshop, FAME programs were established within the health authority and the community centre. FAME program participants within the health authority benefited from reduced wait times to access hospital outpatient physiotherapy service. Improvements in function were measured in and reported by the people after stroke attending either the health authority or community centre FAME groups.

Access or request full text: <https://libkey.io/10.1186/s12913-021-07436-7>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=154501024&custid=ns023446>

30. Overall treatment effects of aquatic physical therapy in knee osteoarthritis: a systematic review and meta-analysis

Item Type: Journal Article

Authors: Ma, Ji;Chen, Xiaoyu;Xin, Juan;Niu, Xin;Liu, Zhifang and Zhao, Qian

Publication Date: 2022

Journal: Journal of Orthopaedic Surgery & Research 17(1), pp. 1-15

Abstract: Objective: To determine the benefits of aquatic physical therapy as a rehabilitation strategy for knee osteoarthritis patients. Methods: Electronic databases systematically searched up to July 2021. Results: 580 RCTs were selected. A total of thirteen studies comprising 883 participants were included in the study. For pain, meta-analyses showed that aquatic physical therapy is associated with a significant change in Western Ontario and McMaster University Osteoarthritis Index (WOMAC) pain (SMD = - 1.09, 95%CI - 1.97, - 0.21, p = 0.02) and visual analog scale (VAS) (SMD = - 0.55, 95%CI - 0.98, - 0.12, p = 0.01). In addition, for physical function, meta-analyses showed that aquatic physical therapy effectively improved WOMAC physical function (SMD = - 0.57, 95%CI - 1.14, - 0.01, p = 0.05). However, our findings showed no significant improvements in symptoms of joints, quality of life (QOL), flexibility, and body composition with knee osteoarthritis. For muscle strength, we found that aquatic physical therapy can only improve knee extension muscle strength (MD = 2.11, 95%CI 0.02, 4.20, p = 0.05). Additionally, for walking ability, we observed that aquatic physical therapy effectively reduced Timed-Up-and-Go Test (TUGT) in a large degree (MD = - 0.89, 95%CI - 1.25, - 0.53, p < 0.05). Conclusions: According to the findings reported in the studies analyzed in the review, aquatic physical therapy had a positive effect on the pain, physical function, knee extension muscle strength, and walking ability among people with knee osteoarthritis.

Access or request full text: <https://libkey.io/10.1186/s13018-022-03069-6>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156274005&custid=ns023446>

31. The effectiveness of a randomised clinical trial of PLE2NO self-management and exercise programme for knee osteoarthritis to improve self-efficacy

Item Type: Journal Article

Authors: Marconcin, Priscila;Yázigi, Flávia;Teles, Júlia;Campos, Pedro and Espanha, Margarida

Publication Date: 2022

Journal: Musculoskeletal Care 20(1), pp. 137-144

Abstract: Objective: This study aims to assess the effectiveness of a 12-weeks self-management and exercise intervention to improve self-efficacy in older individuals with knee osteoarthritis (KOA) Design: Randomised Controlled Trial. Setting: Four different community settings. Subjects: Eighty individuals aged 60 years or over with clinical and radiographic knee osteoarthritis. Intervention: The subjects were randomly assigned to (1) a combined self-management and exercise programme (treatment group) and (2) an educational programme (control group). Main Measures: The primary outcome was self-efficacy and

secondary outcomes were physical activity, health-related quality of life and skill-related physical fitness measures. Results: Sixty-seven participants, mean age 69.1 (5.8) years, completed the study: 32 in the control group and 35 in the treatment group. A significant group effect favourable to the treatment group was observed in the following variables: self-efficacy ($F(2,64) = 9.2, p = 0.003$), physical activity ($F(2,64) = 43.6, p < 0.001$) and balance for most painful knee ($F(2,64) = 4.87, p = 0.031$) and less painful knee ($F(2,64) = 6.94, p = 0.010$). No improvements regarding health-related quality of life, gait speed and agility were found. This study supports the importance of a combined self-management and exercise intervention to improve self-efficacy and physical activity in KOA individuals.

Access or request full text: <https://libkey.io/10.1002/msc.1573>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155730481&custid=ns023446>

32. The use of wearable technology as an assessment tool to identify between-limb differences during functional tasks following ACL reconstruction. A scoping review

Item Type: Journal Article

Authors: Marques, Joao B.;Auliffe, Sean Mc;Thomson, Athol;Sideris, Vasileios;Santiago, Paulo and Read, Paul J.

Publication Date: 2022

Journal: Physical Therapy in Sport 55, pp. 1-11

Abstract: To report how wearable sensors have been used to identify between-limb deficits during functional tasks following ACL reconstruction and critically examine the methods used. We performed a scoping review of studies including participants with ACL reconstruction as the primary surgical procedure, who were assessed using wearable sensors during functional movement tasks (e.g., balance, walking or running, jumping and landing) at all postsurgical time frames. Eleven studies met the inclusion criteria. The majority examined jumping-landing tasks and reported kinematic and kinetic differences between limbs (involved vs. uninvolved) and groups (injured vs. controls). Excellent reliability and moderate-strong agreement with laboratory protocols was indicated, with IMU sensors providing an accurate estimation of kinetics, but the number of studies and range of tasks used were limited. Methodological differences were present including, sensor placement, sampling rate, time post-surgery and type of assessment which appear to affect the outcome. Wearable sensors consistently identified between-limb and group deficits following ACL reconstruction. Preliminary evidence suggests these technologies could be used to monitor knee function during rehabilitation, but further research is needed including, validation against criterion measures. Practitioners should also consider how the methods used can affect the accuracy of the outcome. • Following ACL reconstruction, alterations in biomechanics are common. • Wearable sensors are now being used identify biomechanical differences between limbs and injury status. • Wearable technology can be used to objectively measure field-based assessment of knee function. • Key methodological considerations are presented to ensure accurate measurement.

Access or request full text: <https://libkey.io/10.1016/j.ptsp.2022.01.004>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157445002&custid=ns023446>

33. Effectiveness of self-efficacy-enhancing interventions on rehabilitation following total hip replacement: a randomized controlled trial with six-month follow-up

Item Type: Journal Article

Authors: Meng, Ya;Deng, Bo;Liang, Xiaoyu;Li, Jiangzhen;Li, Liuyi;Ou, Jinxia;Yu, Shuping;Tan, Xingxian;Chen, Yumei and Zhang, Meifen

Publication Date: 2022

Journal: Journal of Orthopaedic Surgery & Research 17(1), pp. 1-11

Abstract: Background: As the world's population ages, hip replacement, a routine treatment for arthritis, has become more common. However, after surgery, rehabilitation has some limited effectiveness with postoperative complications and persistent impairments. This study aimed to explore the effect of a self-efficacy-enhancing intervention program following hip replacement on patients' rehabilitation outcomes (self-efficacy, functional exercise compliance, hip function, activity and social participation, anxiety and depression, and quality of life). Methods: A prospective randomized controlled trial with a repeated-measures, two-group design was conducted in a grade A general hospital in Guangdong Province, China. A total of 150 participants with a unilateral total hip replacement were recruited via convenience sampling. Participants were randomly assigned to either the self-efficacy enhancing intervention group (n = 76) or the control group (n = 74). The intervention encompassed a face-to-face education before discharge and four telephone-based follow-ups in six months after surgery. Researchers collected baseline data on one to three days after surgery, and outcomes data were collected one, three, and six months after surgery. Results: Average age (deviation) in intervention and control group were 58 (10.32) and 59 (10.82), respectively. After six months, intervention group scored 86.83 ± 5.89 in rehabilitation self-efficacy, significantly higher than control group (72.16 ± 6.52 , $t = -10.820$, $p < 0.001$) and their hip function has turned to "excellent" (90.52 ± 4.03), while that of the latter was limited to a "middle" level (78.47 ± 7.57). Statistically significant differences were found in secondary outcomes ($p < 0.001$). The advantage of intervention in improving quality of life was seen in the long term rather than in the early postoperative period. Conclusions: The self-efficacy-enhancing intervention performed by nurses induced better exercise compliance and physical, psychological, and social functions after hip replacement compared with routine care. We recommend such interventions to be combined with routine care soon after hip replacement. Further research should focus on the social participation of patients with hip replacement. Trial registration Retrospectively registered at Chinese Clinical Trial Registry (31/01/2020, No. ChiCTR2000029422, <http://www.chictr.org.cn/index.aspx>).

Access or request full text: <https://libkey.io/10.1186/s13018-022-03116-2>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156220102&custid=ns023446>

34. The Effects of Occupation-Based Community Rehabilitation for Improving Activities of Daily Living and Health-Related Quality of Life of People with Disabilities after Stroke Living at Home: A Single Subject Design

Item Type: Journal Article

Authors: Moon, KwangTae;Jang, WanHo;Park, Hae Yean;Jung, MinYe and Kim, JongBae

Publication Date: 2022

Journal: Occupational Therapy International , pp. 1-10

Abstract: Objective. The aim of this study is to investigate the effect of occupation-based community rehabilitation on activity daily of living and health-related quality of life of people with disabilities after stroke at home. Method. In this study of three people with disabilities after stroke living at home, A-B-A single-subject design was used. The occupation-based community rehabilitation was implemented during the intervention phase. It included task oriented and feedback, related information education, home

environment modification, and community resource network. After applying the intervention, changes in activities of daily living and health-related quality of life were evaluated by the Modified Barthel Index (MBI), the EuroQol-5 dimension (EQ-5D), and the Assessment of Motor and Process Skills (AMPS). Result. After applying the occupation-based community rehabilitation program, all three participants' daily life activities and quality of life improved. In addition, the occupational performance skills in all participants were maintained. Conclusion. It was confirmed that individual occupational-based community rehabilitation had a positive effect on the activities of daily living and quality of life improvement of the people with disabilities after stroke at home.

Access or request full text: <https://libkey.io/10.1155/2022/6657620>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155998248&custid=ns023446>

35. **Experiences of recovery and a new care pathway for people with pain after total knee replacement: qualitative research embedded in the STAR trial**

Item Type: Journal Article

Authors: Moore, Andrew;Wylde, Vikki;Bruce, Julie;Howells, Nicholas;Bertram, Wendy;Eccleston, Christopher and Gooberman-Hill, Rachael

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-11

Abstract: Background: Approximately 20% of people experience chronic postsurgical pain after total knee replacement. The STAR randomised controlled trial (ISCRTN92545361) evaluated the clinical- and cost-effectiveness of a new multifaceted and personalised care pathway, compared with usual care, for people with pain at three months after total knee replacement. We report trial participants' experiences of postoperative pain and the acceptability of the STAR care pathway, which consisted of an assessment clinic at three months, and up to six follow-up telephone calls over 12 months. Methods: Semi-structured interviews were conducted with 27 people (10 men, 17 women) between February 2018 and January 2020. Participants were sampled purposively from the care pathway intervention group and interviewed after completion of the final postoperative trial questionnaire at approximately 15 months after knee replacement. Interviews were audio-recorded, transcribed, anonymised and analysed using inductive thematic analysis. Findings: Many participants were unprepared for the severity and impact of postoperative pain, which they described as extreme and constant and that tested their physical and mental endurance. Participants identified 'low points' during their recovery, triggered by stiffening, pain or swelling that caused feelings of anxiety, depression, and pain catastrophising. Participants described the STAR assessment clinic as something that seemed "perfectly normal" suggesting it was seamlessly integrated into NHS care. Even in the context of some ongoing pain, the STAR care pathway had provided a source of support and an opportunity to discuss concerns about their ongoing recovery. Conclusions: People who have knee replacement may be unprepared for the severity and impact of postoperative pain, and the hard work of recovery afterwards. This highlights the challenges of preparing patients for total knee replacement and suggests that clinical attention is needed if exercise and mobilising is painful beyond the three month postoperative period. The STAR care pathway is acceptable to people with pain after total knee replacement.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05423-5>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156889892&custid=ns023446>

36. **The impact of first wave of COVID-19 on the nursing-sensitive and rehabilitation outcomes of patients undergoing hip fracture surgery: a single centre retrospective cohort study**

Item Type: Journal Article

Authors: Morri, M.;Ambrosi, E.;Raffa, D.;Raimondi, R.;Evangelista, A.;Mingazzini, A. and Forni, C.

Publication Date: 2022

Journal: BMC Nursing 21(1), pp. 1-9

Abstract: Background: During the COVID-19 pandemic, the care of hip fracture patients remains a clinical priority. To date, there is limited empirical knowledge about the impact of pandemic on the care of patients surgically treated for hip fracture, affected or not by COVID-19. Objective: To investigate the effects of the COVID-19 pandemic on the nursing-sensitive and rehabilitation outcomes of frail patients undergoing hip fracture surgery. Methods: A retrospective cohort study was conducted in an Italian Orthopaedic Research Institute. All patients aged ≥ 65 years admitted with fragility hip fractures between 1st March and 30th June in 2019 (group PP: pre-pandemic) and in the same period in 2020 (group P: pandemic), were compared. In the P group, COVID-19 positive patients were excluded due to the presence of a specific treatment pathway. Data on patient demographics and baseline characteristics, and peri-operative care factors were obtained from the Institute's computer-based patient-record system. The primary outcome was the incidence of any stage hospital-acquired pressure ulcers (PUs). The secondary outcome was time to first static verticalization and to first ambulation. Results: Three-hundred and sixty patients were included in the study, which comprised 108 patients in PP group and 252 patients in P group. Overall PUs incidence was significantly higher in the P-group (21.8%) than in the PP-group (10.2%) ($p = 0.009$). Specifically, the incidence of sacral PUs was significantly lower in P-group (38.1%) vs PP-group (91%) ($p = 0.004$); on the contrary, the incidence of PUs localized to the heels or other body sites were significantly higher in P-group (30.9% and 30.9%, respectively) vs PP-group (0% and 9%, respectively) ($p = 0.004$). No significant between groups differences were found for all the secondary outcomes. Conclusion: In the pandemic period, nursing and rehabilitation care provided to patients with fragility hip fracture maintained high standards comparable to the pre-pandemic period. The increase in PUs incidence in the pandemic period was probably due to the older age of the patients admitted to hospital. The qualitative evaluation of the care administered and the emotional impact of the pandemic on the patients are very interesting topic which would deserve further investigation.

Access or request full text: <https://libkey.io/10.1186/s12912-022-00848-8>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155953678&custid=ns023446>

37. **Comparison of the open kinetic chain and closed kinetic chain strengthening exercises on pain perception and lower limb biomechanics of patients with mild knee osteoarthritis: a randomized controlled trial protocol**

Item Type: Journal Article

Authors: Ng, Wei Hui;Jamaludin, Nazatul Izzati;Sahabuddin, Farhah Nadhirah Aiman;Ab Rahman, Shaifuzain;Ahmed Shokri, Amran and Shaharudin, Shazlin

Publication Date: 2022

Journal: Trials 23(1), pp. 1-11

Abstract: Background: Clinical recommendations suggest exercises as the main treatment modality for patients with knee osteoarthritis (OA). This study aimed to compare the effects of two different exercise

interventions, i.e., open kinetic chain (OKC) and closed kinetic chain (CKC) exercises, on the pain and lower limb biomechanics of patients with mild knee OA. Method: A total of 66 individuals with painful early knee OA, aged 50 years and above, with body mass index (BMI) between 18.9kg/m² and 29.9 kg/m² in Kelantan, Malaysia, will be recruited in this study. Participants will be randomly allocated into three different groups, either the OKC, CKC, or control groups. All three groups will attend an individual session with a physiotherapist. The participants in the OKC and CKC groups will perform the exercises three times weekly for 8 weeks at their home. The control group will receive education about clinical manifestations, risk factors, diagnosis, treatment, and nursing care for knee via printed materials. The primary outcomes include self-reported pain scores (visual analog scale), disability scores (Western Ontario and McMaster Universities Arthritis Index), and quality of life scores (Osteoarthritis Knee and Hip Quality of Life). Secondary outcomes include lower limb biomechanics during gait and sit-to-stand as well as isokinetic knee strength. The outcomes will be measured before and after the intervention. Discussion: The present study will compare the effects of two different home-based exercise intervention programs among patients with mild knee OA. The study findings will provide vital information that can be used to design an effective exercise program that aims at delaying the OA progression. Trial Registration: The protocol was registered on 22 December 2020 at ClinicalTrials.gov (registration number: NCT04678609).

Access or request full text: <https://libkey.io/10.1186/s13063-022-06153-8>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156375427&custid=ns023446>

38. Content and Effectiveness of Community-Based Rehabilitation on Quality of Life in People Post Stroke: a Systematic Review with Meta-Analysis

Item Type: Journal Article

Authors: Noukpo, Sènadé Inès;Kossi, Oyéné;Tedesco Triccas, Lisa;Adoukonou, Thierry and Feys, Peter

Publication Date: 2022

Journal: Disability, CBR & Inclusive Development 33(2), pp. 75-107

Abstract: Purpose: The study aimed to review the content and evaluate the effects of CBR on quality of life (QoL), balance, and walking capacity for people post stroke, compared to other rehabilitation protocols or no care. Methods: A systematic search and meta-analysis of clinical trials of CBR interventions for stroke survivors was conducted. Five online electronic databases (MEDLINE/PubMed, Web of sciences, Scopus, Hinari, and Pedro) were searched for articles published in English and French languages, from inception up to December 2021. Sixteen studies were included that reported on QoL outcomes from CBR interventions involving 1755 adults post stroke. Results: The different CBR interventions that were selected were grouped into three clusters: a) exercise programmes, b) task-oriented training, and c) educational and taking-charge programmes. CBR interventions were more effective than other rehabilitation protocols (SMD=0.160.02, 0.30], P=0.03, I² =40%) on QoL for people with chronic stroke. The effects of interventions on walking capacity and balance demonstrated non-significant difference (SMD=0.31-0.02, 0.64], P=0.06, I² =88%, and SMD= 0.20-0.12, 0.53], P=0.22, I² =68%, respectively). Conclusion: Current data indicates that CBR can be used in many forms or in combinations to benefit people with chronic stroke. Also, CBR is as effective as other rehabilitative protocols or no care on walking capacity and balance, while being more while being more effective than institution-based rehabilitation or no care effective than institution-based rehabilitation or no care, in improving quality of life which is a well-recognised goal in the rehabilitation of people with chronic stroke.

Access or request full text: <https://libkey.io/10.47985/dcidj.571>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=158676048&custid=ns023446>

d=ns023446

39. The sit-to-stand test as a patient-centered functional outcome for critical care research: a pooled analysis of five international rehabilitation studies

Item Type: Journal Article

Authors: O'Grady, Heather K.;Edbrooke, Lara;Farley, Christopher;Berney, Sue;Denehy, Linda;Puthucheary, Zudin;Kho, Michelle E.;the International METRIC Critical Care, Data Group;Ball, Ian;Burns, Karen;Clarke, France;Cook, Deborah;Costigan, Aileen;Fox-Robichaud, Alison;Gordon, Ian;Haines, Kimberley;Herridge, Margaret;Karachi, Tim;Lo, Vincent and MacDonell, Alexandra

Publication Date: 2022

Journal: Critical Care 26(1), pp. 1-11

Abstract: Background: With ICU mortality rates decreasing, it is increasingly important to identify interventions to minimize functional impairments and improve outcomes for survivors. Simultaneously, we must identify robust patient-centered functional outcomes for our trials. Our objective was to investigate the clinimetric properties of a progression of three outcome measures, from strength to function. Methods: Adults (≥ 18 years) enrolled in five international ICU rehabilitation studies. Participants required ICU admission were mechanically ventilated and previously independent. Outcomes included two components of the Physical Function in ICU Test-scored (PFIT-s): knee extensor strength and assistance required to move from sit to stand (STS); the 30-s STS (30 s STS) test was the third outcome. We analyzed survivors at ICU and hospital discharge. We report participant demographics, baseline characteristics, and outcome data using descriptive statistics. Floor effects represented $\geq 15\%$ of participants with minimum score and ceiling effects $\geq 15\%$ with maximum score. We calculated the overall group difference score (hospital discharge score minus ICU discharge) for participants with paired assessments. Results: Of 451 participants, most were male ($n = 278$, 61.6%) with a median age between 60 and 66 years, a mean APACHE II score between 19 and 24, a median duration of mechanical ventilation between 4 and 8 days, ICU length of stay (LOS) between 7 and 11 days, and hospital LOS between 22 and 31 days. For knee extension, we observed a ceiling effect in 48.5% (160/330) of participants at ICU discharge and in 74.7% (115/154) at hospital discharge; the median 1st, 3rd quartile] PFIT-s difference score ($n = 139$) was 0 0, 1] ($p < 0.05$). For STS assistance, we observed a ceiling effect in 45.9% (150/327) at ICU discharge and in 77.5% (79/102) at hospital discharge; the median PFIT-s difference score ($n = 87$) was 1 0, 2] ($p < 0.05$). For 30 s STS, we observed a floor effect in 15.0% (12/80) at ICU discharge but did not observe a floor or ceiling effect at hospital discharge. The median 30 s STS difference score ($n = 54$) was 3 1, 6] ($p < 0.05$). Conclusion: Among three progressive outcome measures evaluated in this study, the 30 s STS test appears to have the most favorable clinimetric properties to assess function at ICU and hospital discharge in moderate to severely ill participants.

Access or request full text: <https://libkey.io/10.1186/s13054-022-04048-3>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157412133&custid=ns023446>

40. Systematic review and meta-analysis of clinical effectiveness of self-management interventions in Parkinson's disease

Item Type: Journal Article

Authors: Pigott, Jennifer S.;Kane, Edward J.;Ambler, Gareth;Walters, Kate and Schrag, Anette

Publication Date: 2022

Journal: BMC Geriatrics 22(1), pp. 1-29

Abstract: Background: Parkinson's disease is a complex neurodegenerative condition with significant impact on quality of life (QoL), wellbeing and function. The objective of this review is to evaluate the clinical effectiveness of self-management interventions for people with Parkinson's disease, taking a broad view of self-management and considering effects on QoL, wellbeing and function. Methods: Systematic searches of four databases (MEDLINE, Embase, PsycINFO, Web of Science) were conducted for studies evaluating self-management interventions for people with Parkinson's disease published up to 16th November 2020. Original quantitative studies of adults with idiopathic Parkinson's disease were included, whilst studies of atypical Parkinsonism were excluded. Full-text articles were independently assessed by two reviewers, with data extracted by one reviewer and reliability checked by a second reviewer, then synthesised through a narrative approach and, for sufficiently similar studies, a meta-analysis of effect size was conducted (using a random-effects meta-analysis with restricted maximum likelihood method pooled estimate). Interventions were subdivided into self-management components according to PRISMS Taxonomy. Risk of bias was examined with the Cochrane Risk of Bias 2 (RoB2) tool or ROBINS-I tool as appropriate. Results: Thirty-six studies were included, evaluating a diverse array of interventions and encompassing a range of study designs (RCT n = 19; non-randomised CT n = five; within subject pre- and post-intervention comparisons n = 12). A total of 2884 participants were assessed in studies across ten countries, with greatest output from North America (14 studies) and UK (six studies). Risk of bias was moderate to high for the majority of studies, mostly due to lack of participant blinding, which is not often practical for interventions of this nature. Only four studies reported statistically significant improvements in QoL, wellbeing or functional outcomes for the intervention compared to controls. These interventions were group-based self-management education and training programmes, either alone, combined with multi-disciplinary rehabilitation, or combined with Cognitive Behaviour Therapy; and a self-guided community-based exercise programme. Four of the RCTs evaluated sufficiently similar interventions and outcomes for meta-analysis: these were studies of self-management education and training programmes evaluating QoL (n = 478). Meta-analysis demonstrated no significant difference between the self-management and the control groups with a standardised mean difference (Hedges g) of -0.17 (-0.56, 0.21) p = 0.38. By the GRADE approach, the quality of this evidence was deemed "very low" and the effect of the intervention is therefore uncertain. Components more frequently observed in effective interventions, as per PRISMS taxonomy analysis, were: information about resources; training or rehearsing psychological strategies; social support; and lifestyle advice and support. The applicability of these findings is weakened by the ambiguous and at times overlapping nature of self-management components. Conclusion: Approaches and outcomes to self-management interventions in Parkinson's disease are heterogeneous. There are insufficient high quality RCTs in this field to show effectiveness of self-management interventions in Parkinson's disease. Whilst it is not possible to draw conclusions on specific intervention components that convey effectiveness, there are promising findings from some studies, which could be targeted in future evaluations.

Access or request full text: <https://libkey.io/10.1186/s12877-021-02656-2>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=154609017&custid=ns023446>

41. Loudness affects motion: asymmetric volume of auditory feedback results in asymmetric gait in healthy young adults

Item Type: Journal Article

Authors: Reh, Julia; Schmitz, Gerd; Hwang, Tong-Hun and Effenberg, Alfred O.

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-13

Abstract: Background: The potential of auditory feedback for motor learning in the rehabilitation of various diseases has become apparent in recent years. However, since the volume of auditory feedback has played a minor role so far and its influence has hardly been considered, we investigate the volume effect of auditory feedback on gait pattern and gait direction and its interaction with pitch. Methods: Thirty-two healthy young participants were randomly divided into two groups: Group 1 (n = 16) received a high pitch (150-250 Hz) auditory feedback; group 2 (n = 16) received a lower pitch (95-112 Hz) auditory feedback. The feedback consisted of a real-time sonification of the right and left foot ground contact. After an initial condition (no auditory feedback and full vision), both groups realized a 30-minute habituation period followed by a 30-minute asymmetry period. At any condition, the participants were asked to walk blindfolded and with auditory feedback towards a target at 15 m distance and were stopped 5 m before the target. Three different volume conditions were applied in random order during the habituation period: loud, normal, and quiet. In the subsequent asymmetry period, the three volume conditions baseline, right quiet and left quiet were applied in random order. Results: In the habituation phase, the step width from the loud to the quiet condition showed a significant interaction of volume*pitch with a decrease at high pitch (group 1) and an increase at lower pitch (group 2) (group 1: loud 1.02 ± 0.310 , quiet 0.98 ± 0.301 ; group 2: loud 0.95 ± 0.229 , quiet 1.11 ± 0.298). In the asymmetry period, a significantly increased ground contact time on the side with reduced volume could be found (right quiet: left foot 0.988 ± 0.033 , right foot 1.003 ± 0.040 , left quiet: left foot 1.004 ± 0.036 , right foot 1.002 ± 0.033). Conclusions: Our results suggest that modifying the volume of auditory feedback can be an effective way to improve gait symmetry. This could facilitate gait therapy and rehabilitation of hemiparetic and arthroplasty patients, in particular if gait improvement based on verbal corrections and conscious motor control is limited.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05503-6>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157527021&custid=ns023446>

42. Exploratory insights into novel prehabilitative neuromuscular exercise-conditioning in total knee arthroplasty

Item Type: Journal Article

Authors: Risso, Anna Maria;van der Linden, Marietta L.;Bailey, Andrea;Gallacher, Peter and Gleeson, Nigel

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-11

Abstract: Background: Contemporary strategies for prehabilitation and rehabilitation associated with total knee arthroplasty (TKA) surgery have focused on improving joint range-of-motion and function with less emphasis on neuromuscular performance beneficially affecting joint stability. Furthermore, prehabilitation protocols have been found to be too long and generic-in-effect to be considered suitable for routine clinical practice. Methods: A pragmatic exploratory controlled trial was designed to investigate the efficacy of a novel, acute prehabilitative neuromuscular exercise-conditioning (APNEC) in patients electing TKA. Adults electing unilateral TKA were assessed and randomly allocated to exercise-conditioning (APNEC, n = 15) and usual care (Control, n = 14) from a specialised orthopaedic hospital, in the United Kingdom. APNEC prescribed nine stressful exercise-conditioning sessions for the knee extensors of the surgery leg, accrued over one week (3 sessions·week⁻¹; 36 exercise repetitions in total; machine, gravity-loaded) and directly compared with usual care (no exercise). Prescribed exercise stress ranged between 60%-100% of participant's daily voluntary strength capacity, encompassing purposefully brief muscular activations (≤ 1.5 s). Baseline and follow-up indices of neuromuscular performance focusing on muscle activation capacity (electromechanical delay EMD], rate of force development RFD] and peak force PF]) were measured ipsilaterally using dynamometry and concomitant surface electromyography (m. rectus femorisRF] and m. vastus lateralisVL]). Results: Group mean ipsilateral knee extensor muscular activation capacity (EMDRF F(3,57) = 53.5; p < 0.001]; EMDVL F(3,57) = 50.0; p < 0.001]; RFD F(3,57) = 10.5; p < 0.001]) and strength (PF

$F(3,57) = 16.4$; $p < 0.001$) were significantly increased following APNEC (Cohen's d , 0.5-1.8; 15% to 36% vs. baseline), but unchanged following no exercise control (per protocol, group by time interaction, factorial ANOVA, with repeated measures), with significant retention of gains at 1-week follow-up ($p < 0.001$). Conclusions: The exploratory APNEC protocol elicited significant and clinically-relevant improvement and its retention in neuromuscular performance in patients awaiting TKA. Trial Registration: (date and number): clinicaltrial.gov: NCT03113032 (4/04/2017) and ISRCTN75779521 (3/5/2017).

Access or request full text: <https://libkey.io/10.1186/s12891-022-05444-0>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157304201&custid=ns023446>

43. Prehabilitation of elderly frail or pre-frail patients prior to elective surgery (PRAEP-GO): study protocol for a randomized, controlled, outcome assessor-blinded trial

Item Type: Journal Article

Authors: Schaller, Stefan J.; Kiselev, J.örn; Loidl, Verena; Quentin, Wilm; Schmidt, Katrin; Mörgeli, Rudolf; Rombey, Tanja; Busse, Reinhard; Mansmann, Ulrich; Spies, Claudia; on behalf of the PRAEP-GO consortium, PRAEP-GO investigators; Marschall, Ursula; Eckardt-Felmborg, Rahel; Landgraf, Irmgard and Schwantes, Ulrich

Publication Date: 2022

Journal: Trials 23(1), pp. 1-17

Abstract: Background: Frailty is expressed by a reduction in physical capacity, mobility, muscle strength, and endurance. (Pre-)frailty is present in up to 42% of the older surgical population, with an increased risk for peri- and postoperative complications. Consequently, these patients often suffer from a delayed or limited recovery, loss of autonomy and quality of life, and a decrease in functional and cognitive capacities. Since frailty is modifiable, prehabilitation may improve the physiological reserves of patients and reduce the care dependency 12 months after surgery. Methods: Patients ≥ 70 years old scheduled for elective surgery or intervention will be recruited in this multicenter, randomized controlled study, with a target of 1400 participants with an allocation ratio of 1:1. The intervention consists of (1) a shared decision-making process with the patient, relatives, and an interdisciplinary and interprofessional team and (2) a 3-week multimodal, individualized prehabilitation program including exercise therapy, nutritional intervention, mobility or balance training, and psychosocial interventions and medical assessment. The frequency of the supervised prehabilitation is 5 times/week for 3 weeks. The primary endpoint is defined as the level of care dependency 12 months after surgery or intervention. Discussion: Prehabilitation has been proven to be effective for different populations, including colorectal, transplant, and cardiac surgery patients. In contrast, evidence for prehabilitation in older, frail patients has not been clearly established. To the best of our knowledge, this is currently the largest prehabilitation study on older people with frailty undergoing general elective surgery. Trial Registration: ClinicalTrials.gov NCT04418271 . Registered on 5 June 2020. Universal Trial Number (UTN): U1111-1253-4820.

Access or request full text: <https://libkey.io/10.1186/s13063-022-06401-x>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157279212&custid=ns023446>

44. Preoperative predictors of health-related quality of life changes (EQ-5D and EQ VAS) after total hip and knee replacement: a systematic review

Item Type: Journal Article

Authors: Schatz, Caroline;Klein, Nina;Marx, Antonia and Buschner, Peter

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-12

Abstract: Background: Patient-reported outcomes are of ever-increasing importance in medical decision-making. The EQ-5D is one of the generic instruments measuring health-related quality of life (HRQoL) in arthroplasty. This review aimed to identify possible predictors of HRQoL changes for patients undergoing total knee replacements (TKR) or total hip replacements (THR). Methods: A systematic literature review according to the PRISMA guidelines was conducted, searching several databases. Preoperative to postoperative HRQoL changes were evaluated in patients undergoing THR or TKR, using the EQ-5D visual analog scale (VAS) or the preference-based EQ-5D Index were evaluated. Articles were considered with prospectively or retrospectively collected data, as well as registry data, each with statistical analyses of patient-related factors. Results: Eight hundred eighty-two articles were found, of which 21 studies met the inclusion criteria. Predictors were distinguished in alterable and non-alterable ones. The EQ-5D Index indicated a tendency towards beneficial improvements for patients with a high body mass index (BMI) (> 40) and no significant results for the VAS. Additionally, one study found that patient education and preoperative physiotherapy appeared to enhance HRQoL. Some evidence indicated that male gender was negatively associated with changes in the VAS and the EQ-5D Index, but one study reported the opposite. Changes in VAS and EQ-5D Index were lower for older patients, whereas a higher educational level seemed to be advantageous. A high Charnley class led to deteriorating changes in VAS, although a high Kellgren Lawrence classification was positively associated with the EQ-5D Index, in a limited number of studies. For all results, clinical relevance was calculated differently and mainly reported as uncertain or small. Conclusions: The literature on this topic was weak and offers only limited guidance. Results for alterable predictors, such as the BMI, indicated valuable improvements for highly obese patients. Further, high-quality research is required to support medical decision-making. Level Of Evidence: Level IV, according to the OCEBM Levels of Evidence Working Group.

Access or request full text: <https://libkey.io/10.1186/s12891-021-04981-4>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=154713176&custid=ns023446>

45. Oral exercises significantly improve oral functions in people with mild and moderate dementia: A randomised controlled study

Item Type: Journal Article

Authors: Somsak, Kwanrutai;Tangwongchai, Sookjaroen;Komin, Orapin and Maes, Michael

Publication Date: 2022

Journal: Journal of Oral Rehabilitation 49(6), pp. 616-626

Abstract: Background: There have been no standard protocols of oral exercises for maintaining and improving oral function for people with dementia. Objective: This study aimed to determine the effects of home-based oral exercises on the oral function of people with mild to moderate dementia. Methods: Twenty-two participants at King Chulalongkorn Memorial Hospital were randomly assigned to the exercise group (n = 11) or control group (n = 11). The exercise group was instructed to do three home-based oral exercises, consisting of tongue-strengthening, oral diadochokinesis (ODK) and mouth-opening exercises, for 3 months, while the control group received advice on oral health care. The maximum tongue pressure (MTP) was the primary outcome. MTP, ODK rates of /pa/, /ta/, /ka/, modified water swallowing test (MWST) and oral moisture were measured at baseline, and after 1, 2 and 3 months of training. The

generalised estimating equation analysis was used to evaluate the effects of oral exercises on the oral function. Results: The MTP and all ODK rates in the exercise group were significantly increased after 3 months of training. There were significant interaction effects between time and intervention in MTP and all ODK rates. No significant interaction effects between time and intervention in oral moisture were found. The MWST scores in both groups did not change through the end of study, and no adverse effects were reported. Conclusion: Home-based oral exercises were found to be effective for improving tongue strength and tongue-lip motor function in people with mild to moderate dementia.

Access or request full text: <https://libkey.io/10.1111/joor.13317>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156712250&custid=ns023446>

46. The effects of preoperative rehabilitation on pain and functional outcome after total knee arthroplasty: a meta-analysis of randomized controlled trials

Item Type: Journal Article

Authors: Su, Wanying;Zhou, Yang;Qiu, Hailing and Wu, Hui

Publication Date: 2022

Journal: Journal of Orthopaedic Surgery & Research 17(1), pp. 1-17

Abstract: Background: There have been controversial findings for the effectiveness of rehabilitation before operation after total knee arthroplasty (TKA). This study aimed to conduct an updated, comprehensive systematic review. On that basis, the review was to be combined with meta-analysis to measure the effects of rehabilitation before operation on functions and pain after TKA. Methods: Articles were searched by using Central Register of Controlled Trials (CENTRAL), Web of Science, EMBASE, Cochrane, Pubmed, CNKI, Wanfang, Weipu and the Chinese Biomedical Database from the beginning to December 10, 2021. The major outcomes included pain, knee flexion and extension, as well as knee range of motion (ROM). Secondary outcomes included timed-up-and-go (TUG), 6-min walk, and patient-reported functional outcome (the Knee Injury and Osteoarthritis Outcome Score (KOOS) or Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC)). Third outcomes included the length of hospital stay. Results: Nineteen studies recruiting 1008 patients satisfied with the inclusion criteria. Significant difference was identified in knee flexion, TUG, KOOS (knee-associated life quality and functions in sports and recreation), as well as the length of hospital stay ($P < 0.05$). Insignificant statistical difference was identified in pain, 6-min walk, ROM, knee extension, KOOS (pain, symptoms and function of daily living) after TKA between the two groups. No difference was found between the groups in WOMAC. Conclusions: Preoperative rehabilitation could significantly shorten hospital stay, whereas there is not any conclusive evidence of the improvement of postoperative functions. Accordingly, in-depth high-quality studies should be conducted to confirm the effectiveness of preoperative rehabilitation in patients having received TKA.

Access or request full text: <https://libkey.io/10.1186/s13018-022-03066-9>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155887634&custid=ns023446>

47. Sensor-guided gap balance versus manual gap balance in primary total knee arthroplasty: a meta-analysis

Item Type: Journal Article

Authors: Sun, Changjiao;Zhao, Zhe;Lee, Woo Guan;Ma, Qi;Zhang, Xiaofei;Zhu, Jianjin and Cai, Xu

Publication Date: 2022

Journal: Journal of Orthopaedic Surgery & Research 17(1), pp. 1-10

Abstract: Background: Despite vast improvements in technology and surgical technique in total knee arthroplasty (TKA), approximately 15–25% TKAs, have suboptimal subjective clinical outcomes. Our study sought to evaluate if sensor-guided balancing improves postoperative clinical outcomes compared to a conventional gap balancing technique. Methods: We searched Web of Science, Embase, PubMed, Cochrane Controlled Trials Register, Cochrane Library, Highwire, CBM, CNKI, VIP, and Wanfang database in March 2022 to identify studies involving sensor-guided balancing versus conventional gap balancing technique in TKA. Finally, we identified 2147 knees assessed in nine studies. Results: Compared with manual gap balancing, Sensor-guided gap balancing resulted in less rate of Manipulation under anesthesia (MUA) ($P = 0.02$), however more rate of intraoperative additional procedures ($P = 0.0003$). There were no significant differences in terms of KSS ($P = 0.21$), KSS Function score ($P = 0.36$), OKS ($P = 0.61$), KOOS ($P = 0.78$), operative time ($P = 0.17$), Mechanical axis ($P = 0.69$) and rate of reoperation between two groups. Conclusion: Compared with conventional manual gap balancing techniques, sensors have more balancing procedures being performed. However, it did result in a reduction in the rate of MUA. More extensive, high-quality RCTs are required to verify our findings further.

Access or request full text: <https://libkey.io/10.1186/s13018-022-03129-x>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156444564&custid=ns023446>

48. Internet-based vestibular rehabilitation versus standard care after acute onset vertigo: a study protocol for a randomized controlled trial

Item Type: Journal Article

Authors: Surano, Solmaz;Grip, Helena;Öhberg, Fredrik;Karlsson, Marcus;Faergemann, Erik;Bjurman, Maria;Davidsson, Hugo;Ledin, Torbjörn;Lindell, Ellen;Mathé, Jan;Tjernström, Fredrik;Tomanovic, Tatjana;Granåsen, Gabriel and Salzer, Jonatan

Publication Date: 2022

Journal: Trials 23(1), pp. 1-15

Abstract: Background: Dizziness and vertigo affect around 15% of adults annually and represent common reasons for contacting health services, accounting for around 3% of all emergency department visits worldwide. Vertigo is also associated with excessive use of diagnostic imaging and emergency care and decreased productivity, primarily because of work absenteeism. Vestibular rehabilitation is an evidence-based treatment for chronic dizziness and supervised group exercise therapy has recently been shown to be effective after vestibular neuritis, a common cause of acute onset vertigo. However, such interventions are not readily available and there is a need for more easily accessible tools. The purpose of this study is to investigate the effects on vestibular symptoms of a 6-week online vestibular rehabilitation tool after acute onset vertigo, with the aim of aiding vestibular rehabilitation by presenting a more accessible tool that can help to reduce recovery time. Methods: Three hundred twenty individuals diagnosed with acute vestibular syndrome (AVS) will be recruited from multiple hospitals in Sweden and the effects of an online vestibular rehabilitation tool, YrselTräning, on vestibular symptoms after acute onset vertigo will be compared to standard care (written instructions leaflet) in a two-armed, evaluator-blinded, multicenter randomized controlled trial. The primary outcome will be the Vertigo Symptom Scale Short Form (VSS-SF) score at 6 weeks after symptom onset. Secondary outcomes include effects of the intervention on activities of daily living, mood and anxiety, vestibular function recovery, mobility measures, health economic effects, and the reliability of the Swedish VSS-SF translation. Discussion: Participants using the online vestibular rehabilitation tool are expected to recover earlier and to a greater extent from their symptoms as compared

to standard care. Since up to 50% of people with AVS without treatment develop persistent symptoms, effective treatment of AVS will likely lead to a higher quality of life and help reduce the societal costs associated with dizziness and vertigo. Trial Registration: Clinicaltrials.gov NCT05056324 . Registered on September 24, 2021.

Access or request full text: <https://libkey.io/10.1186/s13063-022-06460-0>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157505011&custid=ns023446>

49. **Overground robotic training effects on walking and secondary health conditions in individuals with spinal cord injury: systematic review**

Item Type: Journal Article

Authors: Tamburella, Federica;Lorusso, Matteo;Tramontano, Marco;Fadlun, Silvia;Masciullo, Marcella and Scivoletto, Giorgio

Publication Date: 2022

Journal: Journal of NeuroEngineering & Rehabilitation (JNER) 19(1), pp. 1-56

Abstract: Overground powered lower limb exoskeletons (EXOs) have proven to be valid devices in gait rehabilitation in individuals with spinal cord injury (SCI). Although several articles have reported the effects of EXOs in these individuals, the few reviews available focused on specific domains, mainly walking. The aim of this systematic review is to provide a general overview of the effects of commercial EXOs (i.e. not EXOs used in military and industry applications) for medical purposes in individuals with SCI. This systematic review was conducted following the PRISMA guidelines and it referred to MED-LINE, EMBASE, SCOPUS, Web of Science and Cochrane library databases. The studies included were Randomized Clinical Trials (RCTs) and non-RCT based on EXOs intervention on individuals with SCI. Out of 1296 studies screened, 41 met inclusion criteria. Among all the EXO studies, the Ekso device was the most discussed, followed by ReWalk, Indego, HAL and Rex devices. Since 14 different domains were considered, the outcome measures were heterogeneous. The most investigated domain was walking, followed by cardiorespiratory/metabolic responses, spasticity, balance, quality of life, human-robot interaction, robot data, bowel functionality, strength, daily living activity, neurophysiology, sensory function, bladder functionality and body composition/bone density domains. There were no reports of negative effects due to EXOs trainings and most of the significant positive effects were noted in the walking domain for Ekso, ReWalk, HAL and Indego devices. Ekso studies reported significant effects due to training in almost all domains, while this was not the case with the Rex device. Not a single study carried out on sensory functions or bladder functionality reached significance for any EXO. It is not possible to draw general conclusions about the effects of EXOs usage due to the lack of high-quality studies as addressed by the Downs and Black tool, the heterogeneity of the outcome measures, of the protocols and of the SCI epidemiological/neurological features. However, the strengths and weaknesses of EXOs are starting to be defined, even considering the different types of adverse events that EXO training brought about. EXO training showed to bring significant improvements over time, but whether its effectiveness is greater or less than conventional therapy or other treatments is still mostly unknown. High-quality RCTs are necessary to better define the pros and cons of the EXOs available today. Studies of this kind could help clinicians to better choose the appropriate training for individuals with SCI.

Access or request full text: <https://libkey.io/10.1186/s12984-022-01003-9>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155778253&custid=ns023446>

50. Special issue: Rehabilitation in and after critical care

Item Type: Journal Article

Authors: Vollam, Sarah and Efstathiou, Nikolaos

Publication Date: 2022

Journal: Nursing in Critical Care 27(1), pp. 130-132

Abstract: The article presents the discussion on critical care research and policy focusing on survival to intensive care unit (ICU) discharge. Topics include profound and prolonged showing neuromuscular weakness, impairment of physical function, and respiratory problems; and cognitive impairment as well as anxiety, depression, and post traumatic stress disorder for both patients and the families having parents and siblings of critically ill children.

Access or request full text: <https://libkey.io/10.1111/nicc.12755>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155325629&custid=ns023446>

51. The effect of corticosteroid injection in the treatment of greater trochanter pain syndrome: a systematic review and meta-analysis of randomized controlled trials

Item Type: Journal Article

Authors: Wang, Yule;Wang, Kaijin;Qin, Yiling;Wang, Sanrong;Tan, Botao;Jia, Lang;Jia, Gongwei and Niu, Lingchuan

Publication Date: 2022

Journal: Journal of Orthopaedic Surgery & Research 17(1), pp. 1-10

Abstract: Background: corticosteroid injection (CSI) has been used to treat greater trochanter pain syndrome (GTPS) for many years. However, so far, the efficacy of CSI in the treatment of GTPS is still controversial. Therefore, the aim of this review is to evaluate the effectiveness of CSI in comparison with sham intervention, nature history, usual care, platelet-rich plasma (PRP), physiotherapy/exercise therapy, dry needling, or other nonsurgical treatment for improvements in pain and function in GTPS. Methods: PubMed (Medline), Embase, Cochrane Library were searched from their inception until April 2021. Randomized controlled trails (RCTs) comparing CSI to nonsurgical treatment were included. Data on the effect of CSI on pain and function were extracted and checked by two review authors independently. The treatment effect was analyzed in the short term, medium term, and long term. Results: Eight RCTs (764 patients) were included. This review suggests CSI may be superior to usual care and 'wait and see,' ESWT, but may not be superior to exercise, PRP, dry needling, and sham intervention in short-term pain or function improvement. In terms of medium-term pain or function improvement, CSI may be superior to usual care and 'wait and see,' but may not be superior to PRP. In terms of long-term pain or function improvement, CSI may be inferior to PRP and ESWT, but it may be superior to usual care and 'wait and see' at 12 months. Conclusions: Due to the small sample size and lack of sufficient clinical studies, current evidence is equivocal regarding the efficacy of CSI in the treatment of GTPS. Considering the limitations, more large-sample and high-quality RCTs are needed to prove the therapeutic effect of CSI on GTPS. Trial registration: PROSPERO registration number: CRD42021247991. Registered 09 May 2021.

Access or request full text: <https://libkey.io/10.1186/s13018-022-03175-5>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157004795&custid=ns023446>

d=ns023446

52. A multifactorial interdisciplinary intervention to prevent functional and mobility decline for more participation in (pre-)frail community-dwelling older adults (PromeTheus): study protocol for a multicenter randomized controlled trial

Item Type: Journal Article

Authors: Werner, Christian;Wolf-Belala, Nacera;Nerz, Corinna;Abel, Bastian;Braun, Tobias;Grüneberg, Christian;Thiel, Christian;Büchele, Gisela;Muche, Reiner;Hendlmeier, Ingrid;Schäufele, Martina;Dams, Judith;König, Hans-Helmut;Bauer, Jürgen M.;Denkinger, Michael and Rapp, Kilian

Publication Date: 2022

Journal: BMC Geriatrics 22(1), pp. 1-18

Abstract: Background: Age-related decline in physical capacity can lead to frailty, associated with an increased vulnerability to adverse health outcomes and greater healthcare utilization. In an aging population, effective strategies to prevent physical decline and frailty, and preserve independence are needed. Prevention programs for vulnerable community-dwelling older adults are, however, often not yet established and implemented in routine practice. Research on the feasibility, implementation, and (cost-)effectiveness of multifactorial, interdisciplinary intervention programs that take advantage of available services of healthcare providers is also limited. The main aim of this study is to evaluate the effectiveness of such an intervention program (PromeTheus) to prevent functional and mobility decline for more participation in community-dwelling (pre-)frail older adults. Methods: The study is designed as a three-center, randomized controlled trial with a 12-month intervention period. Four hundred community-dwelling (pre-)frail (Clinical Frailty Scale score 4-6) older adults (≥ 70 years) will be randomized in a 1:1 ratio to the intervention group (IG) or the control group (CG). The IG will receive the PromeTheus program consisting of obligatory home-based physical exercises (Weight-bearing Exercise for Better Balance) accompanied by physiotherapists and facultative counseling services (person-environment-fit, coping with everyday life, nutrition, group-based activities) delivered via existing healthcare structures (e.g., social workers, nutritionists). The CG will receive usual care and a one-time counseling session on recommendations for physical activity and nutrition. Primary outcomes assessed at months 6 and 12 are the function component of the Late-Life Function and Disability Instrument and the University of Alabama at Birmingham Life-Space Assessment. Secondary outcomes are disability, physical capacity and activity, frailty, nutritional status, falls, fear of falling, health status, and psychosocial components. Process and economic evaluations are also conducted. Primary statistical analyses will be based on the intention-to-treat principle. Discussion: Compared to usual care, the PromeTheus program is expected to result in higher function and mobility, greater independence and lower need for care, and more participation. As the PromeTheus program draws on existing German healthcare structures, its large-scale translation and delivery will be feasible, if evidence of (cost-)effectiveness and successful implementation can be demonstrated. Trial Registration: German Clinical Trials Register, . Registered on March 11, 2021.

Access or request full text: <https://libkey.io/10.1186/s12877-022-02783-4>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=155237534&custid=ns023446>

53. Efficacy of the SOAR knee health program: protocol for a two-arm stepped-wedge randomized delayed-controlled trial

Item Type: Journal Article

Authors: Whittaker, Jackie L.;Truong, Linda K.;Losciale, Justin M.;Silvester-Lee, Trish;Miciak, Maxi;Pajkic,

Andrea;Le, Christina Y.;Hoens, Alison M.;Mosewich, Amber;Hunt, Michael A.;Li, Linda C. and Roos, Ewa M.

Publication Date: 2022

Journal: BMC Musculoskeletal Disorders 23(1), pp. 1-13

Abstract: Background: Knee trauma permanently elevates one's risk for knee osteoarthritis. Despite this, people at-risk of post-traumatic knee osteoarthritis rarely seek or receive care, and accessible and efficacious interventions to promote knee health after injury are lacking. Exercise can ameliorate some mechanisms and independent risk factors for osteoarthritis and, education and action-planning improve adherence to exercise and promote healthy behaviours. Methods: To assess the efficacy of a virtually-delivered, physiotherapist-guided exercise-based program (SOAR) to improve knee health in persons discharged from care after an activity-related knee injury, 70 people (16-35 years of age, 12-48 months post-injury) in Vancouver Canada will be recruited for a two-arm step-wedged assessor-blinded delayed-control randomized trial. Participants will be randomly allocated to receive the intervention immediately or after a 10-week delay. The program consists of 1) one-time Knee Camp (group education, 1:1 individualized exercise and activity goal-setting); 2) weekly individualized home-based exercise and activity program with tracking, and; 3) weekly 1:1 physiotherapy-guided action-planning with optional group exercise class. Outcomes will be measured at baseline, 9- (primary endpoint), and 18-weeks. The primary outcome is 9-week change in knee extension strength (normalized peak concentric torque; isokinetic dynamometer). Secondary outcomes include 9-week change in moderate-to-vigorous physical activity (accelerometer) and self-reported knee-related quality-of-life (Knee injury and OA Outcome Score subscale) and self-efficacy (Knee Self Efficacy Scale). Exploratory outcomes include 18-week change in primary and secondary outcomes, and 9- and 18- week change in other components of knee extensor and flexor muscle function, hop function, and self-reported symptoms, function, physical activity, social support, perceived self-care and kinesiophobia. Secondary study objectives will assess the feasibility of a future hybrid effectiveness-implementation trial protocol, determine the optimal intervention length, and explore stakeholder experiences. Discussion: This study will assess the efficacy of a novel, virtually-delivered, physiotherapist-guided exercise-based program to optimize knee health in persons at increased risk of osteoarthritis due to a past knee injury. Findings will provide valuable information to inform the management of osteoarthritis risk after knee trauma and the conduct of a future effectiveness-implementation trial. Trial Registration: Clinicaltrials.gov reference: NCT04956393. Registered August 5, 2021, <https://clinicaltrials.gov/ct2/show/NCT04956393?term=SOAR&cond=osteoarthritis&cntry=CA&city=Vancouver&draw=2&rank=1>.

Access or request full text: <https://libkey.io/10.1186/s12891-022-05019-z>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=154880238&custid=ns023446>

54. The effects of total knee arthroplasty on knee proprioception of patients with knee osteoarthritis: a meta-analysis

Item Type: Journal Article

Authors: Xue, Ya-Yue;Shi, Jing-Nan;Zhang, Kuan;Zhang, Hao-Hua and Yan, Song-Hua

Publication Date: 2022

Journal: Journal of Orthopaedic Surgery & Research 17(1), pp. 1-10

Abstract: Background: Studies have given some pieces of evidence for the effect of total knee arthroplasty (TKA) on knee proprioception of patients with knee osteoarthritis (KOA), but their results were conflicting. This review was performed to provide an updated evidence-based meta-analysis investigating the influence of TKA on knee proprioception. Methods: The electronic databases including PubMed, Google Scholar, and

the Cochrane Library were accessed from their inception to March 2020. Two reviewers identified the studies that met the selection criteria for this review. Information on study type, participants, follow-up time, and outcome measures was extracted. Methodological quality was independently assessed by two reviewers using the Cochrane Handbook 5.1.0. Eleven studies with 475 participants were included in the meta-analysis. Results: The I² index assessed the heterogeneity between studies. The results showed that the pooled standard mean difference of mean angle of error was -0.58° (95% CI -1 to -0.16 ; $P = 0.007$; $I^2 = 69\%$), and the joint position sense of KOA patients was better after TKA surgery than that before surgery. Pooled standard mean difference of displacement of center of pressure (COP) was -0.39 (95% CI -0.72 to -0.06 ; $P = 0.02$; $I^2 = 51\%$), and KOA patients had better static balance after TKA surgery than before surgery. Conclusions: To conclude, no standardized comprehensive evaluation protocol presently exists though different assessment tools are available to measure proprioception. Contrasting results were found in the literature since some studies found that TKA improves proprioception in KOA patients, while others found no difference in proprioception. These differences are seen whether the proprioception was assessed by joint position sense (JPS), or it was indirectly assessed by static balance. However, the lack of sufficient data on the threshold to detect passive movement (TTDPM) and dynamic balance made it difficult to draw a conclusion about whether or not the sense of motion improved after surgery. The method for measuring and evaluating knee joint force sense is worth paying attention, which will make progress with knee proprioception on TKA patients.

Access or request full text: <https://libkey.io/10.1186/s13018-022-03142-0>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=156788376&custid=ns023446>

55. Ankle-foot orthosis with an oil damper versus nonarticulated ankle-foot orthosis in the gait of patients with subacute stroke: a randomized controlled trial

Item Type: Journal Article

Authors: Yamamoto, Sumiko; Motojima, Naoyuki; Kobayashi, Yosuke; Osada, Yuji; Tanaka, Souji and Daryabor, Aliyeh

Publication Date: 2022

Journal: Journal of NeuroEngineering & Rehabilitation (JNER) 19(1), pp. 1-10

Abstract: Background: Gait improvement in patients with stroke has been examined in terms of use or non-use of an ankle-foot orthosis (AFO), but the effects of different kinds of AFOs remain unclear. In this study, the effect on gait of using an AFO with an oil damper (AFO-OD), which has plantarflexion stiffness without dorsiflexion resistance, was compared with a nonarticulated AFO, which has both dorsiflexion and plantarflexion stiffness, in a randomized controlled trial. Methods: Forty-one patients (31 men, 10 women; mean age 58.4 ± 11.3 years) in the subacute phase of stroke were randomly allocated to two groups to undergo gait training for 1 h daily over 2 weeks by physiotherapists while wearing an AFO-OD or a nonarticulated AFO. A motion capture system was utilized to measure shod gait without orthosis at baseline and after training with the allocated AFO. Data analysis focused on the joint kinematics and kinetics, spatial and temporal parameters, ground reaction force, and shank-to-vertical angle. Unpaired t-test or Mann-Whitney U test was performed to clarify the difference in gait with an AFO between the two AFO groups after training, with a significance level of $p = 0.05$. Results: Thirty-six patients completed the study (17 in the AFO-OD group and 19 in the nonarticulated AFO group). The ankle joint was more dorsiflexed in single stance ($p = 0.008$, effect size $r = 0.46$) and peak ankle power absorption was larger in stance ($p = 0.007$, $r = 0.55$) in the AFO-OD group compared with the nonarticulated AFO group. Peak power absorption varied among patients in the AFO-OD group. Increased dorsiflexion angles were also found at initial contact ($p = 0.008$, $r = 1.51$), pre-swing ($p = 0.045$, $r = 0.91$), and the swing phase ($p = 0.045$, $r = 0.91$) in the AFO-OD group. There was no difference in peak plantarflexion moment, ankle power generation, spatial or temporal parameters, ground reaction force, or shank-to-vertical angle between the two groups.

Conclusions: The results of this study showed that an AFO with plantarflexion stiffness but without dorsiflexion resistance produced greater improvement in ankle joint kinematics and kinetics compared with the nonarticulated AFO, but the results of peak power absorption varied greatly among patients. Trial registration UMIN000028126, Registered 1 August 2017, https://upload.umin.ac.jp/cgi-bin/icdr/ctr_menu_form_reg.cgi?recptno=R000032197.

Access or request full text: <https://libkey.io/10.1186/s12984-022-01027-1>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157132942&custid=ns023446>

56. Effects of Different Doses of Clopidogrel plus Early Rehabilitation Therapy on Motor Function and Inflammatory Factors in Patients with Ischemic Stroke

Item Type: Journal Article

Authors: Zhao, Zhuolin;Ma, Ying;Liu, Qin;Jiang, Ling;Shu, Huimin;Chen, Daofeng and Wu, Jiao

Publication Date: 2022

Journal: Evidence-Based Complementary & Alternative Medicine (eCAM) , pp. 1-6

Abstract: This prospective randomized controlled study was intended to assess the effects of different doses of clopidogrel plus early rehabilitation therapy on motor function and inflammatory factors in patients with ischemic stroke. Between August 2018 and October 2020, 90 cases of ischemic stroke treated in the Second People's Hospital of Yibin were randomized at a ratio of 1 : 1 to receive either oral 50 mg/d clopidogrel plus early rehabilitation therapy (low-dose group) or oral 75 mg/d clopidogrel plus early rehabilitation therapy (high-dose group), with 45 cases in each group. The outcome measures including the Barthel Index (BI), National Institutes of Health Stroke Scale (NIHSS), Fugl-Meyer simplified scale, hypersensitive C-reactive protein (hs-CRP), interleukin-6 (IL-6), tumor necrosis factor- α (TNF- α), and occurrence of adverse events were collected. After treatment, the high-dose group had higher BI results than the low-dose group. All eligible patients showed significantly declined NIHSS scores, and the high-dose group had markedly lower results ($P < 0.05$). After treatment, the Fugl-Meyer scores of both upper and lower extremities of the high-dose group were significantly higher than those in the low-dose group. The high-dose group achieved a greater decrease in inflammatory factor levels after treatment versus the low-dose group. The two groups showed a similar incidence of adverse events. High-dose clopidogrel plus early rehabilitation outperforms the low-dose treatment for patients with ischemic stroke by effectively mitigating the inflammatory response in the body, promoting the restoration of neurological function, improving the level of motor function, and enhancing the patient's quality of life, with manageable safety.

Access or request full text: <https://libkey.io/10.1155/2022/9692382>

URL: <https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=rzh&AN=157445310&custid=ns023446>

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