PEDro Newsletter 1 February 2021

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A. PEDro update (1 February 2021)

PEDro contains 49,685 records. In the 1 February 2021 update you will find:

- 38,461 reports of randomised controlled trials (37,732 of these trials have confirmed ratings of methodological quality using the PEDro scale)
- 10,536 reports of systematic reviews, and
- 688 reports of evidence-based clinical practice guidelines.

PEDro was updated on 1 February 2021. For latest guidelines, reviews and trials in physiotherapy visit *Evidence in your inbox*.

B. DiTA update (1 February 2021)

DiTA contains 1,958 records. In the 1 February 2021 update you will find:

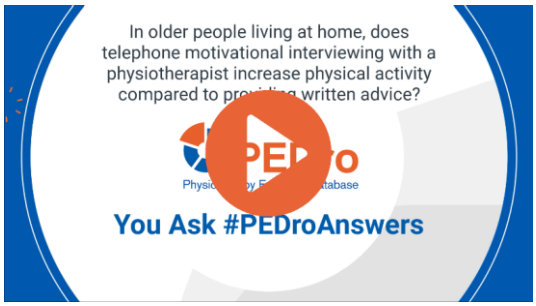
- 1,758 reports of primary studies, and
- 200 reports of systematic reviews.

DiTA was updated on 1 February 2021. For the latest primary studies and systematic reviews evaluating diagnostic tests in physiotherapy visit *Evidence in your inbox*.

C. First short video of PEDro Advanced Search for the “You Ask #PEDroAnswers” campaign

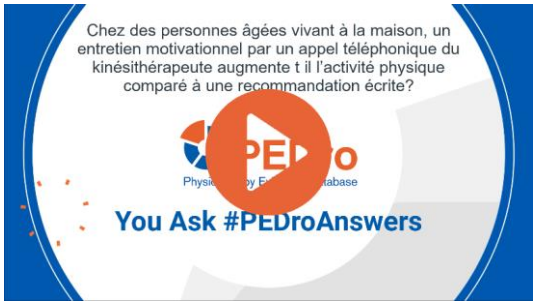
Each month in 2021 we will share short videos illustrating how to use the PEDro Advanced Search to find the best research to answer clinical questions submitted by PEDro users.

The first question to be answered is “In older people living at home, does telephone motivational interviewing with a physiotherapist increase physical activity compared to providing written advice”.



The Search terms are:

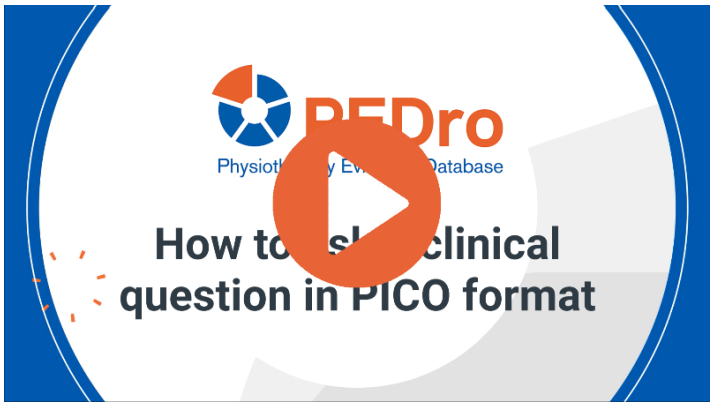
- gerontology (Subdiscipline)
- motivational interview* (Abstract & Title).



PEDro acknowledges the contributions of Sébastien Matéo and Matthieu Guémann from the Société Française de Physiothérapie who translated and recorded the French video.

You can submit your question for the “You Ask #PEDroAnswers” campaign at https://pedro.org.au/english/learn/you-ask-pedro-answers/.

D. “You Ask #PEDroAnswers” search tip #1 - ask a PICO question before you search



Throughout 2021 we will be sharing some tips on how to use the PEDro Advanced Search. The first tip is “ask a PICO question before you search”.

As a clinician, you perform diagnostic tests, provide information on prognosis, and implement interventions on a daily basis. You may want to find out if the diagnostic test (or combination of tests) you are using is the best available considering your facilities and resources. You may want to discover the course of recovery for a condition you don't see very often. You may also like to know if you are offering an intervention that is supported by the results of high-quality research. To do these you need to pose a clinical question.

In order to answer your clinical question, it is helpful to break it down into four essential components using the 'PICO' framework. In this memory aid, **P** stands for patient, **I** stands for intervention, **C** stands for comparison, and **O** stands for outcome. Taking the time to clearly define the question will help you work out the best search terms to use, which in turn will make finding the best research to answer your question less daunting or time-consuming.

For questions about the effects of interventions, your PICO question should include all four elements:
P (patient): what is the condition or population group of interest, are you interested in a particular subgroup (eg, acute stroke) or sociodemographic group (eg, workers)? Are you working with older people, children, athletes, people that have had a traumatic brain injury or stroke?
I (the intervention): what treatment are you interested in?
C (the comparison): are you interested in comparing your intervention to placebo, usual care, or another intervention (eg, aquatic versus land-based exercise)?
O (the outcome): what measurable outcome(s) are you interested in improving? Is the outcome important to patients? Outcomes could be events (eg, falls), symptoms (eg, pain), functional measures (eg, walking speed) and quality of life. Harmful effects and the cost of treatment are also important outcomes to consider.

An example of a PICO question about the effects of an intervention is: "In people with Parkinson's disease, does training using visual or auditory cues reduce the risk of having a fall compared to usual care?"

PICO can also be used to frame diagnostic questions, but here "I" takes on a new meaning:
P (patient).
I (the "issue"): this could be a diagnostic test, a combination of physical tests, or a clinical prediction rule.
C (the comparison): what do you want to compare your diagnostic test to? This could be a reference test or the gold standard test.
O (for outcome): this is usually a measure of the test utility like specificity or sensitivity. This gives you an idea of both the rate of false positives (diagnosing the condition in those that do not have it) and false negatives (missing the diagnosis in those that do).

An example of a PICO question about a diagnostic test is: “In female soccer players with knee injuries, what is the accuracy of the anterior draw test compared to medical resonance imaging for detecting an anterior cruciate ligament injury?”

Elements of PICO can help you ask questions about the prognosis of a condition. With prognostic questions “I” takes on a new meaning and the “C” is dropped:
P (patient): when specifying this element it is useful to include the duration or severity.
I (for “time”): over what time span are you interested in, the short- or long-term?
O (for outcome): these should be both quantifiable and important to patient’s goals and priorities. Examples include the rate of disease progression or a positive outcome (eg, return to work or sport).

An example of a PIO question about prognosis is: “For people with an episode of back pain resulting in 4 weeks off work, what is the likelihood that they return to work in their previous role at 6 months?”

We’ve just revised the PEDro video tutorial on posing clinical questions about interventions.

E. “You Ask #PEDroAnswers” campaign spreads to Germany and France

Physiotherapists from around the globe have started submitting their clinical questions to the “You Ask #PEDroAnswers” campaign. We invite all physiotherapists to join in.

The campaign is spreading to Germany and France. We welcome Physio Deutschland as a new supporter for the campaign. To help French-speaking physiotherapists to be involved, the launch video is now available in French. PEDro acknowledges the contributions of Sébastien Matéo and Matthieu Guémann from the Société Française de Physiothérapie who translated and recorded the video.

We invite physiotherapists in Germany and France to submit clinical questions using a [contact form on the PEDro web-site](), by tagging us with your question in a Tweet ([@PEDro_database]() or [@PEDrinho_dbase]()) or through Facebook by posting your question as a comment on a “You Ask #PEDroAnswers” post or sending us your question via Messenger ([Physiotherapy Evidence Database]() or [PEDrinho - Physiotherapy Evidence Database]()). Remember to include all the PICO elements in your question. That is, the Patient, Intervention, Comparator and Outcome.

F. Video for large clinical trial that found that screening for fall risk and targeted exercise or multifactorial intervention did not result in fewer fractures than advice by mail alone in community-dwelling older people

Last month we summarised the [PreFIT clinical trial by Lamb et al](). The trial concluded that screening for fall risk and targeted exercise or multifactorial intervention did not result in fewer fractures than advice by mail alone in community-dwelling older people.

A video of Professor Sallie Lamb explaining the PreFIT results is available at [https://youtu.be/VSvcfBLs2AU]().

Lamb SE, et al. Screening and intervention to prevent falls and fractures in older people. *N Engl J Med* 2020;383(19):1848-59

Read more on PEDro.

G. Systematic review found that exercise therapy delivered using advanced telehealth technology may improve exercise capacity, dyspnoea and quality of life

Chronic obstructive pulmonary disease is a major cause of disability and mortality worldwide. There is level 1 evidence that exercise-based pulmonary rehabilitation improves exercise capacity, dyspnoea and quality of life. Telecommunication technology can be used to deliver exercise therapy. This systematic review aimed to estimate the effects of exercise therapy delivered using advanced telehealth technology compared to no exercise or inpatient or outpatient exercise therapy and home-based exercise therapy without telehealth on exercise capacity, quality of life, dyspnoea and costs in people with stable chronic obstructive pulmonary disease.

Guided by a prospectively registered protocol, sensitive searches were performed in 7 databases (including Medline and PEDro), hand searching of relevant conference proceedings and citation tracking. Randomised controlled trials involving people with stable chronic obstructive pulmonary disease were included if they compared exercise therapy delivered using advanced telehealth technology to: (1) no exercise, (2) inpatient or outpatient exercise therapy, or (3) home-based exercise therapy without telehealth. Exercise therapy delivered using advanced telehealth technology was defined as delivery of home-based exercise using any telehealth technology that was more advanced than phone contact alone (eg, real-time videoconferencing, web-based interactive platforms or smartphone applications providing either therapist or algorithm-mediated (automated) individualised feedback and goals). The primary outcomes were exercise capacity, quality of life, dyspnoea and costs in the short (1-4 months) and long (9-12 months) term. Two reviewers independently selected trials, extracted data, and evaluated trial quality and certainty of evidence, with any disagreements resolved by discussion or arbitration by a third reviewer. Trial quality was evaluated using the Cochrane risk of bias tool. Certainty of evidence was evaluated using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach. Meta-analysis was used to estimate the mean difference and 95% confidence interval (CI) for each outcome for each comparison.

34 articles reporting 15 trials (1,522 participants) were included in the analyses. Exercise therapy delivered using advanced telehealth technology was compared to no exercise in 7 trials, to inpatient or outpatient exercise therapy in 3 trials, and to home-based exercise

therapy without telehealth in 6 trials (note, 1 trial compared exercise delivered with telehealth to both no exercise and home-based exercise without telehealth). The advanced telehealth technology consisted of real-time supervised/monitored exercise sessions (2 trials) and unsupervised training with telehealth feedback (13 trials). The dose of exercise training ranged from 3-7 sessions/week for 1-12 months.

Exercise therapy delivered using advanced telehealth technology increased the distance walked in 6 minutes (mean difference 15 m; 95% CI 5 to 24; 4 trials; 458 participants; low certainty) and improved quality of life measured using the St George Respiratory Questionnaire (mean difference -4%; 95% CI -7 to 0; 4 trials; 361 participants; low certainty) and dyspnoea measured using the Chronic Respiratory Questionnaire dyspnoea sub-score (mean difference 2 points; 95% CI 0 to 4; 2 trials; 120 participants; very low certainty) in the short term compared to no exercise therapy. Meta-analyses could not be performed for the long-term outcomes and there were no data available for cost-effectiveness.

Compared to inpatient or outpatient exercise therapy, exercise therapy delivered using advanced telehealth technology produced a similar distance walked in 6 minutes (mean difference 6 m; 95% CI -26 to 37; 2 trials; 224 participants; low certainty) and modified Medical Research Council dyspnoea scale score (mean difference 0 points; 95% CI 0 to 0; 2 trials; 152 participants; low certainty) but improved quality of life measured with the St George Respiratory Questionnaire score (mean difference -4%; 95% CI -9 to 0; 2 trials; 224 participants; low certainty) in the short-term. Again, meta-analyses could not be performed for the long-term outcomes and there were no data available for cost-effectiveness.

Exercise therapy delivered using advanced telehealth technology had a similar effect as home-based exercise therapy without technology on distance walked in 6 minutes (mean difference 2 m; 95% CI -16 to 19; 3 trials; 231 participants; low certainty) and St George Respiratory Questionnaire score (mean difference -14%; 95% CI -28 to 1; 3 trials; 171 participants; very low certainty) but improved the Chronic Respiratory Questionnaire dyspnoea sub-score (mean difference 2 points; 95% CI 0 to 4; 2 trials; 123 participants; very low certainty) in the short term. One trial (105 participants) reported cost-effectiveness, with no difference in total cost (mean difference EUR 288; 95% CI -3,998 to 3,424). Meta-analyses could not be performed for the long-term outcomes.

Exercise therapy delivered using advanced telehealth technology may improve exercise capacity, dyspnoea and quality of life compared with no exercise therapy, although some benefits may be small. Exercise therapy delivered using advanced telehealth technology is generally similar to inpatient or outpatient exercise therapy, and similar to or better than home-based exercise therapy without technology.

Bonnevie T, et al. Advanced telehealth technology improves home-based exercise therapy

for people with stable chronic obstructive pulmonary disease: a systematic review. *J Physiother* 2021;67(1):27-40

Read more on PEDro.

H. What makes a great clinical trial? Study exploring physiotherapy trials published in 2014-2019 offers some insights

Some trials are ground-breaking and grab a great deal of attention. Others fail to excite. What makes them different? A recent descriptive study published in Physiotherapy Theory and Practice offers some insights.

The study aimed to identify common characteristics of landmark physiotherapy clinical trials. Data were extracted from the PEDro Top 5 Trials in 2014-2019, 91 physiotherapy trials published in top medical journals (*New England Journal of Medicine*, *Lancet*, *JAMA* and *BMJ*) in 2014-2019, and 99 trials published in 2014-2019 that were randomly selected from PEDro. The characteristics that were either downloaded from PEDro or extracted from the articles were:

- trial features (total PEDro score and individual PEDro scale items; sample size; number of trial sites; use of prospective registration; positive or negative trial results; PEDro codes for subdiscipline, topic, problem, therapy, and body part)
- trial reach (number of citations in general and in guidelines; Altmetric score)
- journal characteristics (impact factor)
- author characteristics (number of publications and citations of first and last authors).

One-way independent ANOVA and Chi-squared tests were used to evaluate the between-group differences.

In terms of key trial features, the PEDro Top 5 Trials in 2014-2019 had a higher mean total PEDro score (8.0 out of 10) compared to the trials in top medical journals (6.9) and the random sample of physiotherapy trials (5.4), with the PEDro Top 5 Trials having the highest proportion of trials with concealed allocation, assessor blinding, low loss to follow-up and intention to treat analysis. Trials published in the top medical journals recruited the largest samples (mean 1,454 participants), followed by the PEDro Top 5 Trials (710) then the random set of trials (162). The PEDro Top 5 Trials were more likely to be multi-site (100%) and prospectively registered (100%) than trials published in the top medical journals (78% and 76%, respectively) and the random sample of trials (19% and 16%, respectively). The random sample of trials had the highest percentage of positive results (84%), followed by the PEDro Top 5 Trials (60%) then trials published in the top medical

journals (49%). The problem was the only PEDro code was distributed differently across the trial groups.

For trial reach, the PEDro Top 5 Trials and trials published in the top medical journals had more citations in general (mean 25 for both) and in guidelines (40% vs. 37%) and higher Altmetric scores (mean 220 vs. 347) than the random sample of physiotherapy trials (mean of 2 citations, 4% cited in guidelines, mean of 17 on Altmetric).

The journal impact factor was substantially higher for the PEDro Top 5 Trials (mean 51.237) and trials published in the top medical journals (47.856) than for the random sample of physiotherapy trials (2.553).

The first and last authors of trials published in the top medical journals have more citations (mean 21,348) and publications (339) than the PEDro Top 5 Trials (6,050 and 179, respectively) and the random sample of physiotherapy trials (3,879 and 144, respectively).

The PEDro Top 5 Trials and physiotherapy trials published in the top medical journals have characteristics that may inform the design, conduct, and reporting of future physiotherapy trials. Key features are high methodological rigor, large sample sizes, multiple study sites, prospective registration, many citations (including in guidelines), high Altmetric scores, and senior authors who are highly cited and have large numbers of publications. The PEDro Top 5 Trials and physiotherapy trials published in top medical journals reached prominence despite being more likely to be 'negative' trials.

Zadro JR, et al. What makes a great clinical trial in physiotherapy? *Physiother Theory Pract* 2021 Jan 4:Epub ahead of print. DOI:10.1080/09593985.2020.1870252

I. Thank you to PEDro volunteers and staff during 2020

PEDro received assistance from a large number of volunteers during 2020. These physiotherapists have donated time and skills to confirm that articles are eligible for indexing in PEDro, apply search codes, and rate trials indexed in PEDro using the PEDro scale. We extend a big vote of thanks to: Alessandro Pagano, Amy Sman, Ana Salles, Andrea Gardoni, Anne Jahn, Antonella Saponara, Athilas Braga, Benjamin Bowtell, Bernadette Petzel, Bernadine Teng, Carlos Sanchez Medina, Cecilia Bagnoli, Ciara Harris, Clare Walsh, Claudia Sarno, Claudio Cordani, Connie Jensen, Connor Gleadhill, Cristiano Baldan, Crystian Oliveira, David Fernandez Hernando, Diego Poddighe, Elena Ierardi, Elisabetta Bravini, Elisa Ravizzotti, Emre Ilhan, Eurose Majadas, Eva Uršej, Fereshteh Pourakzemi, Frank Aerts, Gabriel Farhat, Gerardo Candoni, Gessica Tondini, Giovanni Ferreira, Gul Oznur Karabicak, Harry Truong, Henry Pak, Hironobu Uzawa, Hopin Lee, Hubert Makaruk, Ilkim Karakaya, Irene Scotto, Ivan Jurak, Janio Luiz Correia Junior, Jean-Philippe Regnaux, Jessica Dhillon, Jiaqi Zhang, Jiayen Wong, Joelle Andre-Vert, Jon Rivero, Joshua Zadro, Juliana Fernandes, Julio Fernandes de Jesus, Junior Vitorino Fandim, Kamil Adamiec,

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Several staff are employed to develop and maintain PEDro. The staff for 2020 include: Anne Moseley (Manager); Alla Melman (Research Officer); Courtney West (Administration); Johnny Kang, Jooeun Song, Julia Scott, Sweekriti Sharma, Theresa Ford, and Yen-Ning Lin (PEDro raters).

J. PEDro most accessed articles in 2020

In 2020, PEDro answered more than 3.8 million questions. That means a new search was performed every 8 seconds, on average.

Although PEDro contains more randomised controlled trials than systematic reviews and practice guidelines, the most commonly accessed articles by PEDro users were reviews and guidelines. This means that many physiotherapists are using the best research methods to guide their practice. Using guidelines and reviews is also efficient because both methods synthesise the results of all available trials and, for guidelines, reviews on physiotherapy interventions for specific health conditions.

The top 10 articles accessed in PEDro during 2020 were:

1. Chutkan NB, et al. Evidence-based clinical guidelines for multidisciplinary spine care: diagnosis and treatment of low back pain (2020). https://www.spine.org/Portals/0/assets/downloads/ResearchClinicalCare/Guidelines/LowBackPain.pdf

   Read more on PEDro.

2. Kolasinski SL, et al. 2019 American College of Rheumatology/Arthritis Foundation guideline for the management of osteoarthritis of the hand, hip, and knee. *Arthritis Care Res* 2020;72(2):149-62

   Read more on PEDro.

3. Hornby TG, et al. Clinical practice guideline to improve locomotor function following chronic stroke, incomplete spinal cord injury, and brain injury. *J Neurol Phys Ther* 2020;44(1):49-100

Read more on PEDro.

4. Delitto A, et al. Low back pain clinical practice guidelines linked to the International Classification of Functioning, Disability, and Health from the Orthopaedic Section of the American Physical Therapy Association. *J Orthop Sports Phys Ther* 2012;42(4):A1-57

   Read more on PEDro.

5. Management of rotator cuff injuries clinical practice guideline (2019). https://www.aaos.org/globalassets/quality-and-practice-resources/rotator-cuff/rotator-cuff-cpg-final-12-20-19.pdf

   Read more on PEDro.

6. Qaseem A, et al. Noninvasive treatments for acute, subacute, and chronic low back pain: a clinical practice guideline from the American College of Physicians. *Ann Int Med* 2017;166(7):514-30

   Read more on PEDro.

7. Diercks R, et al. Guideline for diagnosis and treatment of subacromial pain syndrome: a multidisciplinary review by the Dutch Orthopaedic Association. *Acta Orthop* 2014;85(3):314-22

   Read more on PEDro.

8. Logerstedt DS, et al. Knee stability and movement coordination impairments: knee ligament sprain. *J Orthop Sports Phys Ther* 2010;40(4):A1-37

   Read more on PEDro.

9. Low Back Pain Working Group. Evidence-informed primary care management of low back pain (2017). https://actt.albertadoctors.org/CPGs/Lists/CPGDocumentList/LBP-guideline.pdf

   Read more on PEDro.

10. Page MJ, et al. Manual therapy and exercise for adhesive capsulitis (frozen shoulder) (Cochrane review). *Cochrane Database Syst Rev* 2014;Issue 8

    Read more on PEDro.

K. Next PEDro and DiTA updates (March 2021)

The next PEDro and DiTA updates are on Monday 1 March 2021.

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