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Demystifying the evidence: Strategies for integrating research into adult rehabilitation settings

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Learner Outcomes

1) Recognize the role of implementation science as it relates to adult rehabilitation in occupational therapy practice
2) List resources that can help guide practitioners’ decisions to adopt specific evidence-based practices
3) Identify evidence-based strategies for how practitioners can integrate research into practice
Today’s course

1) Overview of implementation science
2) Development of evidence-based practices
3) Implementation of evidence-based practices
4) Resources for practitioners
5) Integrating research into practice
6) Q&A

Evidence-based practice

- Definition: “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research” (Sackett, 1996).

- What is “best evidence?”
  - Meta-analyses
  - Systematic reviews
  - Critically appraised topics
  - Randomized controlled trials
Overview of implementation science

- “The scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice…to improve the quality and effectiveness of health services and care” (Eccles & Mittman, 2006, para 2).

- In other words: studying how to move research into practice!

- Outcomes studied in implementation science: adoption, acceptability, feasibility, fidelity, costs, sustainability

Overview of implementation science

- Related terminology
  - Knowledge translation
  - Research-to-practice gap
  - Practice-based evidence
  - Evidence-supported interventions
  - Evidence-informed practices
  - Knowledge diffusion
  - Implementation research
  - Research utilization
Overview of implementation science

- **T1**
  - Basic science research (e.g. NMES improves blood flow in the hemiparetic UE after stroke)

- **T2**
  - Clinical trials research (e.g. NMES improves UE function after stroke)

- **T3**
  - Implementation research (e.g. interactive workshops improve clinicians’ ability to implement NMES with stroke survivors)

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Development of EBPs

- Again…what is an EBP in the OT profession?
  - Interventions that are found to be effective through rigorous research
    - Meta-analyses
    - Systematic reviews
    - Critically-appraised topics
    - Randomized controlled trials

- Examples: Repetitive task practice; constraint-induced movement therapy; mental practice; aerobic and resistive exercise for arthritis (pain); A Matter of Balance (falls)
Implementation of EBPs

- Depending on the setting, implementation of research into practice varies

- Barriers = time, resources (staff, funding, equipment), lack of training, difficulty locating research, difficulty interpreting research, lack of support, personal perceptions of interventions, organizational factors

- Facilitators = access to online resources, interactive workshops, site “champions,” managerial support, positive experiences with EBP, manualized protocols

Access points

- Google Scholar
- Web of Science
- CINAHL
- PubMed
- MEDLINE
- PSYCHInfo
- AgeLine
Resources for practitioners

- Free Medical Journals; www.freemedicaljournals.com/htm/index.htm
- Medical Journals from around the world; www.medical-journals.com
- Highwire Press; http://highwire.stanford.edu
- Directory of Open Access Journals; www.doaj.org
- BioMed Central; www.biomedcentral.com
- Find Articles; www.findarticles.com
- Cochrane Abstracts; http://www.cochrane.org/search/site/reviews
- Cochrane Library; www.cochrane.org/index_practitioners.htm
- Occupational Therapy Critically Appraised Topics; www.otcats.com
- Turning Research Into Practice; www.tripdatabase.com/index.html
- OTSeeker; www.otseeker.com
- Cumulative Index to Nursing and Allied Health Literature; www.cinahl.com/index.html
- Physiotherapy Evidence Database; www.pedro.fhs.usyd.edu.au/
- American Occupational Therapy Association; www.aota.org/Educate/Research.aspx
- Bandolier; www.jr2.ox.ac.uk/bandolier/index.html
- Center for Reviews and Dissemination; www.crd.york.ac.uk/CRDWeb/search.aspx?
- Joanna Briggs Institute CoNNECT; www.jbiconnect.org/ot/home/index.php
- AgeLine® Database; www.aarp.org/research/ageinfo/ free
- Evidence-Based Review of Stroke Rehabilitation; www.ebrsr.com/index_home.html
- Center for International Rehabilitation Research; http://cirrie.buffalo.edu/search/index/php
- National Rehabilitation Information Center's REHABDATA; www.naric.com/search/rehab
- SUMSearch; http://sumsearch.uthscsa.edu
- Educational Resources Information Center; www.eric.ed.gov/
- OTDBASE; www.otdbase.com
- Campbell Collaboration; www.campbellcollaboration.org/
- Critically Appraised Topics—UBC & McMaster; www.mrcsc.ubc.ca/site_page.asp?pageid=98

Taking a deeper look…

- Cochrane Abstracts; http://www.cochrane.org/search/site/reviews
- Cochrane Library; www.cochrane.org/index_practitioners.htm
- Turning Research Into Practice; www.tripdatabase.com/index.html
- American Occupational Therapy Association; www.aota.org/Educate/Research.aspx
- Evidence-Base Review of Stroke Rehabilitation; www.ebrsr.com/index_home.html
Authors’ conclusions:

There is evidence that occupational therapy has a positive effect on functional ability in patients with rheumatoid arthritis.

You may also be interested in:

- Working with splints and extra-depth shoes appear to be helpful for people with rheumatoid arthritis.

Trip is the most advanced version of Trip. It has extra content and functionality, including:

- Unlimited access to evidence reviews.
- Clinical and medical knowledge.
- Unique access to Trip’s expert knowledge and management software.

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**Major Recommendations**

Note from the National Guideline Clearinghouse: in addition to the evidence-based recommendations below, the guideline includes extensive information on the evaluation process and intervention strategies for home modifications.

Definitions for the strength of recommendations (A–D) and levels of evidence (I–IV) are provided at the end of the **Major Recommendations** field.

**Recommendations for Occupational Therapy Interventions for Home Modifications**

**Home Modifications to Prevent Falls**
- Multicomponent interventions (home modifications and other fall prevention interventions) that include occupational therapy to reduce falls (A)
- Single-component intervention (home modification) including occupational therapy to prevent falls (A)
- Multicomponent interventions not including occupational therapy to prevent falls (C)

**Home Modifications to Improve Functional Performance**
- Home modification interventions to improve function in frail older adults (A)
- Home modification interventions to improve function for older adults aging with physical disabilities (C)
- Home modification interventions at discharge for postoperative hip repair (C)
- Home modification interventions for people with low vision to improve quality of life (D)
- Intensive, tailored home modification interventions to improve functional performance for

**Rehabilitation & Disability**

AOTA has identified Rehabilitation, Disability, and Participation as a key practice area in the 21st century.

Rehabilitation is at the core of occupational therapy and addresses the needs of persons with injuries, illnesses, or deficits in occupational performance due to other causes.

Overall, the goal of rehabilitation is to help our clients, regardless of condition or setting, return to participation in the activities that they need and want to do. To achieve this, clinical practice will increasingly reflect the application of current-research, evidence, and clinical reasoning to achieve better outcomes.

We hope the resources below will help you in your practice. If you have additional questions, try posting on OTCentral, a community for occupational therapy practitioners just like you. If you are an AOTA member, you are already signed up with OTCentral.org. Just use your member login and password for the AOTA site to access OTCentral.
Cancer

Practice Guidelines: Cancer Rehabilitation With Adults (purchase online)

Methotrexate Special Issue of AJD/ on Cancer Treatment and Recovery

- Physical Activity and Symptom Management Interventions
- Multidisciplinary Rehabilitation and Psychosocial, Social, and Return-to-Clinic Interventions

AJD Evidence Connection: Adults With Cancer

Critically Appraised Topics on Cancer:

- Complementary and Alternative Medicine
- Exercise Rehabilitation
- Multidisciplinary Rehabilitation
- Psychological Rehabilitation
- Symptom Management Rehabilitation

Muscloskeletal Disorders

Practice Guidelines: Adults With Musculoskeletal Conditions (purchase online)

January/February 2017 Special Issue of AJD/ on Adults With Musculoskeletal Conditions

- Guest Editorial

Findings

- Exercise is safe and feasible for the majority of cancers, stages of cancer, and ages of survivors.

- Evidence indicates that exercise increases muscle mass, strength, and lung capacity.

- Exercise interventions are associated with improved quality of life and reduced cancer-related fatigue.

- Moderate evidence indicates that exercise helps improve quality of life for some survivors and that it can increase survival rates.

- Moderate evidence shows that counseling and telephone support can be helpful to help people exercising.

- Moderate evidence suggests that supervised exercise is better than nonsupervised exercise.

- There is moderate evidence that diet and exercise interventions can reduce the rate of self-reported functional decline.

- Moderate evidence indicates that exercise improves sleep quality for people undergoing cancer treatment.

- Moderate evidence exists related to risk factors for patients of exercise is ideal and whether cognitive-behavioral therapy combined with exercise is beneficial.

Bottom Line for Occupational Therapy Practice:

Overall, the evidence indicates that exercise is beneficial for people diagnosed with cancer. It can improve their physical ability, reduce their cancer-related fatigue, and decrease stress. Occupational therapy practitioners can help clients incorporate exercise into their daily lives to enhance their health and wellness. Exercise can help reduce cancer-related fatigue, improve the quality of sleep, increase physical function, and help increase health-related quality of life, regardless of type or stage of cancer. It is beneficial for some clients pre-treatment and for most clients during and post-treatment.
Inclusion and exclusion criteria are critical to the systematic review process because they provide the structure for the quality, type, and years of publication of the literature that is incorporated into a review. The review of the question was limited to peer-reviewed scientific literature published in English. The interventions examined were within the scope of practice of occupational therapy. The literature included in the review was published between January 2006 and April 2014 and included study participants with AD and major NCDs. The review excluded data from presentations, conference proceedings, non-peer-reviewed research literature, dissertations, and theses. Using the evidence hierarchy described by Sackett, Rosenberg, Gray, Haynes, and Richardson (1996), studies in the review include Level I evidence (randomized reviews, meta-analyses, and randomized controlled trials [RCTs]), Level II evidence (two-group nonrandomized studies), and Level III evidence (one-group, nonrandomized, or cross-sectional studies).

Study Selection, Data Extraction, and Risk-of-Bias Assessment

The methodology consultants to the EBP Project completed the first step of eliminating references on the basis of citation and abstract. Review authors completed the next step of eliminating references on the basis of citations and abstracts, and grouped the related findings into themes. The strength of the evidence for each theme was appraised using an adaptation of the system proposed by the U.S. Preventive Services Task Force (2016). The strength categories are defined as follows:

1. Strong evidence indicates consistent results from multiple well-conducted studies, usually at least 2 RCTs.
2. Moderate evidence indicates 1 RCT or 2 or more studies with lower levels of evidence.
3. Limited evidence indicates few, very small, or no available studies, and some inconsistency in the findings across individual studies.
4. Insufficient evidence indicates that the number and quality of studies are too limited to make a clear classification.

Results

Of the 2,414 records that were screened, 288 underwent a full review, and 63 studies met the criteria and were included in the analysis. The flow diagram of studies is provided in Figure 1. The evidence represents 28 Level I studies, 7 Level II studies, and 8 Level III studies. Relevant study details are in Supplemental Table 1 (available online at http://joji开发商: nanjing in this article, and click on supplemental data).

Implications for Practice

1. Strategies to promote occupational therapy services at the Level of Care.
2. Strategies to enhance the integration of occupational therapy services within the care system.
3. Strategies to support the implementation of occupational therapy services across the care continuum.
4. Strategies to facilitate the dissemination of occupational therapy services within the care system.

Conclusion

Research is needed to evaluate the effectiveness and costs versus benefits of caregiver interventions under varying conditions (e.g., stage of dementia, severity of behavioral symptoms, caregiver health and stability). Further examination of intervention design (i.e., frequency and duration of intervention sessions) and implementation strategies will help determine the most effective and efficient modeled delivery of care. This study is designed to help caregivers in the initial stages of dementia to learn strategies to support their loved one and themselves. The study results will provide evidence-based practice recommendations for caregivers and health care professionals.
Upper extremity interventions are crucial for stroke patients and can significantly affect their recovery. Regaining mobility in the upper extremities is often more difficult than in the lower extremities, which can seriously impact the progress of rehabilitation. A large body of research exists around upper extremity interventions but despite continuous research on treatment and safe practices, the prognosis remains challenging. This issue provides current information regarding upper extremity interventions. Topics include robotic devices for movement therapy, virtual reality technology, spasticity treatment, EMG/feedback, electrical stimulation, brain stimulation, drugs and medical interventions, alternative and complementary medicine, hyperbaric oxygen therapy, and hand and haptic treatment. Novel/experimental upper extremity therapy techniques are reviewed along with other therapy options including repertoire-based specific training, sensory motor interventions, spasticity, and constraint-induced movement therapy.

For evidence tables, please click here.

Key Points:

- Attempts to regain function in the affected upper extremity should be limited to those individuals already showing signs of some recovery.
- Neuromuscular techniques are not superior or inferior compared to other rehabilitative approaches in treatment of the hemiplegic upper extremity.
- Bilateral arm training may not be superior to unilateral arm training at improving upper limb motor function when supplemented with robotic, auditory, electrical stimulation, or visual feedback.
- Additional upper extremity therapy or home-based training does not appear to be superior to conventional therapy for improving upper limb motor function.
- Strength training may help improve grip strength following stroke.
- Due to the variation in the treatment protocols, it is unclear whether repetitive task-specific training in combination with additional interventions improves upper extremity function.
- Trunk restraint may improve some aspects of upper limb motor function but not others (i.e., elbow extension, reaching trajectory, trunk displacement).
- Sensory pattern stimulation may improve sensory discrimination, however, it is uncertain whether it improves upper extremity functioning.
- Mental practice may result in improved upper limb motor function after stroke.
- Suction may not improve motor function or reduce contractions in the upper extremity.
- Evidence for constraint-induced movement therapy (CIMT) is inconclusive in the acute stage of stroke; however, it may be beneficial in improving daily use of the impaired extremity in the chronic phase of stroke.
- Modified constraint-induced movement therapy (M-CIMT) may improve upper extremity function in the acute chronic stages of stroke.

- Motor therapy may be an effective method of upper limb rehabilitation, especially when used in combination with other upper limb therapies.
- It is unclear whether or not feedback therapy improves upper limb motor function.
- Evidence for the use of action observation for upper limb rehabilitation is compelling.
- Further research is needed to determine the benefits of music therapy in upper limb motor function.
Integrating research into practice

What has worked in the past?
- Interactive, hands-on workshops
- Audit and feedback procedures
- Educational meetings
- EBP mentors/champions
- Manualized protocols
- Resource/material access

Integrating research into practice

- Successful implementation of research into practice involves ALL key players
  - Practitioners
  - Patients/family
  - Team members (PT, SLP, Nursing, SW, MD)
  - Administrators
  - Payers
- Implementation teams—interdisciplinary teams whose efforts address how to effective integration research into practice

Passive implementation
“Letting it happen”

Implementation teams
“Making it happen”

14% of EBP in 17 years

80% of EBP in 3 years

Thank you!
Questions?
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