Conducting a Basic Literature Search
September 18, 2018

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Course Objectives

- IHS Library Services
- What is a Literature Search?
- Creating a Searchable Question
- Explain Boolean Logic
- Conducting a Search
- Appraise the Literature
- Understanding Zotero
- Let’s Get Interactive!
- Questions??
Your IHS Library
Commons Area
Quiet Study Room

- Practically sound proof
- Plenty of outlets!
- No booking necessary!
Availability

Librarians available:
8:00am - 6:00pm
Monday - Friday
Occupational Therapy Toolkit

For SHMS Students

Toolkits and links of interest to School of Health and Medical Sciences students:

By Specialty:
- Athletic Training
- Healthcare Administration
- Occupational Therapy
- Physical Therapy
- Physician Assistant
- Speech Language Pathology

Other:
- Staying Current with the Medical Literature: How-to guide to resources that can make staying up-to-date with the medical literature easier.

FYI: You can also book a study room here and request a consultation!
Stop on By!

For general assistance or inquiries, email ihstlibrary@shu.edu

Kyle Downey, MLIS
Health Sciences Librarian | College of Nursing & School of Health and Medical Sciences Liaison

Phone: 973-542-6967
Email: kyle.downey@shu.edu
Room 1410
Reserving a Study Room

- The IHS Library has 20 study rooms for students to reserve.
- Single study rooms can hold 1-2 students.
- Group Study Rooms can hold 6-8 students.
- Each room has a white board.
- You must book a room to use it! (This is to protect you from getting kicked out.)
To Reserve a Room
<table>
<thead>
<tr>
<th>Room Type</th>
<th>Room A</th>
<th>Room B</th>
<th>Room C</th>
<th>Room D</th>
<th>Room E</th>
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<th>Room G</th>
<th>Room H</th>
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## Booking Details

<table>
<thead>
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<th>Category</th>
<th>From</th>
<th>To</th>
<th>Change</th>
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<td>Single Rooms</td>
<td>3:00pm Friday, August 17, 2018</td>
<td>3:30pm Friday, August 17, 2018</td>
<td></td>
</tr>
</tbody>
</table>

Fill out this form to complete the booking.

- **Full Name** *
  - First Name
  - Last Name
- **Email** *
- **What is your school affiliation?** *
  - School of Health and Medical Sciences
  - School of Medicine
  - College of Nursing
  - Other

[Submit my Booking]
What is a Literature Search?

A literature search is a well thought out and organized search for all of the literature published on a topic.

A well-structured literature search is the most effective and efficient way to locate sound evidence on the subject you are researching.

Your evidence may be found in: books, journals, government documents, guidelines, databases and the internet.
Information Overload

PubMed contains over 27 millions citations as of 2017

https://www.nlm.nih.gov/bsd/bsd_key.html

<table>
<thead>
<tr>
<th>Year</th>
<th># new Citations added</th>
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<td>2014</td>
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<tr>
<td>2015</td>
<td>806,326</td>
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<tr>
<td>2016</td>
<td>869,666</td>
</tr>
<tr>
<td>2017</td>
<td>813,598</td>
</tr>
</tbody>
</table>
Search Plan

1. Pose a searchable question
2. Find Subject Terms
3. Select the best database
4. Manipulate the database
Creating a searchable question

**Patient**
What are the characteristics of the patient?
What is the condition or disease you are interested in?

**Intervention**
What intervention, therapy, treatment, etc. are you interested in?

**Comparison**
What is the alternative to the intervention (different drug, surgery, etc.)

**Outcome**
What do you want to prove, measure, affect, etc.

**Types of Studies**
Systematic reviews, case studies, Guidelines, Qualitative, Quantitative
**P** for Patient, Population or Problem

- How is the disease/condition defined?
- What are the most important characteristics that describe the people?
- Are there any relevant demographic factors (e.g., age, sex, ethnicity)? What is the setting (e.g., hospital, community, etc)?
- Who should make the diagnosis?
- Are there any other types of people who should be excluded from the review (because they are likely to react to the intervention in a different way)?
Intervention and Comparison

What do you want to do for the patient?
What are the experimental and control (comparator) interventions of interest?
Intervention may be a clinical intervention or a process change
What are you comparing this to?
Is there a traditional intervention?
Is there no intervention?
Are there standard or alternative treatments to compare with the planned intervention?
*Not all PICO questions will have an established comparison component*
Outcomes

What do you hope to accomplish, measure, improve, or affect?

When entering search terms for a literature search, you won’t be searching for the O –outcome—you use the Outcome as you assessment of whether or not the article answers your question.
<table>
<thead>
<tr>
<th>P</th>
<th>Patient, Population, Problem</th>
<th>How would I describe a group of patients similar to mine?</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Intervention</td>
<td>Which main intervention, prognostic factor, or exposure am I considering?</td>
</tr>
<tr>
<td>C</td>
<td>Comparison</td>
<td>What is the main alternative to compare with the intervention?</td>
</tr>
<tr>
<td>O</td>
<td>Outcome</td>
<td>What can I hope to accomplish, measure, improve or affect?</td>
</tr>
<tr>
<td>T</td>
<td>What type of question you are asking</td>
<td>Therapy/Treatment, Diagnosis, Prognosis, Harm/Etiology</td>
</tr>
<tr>
<td>T</td>
<td>Type of Study you want to find</td>
<td>What would be the best study design/methodology?</td>
</tr>
<tr>
<td>T</td>
<td>Time</td>
<td>What changed can occur over time?</td>
</tr>
</tbody>
</table>
### The Type of Question & Type of Study

<table>
<thead>
<tr>
<th>Type of Question</th>
<th>Type of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy</td>
<td>RCTs, Systematic Review, Meta-Analysis</td>
</tr>
<tr>
<td>Prognosis</td>
<td>Cohort studies, case controls</td>
</tr>
<tr>
<td>Diagnosis</td>
<td>Controlled Trials, Systematic Reviews</td>
</tr>
<tr>
<td>Harm</td>
<td>Cohort Studies</td>
</tr>
<tr>
<td>Prevention</td>
<td>RCTs</td>
</tr>
<tr>
<td>Quality Improvement</td>
<td>RCTs</td>
</tr>
</tbody>
</table>
You have a patient who has difficulty exercising due to COPD and you wonder if pursed lip breathing techniques may improve their endurance.

PICO Example

P = patient with COPD
I = pursed lip breathing
C = regular breathing
0 = improved exercise endurance
You are working with a recent stroke patient who is having balance issues and you are considering using virtual reality in their therapy.

PICO Example 2

P = recent stroke, balance issues
I = virtual reality
C = no virtual reality
O = improved balance
Your patient is a recent veteran who is experiencing insomnia and you wonder how effective sleep restriction therapy might be in improving her sleep patterns.

PICO Example 3

P = insomnia
I = sleep restriction therapy
C = no therapy
O = improved sleep patterns
Keep in Mind…

1. You do not need every part of the PICO formula
2. Some questions will not have a comparison
3. Some questions will not have a time factor
4. Some questions might not even have an intervention
5. Remember, it’s a model, not a structure. Use it guide you, not to make things harder
Controlled Vocabulary and Key Word Searching

- How to search using key word terms
- Concept of Controlled Vocabulary
- The Pros and Cons
Key word concepts

**Key word concepts**

- **Keyword searching**: Matching characters
- **Keywords are searched** in all database fields unless you limit the search to a single field, like title or author.
- **Keyword searches** return a lot of results, but most of them aren’t very useful.
- **Keyword searching only gives** you articles that mention your topic.
Controlled Vocabulary concepts

Articles in databases are assigned subject labels by indexers.

Often called, “subject headings”, “descriptors”, or “tags”.

Subject terms describe the main concepts of an article.

Subject searching gives you articles that are about your topic.
Using the Right Terms

subject vs. keyword searching

Controlled Vocabulary

• Matches terms against a specific field in the record.
• Database hierarchy trees with suggest other subject terms to either narrow or expand on your search
• Heart Attack = Myocardial Infarction

Free-text (keyword) searching

• Some concepts have many synonyms. A free-text search statement would mean "OR"ing all those terms together
• Matches terms against words anywhere in record (abstract, title, etc.).
What are some Advantages to Controlled Vocabulary?

- Using the controlled vocabulary can make you search more precise and easier
- Increases the relevancy of results
- The indexers have already done much of the work for you.
- Searchable tree structures of terms can help you find new terms to use.
Issues with Controlled Vocabulary

• NOT all databases use a controlled vocabulary
• New concepts take time to be added
• There is often a lag phase during which the newest articles aren’t indexed
• Controlled vocabularies can contain some very strange things and some concepts may not be handled well
• The controlled vocabulary must be easily searchable
• Trying to understand what is and isn’t in a particular controlled vocabulary can give you a big headache!
### Examples of Keyword vs. Subject Headings

<table>
<thead>
<tr>
<th>Keyword</th>
<th>CINAHL Subject Heading</th>
<th>Medical Subject Heading (MeSH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Attack</td>
<td>Myocardial Infarction</td>
<td>Myocardial Infarction</td>
</tr>
<tr>
<td>Distance education</td>
<td>Education, non-traditional</td>
<td>Education, distance</td>
</tr>
<tr>
<td>EHR</td>
<td>Computerized patient record</td>
<td>Electronic Health Records</td>
</tr>
<tr>
<td>LGBT</td>
<td>GLBT persons</td>
<td>Bisexuality or Homosexuality</td>
</tr>
</tbody>
</table>
Identifying key concepts

What are the main concepts in your question?

Sample Question:

Does nutrition therapy improve decubitus pressure ulcer healing in an elderly patient?

<table>
<thead>
<tr>
<th>Nutrition therapy</th>
<th>Decubitus/pressure ulcers</th>
<th>Treatment efficacy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ulcer healing</td>
<td>Elderly patients</td>
<td></td>
</tr>
</tbody>
</table>
Search Terms

Does music therapy help to reduce preoperative anxiety in the surgical patient?

- Anxiety
  - Fear, anxiousness, agitation, worry, nervousness, unease, stress
- Music
  - Recording, CD, are there others?
- Surgery
  - Operation, procedure, excision
- Preoperative
  - Preoperative care, preoperative period, preoperative nursing
Example

• How many words could you think of for the idea of “cancer”?  
  • tumor,
  • malignancy,
  • neoplasm,
  • sarcoma...

• Articles in a database
  • Article one: “Breast tumors in young women”
  • Article two: “Surgery for prostrate cancer.”
  • Article three: “Diagnosing Melanoma.”

*All three articles are about types of cancer but different terms are used in titles.*
Boolean Logic and Operators
What they are and how they work
Boolean Logic

What is it?

Boolean logic defined logical relationships between terms in a search. The Boolean search operators are **And**, **OR**, and **NOT**.

- **AND** combines search terms so that each search result contains all of the terms.
- **OR** combines search terms so that each search result contains at least one of the terms.
- **NOT** excludes terms so that each search result does not contain any of the terms that follow it.
  - **Note**: When executing a search, **AND** takes precedence over **OR**.
<table>
<thead>
<tr>
<th>AND</th>
<th>OR</th>
<th>NOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Each result contains <strong>all</strong> search terms</td>
<td>Each result contains at least one search term</td>
<td>Results do not contain specified terms.</td>
</tr>
<tr>
<td>The search <em>children AND infant</em> finds items that contain <strong>both</strong> <em>children</em> and <em>infant</em></td>
<td>The search <em>children OR infant</em> finds items that contain <strong>either</strong> <em>children OR</em> items that contain <em>infant</em></td>
<td>The search <em>children NOT infant</em> finds items that contain <em>children</em> but do not contain <em>infant</em></td>
</tr>
</tbody>
</table>

**AND, OR, NOT Examples**
Example

Does hippotherapy (intervention) improve motor control (outcome) in children with cerebral palsy (patient)?
And NARROWS

Hippotherapy AND Cerebral Palsy
Hippotherapy AND Cerebral Palsy
Search results
Items: 1 to 20 of 72
How can we expand a search?

What other words can we possibly use along with Hippotherapy?

- Animal-Assisted Therapy
- Rehabilitation
- Patient Care
Expand with OR

- Hippotherapy
- Animal-assisted therapy
- Rehabilitation
OR

(Hippotherapy
  OR
Animal-assisted
  OR
Rehabilitation)
Cerebral Palsy AND (Hippotherapy OR animal-assisted therapy OR rehabilitation)
Best matches for cerebral palsy AND (hippotherapy OR animal-assisted therapy OR physical exercise):

Systematic review and meta-analysis of the effect of equine assisted activities and therapies on gross motor outcome in children with cerebral palsy.

Effects of hippotherapy on gross motor function and functional performance of children with cerebral palsy

Study of the therapeutic effects of a hippotherapy simulator in children with cerebral palsy: a stratified randomised controlled trial.

Results by year

Titles with your search terms

Innovative robotic hippotherapy improves postural muscle size [NeuroRehabilitation. 2018]
Impact of Hippotherapy on Gross Motor Function and Quality of Life [Neuropediatrics. 2018]
Impact of serial gait analyses on long-term outcome [Complement Ther Clin Pract. 2018]
Boolean Refresher

1. Which Boolean operator will give you the most research results?
   1. OR,  
   2. AND,  
   3. NOT  
   
   Answer: OR

2. The Operator AND, when used to link to concept terms (e.g. diabetes and exercise) will retrieve only those records that contain both concept terms.
   1. True or False

   1. TRUE

3. Using the operator AND to combine concept terms is a good way to increase the number of records retrieved in a search
   1. True or False

   • FALSE (OR increases results)
Let’s Begin A Literature Search

Where Do I Begin?
Two Databases
Let’s Start with a Searchable Question

In patients with cancer, does yoga help improve their quality of life?
Popular Resources

Databases
- PubMed
- Google Scholar
- CINAHL
- Clinical Key
- Cochrane Database of Systematic Reviews
- DynaMed Plus
- View all databases

eJournals
- Nature
- The New England Journal of Medicine
- The Lancet
- eMIR
- Journal of Clinical Nursing
- Clinical Rehabilitation
- View all eJournals

eBooks
- Netter’s Biochemistry
- Medical Microbiology, 8th ed.
- Cellular and Molecular Immunology, 9th ed.
- Biochemistry, 7th ed.
- View all eBooks

Toolkits
- Medicine
- Nursing
- Healthcare Administration
- Physician Assistant
- Physical Therapy
- Occupational Therapy
- Speech-Language Pathology
- Other
With Years 2013-2018
What are some limiters/filters to use?

<table>
<thead>
<tr>
<th>Limit your results</th>
<th>References Available</th>
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<tbody>
<tr>
<td>Abstract Available</td>
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Getting Access to Full Text

14. Results of a Pilot Yoga Intervention to Improve Pediatric Cancer Patients' Quality of Life and Physical Activity and Parents' Well-being.

Orsey, Andrea D.; Park, Crystal L.; Pulaski, Regan; Shankar, Nilani L.; Popp, Jill M.; Wakefield, Dorothy; Rehabilitation Oncology, Jan 2017. 35(1): 15-23. 9p. (Article - research, tables/charts) ISSN: 2168-3651

Subjects: Pediatric Care; Cancer Patients; Yoga; Treatment Outcomes; Family Psychosocial Factors; Child: 6-12 years; Adolescent: 13-18 years; Female: Male

Find@SHU Libraries

Request a copy of this item

Request Item through Interlibrary Loan
• We will do a similar search
• Using MeSH Subject Headings
• Limiters/filters to narrow down our results
• Save our search results
• Create an alert
Search Yoga as a keyword term

Notice we get over 4500 results

Let’s scroll down to view some details on this search
"yoga"[MeSH Terms] OR "yoga"[All Fields]
We have the same amount of results but you can see in detail how the database searched these terms.
Now Let’s See How PubMed Searches the Other Terms

<table>
<thead>
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Let’s Combine our Searches using the Advanced Search Option
<table>
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<th>Time</th>
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<td>Add</td>
<td>Search quality of life Sort by: JournalName</td>
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<td>12:24:33</td>
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<tr>
<td>#14</td>
<td>Add</td>
<td>Search &quot;yoga&quot; [MeSH Terms] OR (&quot;yoga&quot; [All Fields] Sort by: JournalName</td>
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<tr>
<td>#11</td>
<td>Add</td>
<td>Search cancer Sort by: JournalName</td>
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<td>12:24:08</td>
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</table>
Results are significantly narrowed

Now let us use the limiters/filters!
Limiters/Filter

- Some Common Limiters Include:
  - Abstract
  - Publication Dates
  - Species – Human
  - Languages – English
  - Ages
  - Article Types
  - Journal Categories
  - Subjects
Save Your Searches

01
You can add articles to a clipboard
  * These articles will only be saved to a clipboard for 8 hours

02
You can create a collection
  * basically a permeant clipboard

03
You can also email them to yourself or a colleague
Could yoga practice improve treatment-related side effects and quality of life in breast cancer? A systematic review and meta-analysis.

Fan Y1, Xiong K2, Wang Y2, Zhang L1, Liao H2.

Abstract

AIM: To determine if yoga as a complementary and alternative therapy was associated with enhanced health and treatment-related side effects in patients with breast cancer. This systematic review examines whether yoga practice provides any measurable benefit, both physically and psychologically, for women with breast cancer.

METHODS: PubMed, EMBASE and the Cochrane Library for randomized controlled trials (RCTs) throughout June 2015. We evaluated the quality of the included studies by the Cochrane Handbook 5.2 standards and analyzed the data using the Stata software, version 10.0. Meta-regression and subgroup analysis were also performed to identify additional predictors of outcome and assess heterogeneity.

RESULTS: Sixteen RCTs with a total of 930 participants were included. Comparing yoga groups to control groups, there was a statistically significant difference in overall health-related quality of life, depression, anxiety and gastrointestinal symptoms. Meta-regression analyses revealed that the duration of yoga practice and type of control group partly explained the heterogeneity. Subgroup analyses revealed that yoga had a positive effect on anxiety only when it had been practiced for longer than 3 months. Only the wait-list control group showed an effect of yoga on physical well-being.

CONCLUSION: The current evidence demonstrates that yoga practice could be effective in enhancing health and managing some treatment-related side effects for patients recovering from breast cancer. In future clinical studies, clinicians should consider the patient's wishes along with the current best evidence of the effects of yoga practice in their clinical decision-making.

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KEYWORDS: breast cancer; complementary and alternative medicine; meta-analysis; treatment-related side effect; yoga

PMID: 25560636 DOI: 10.1111/eco 12329 [Indexed for MEDLINE]
Could yoga practice improve treatment-related side effects and quality of life for women with breast cancer? A systematic review and meta-analysis.

AIM: To determine if yoga as a complementary and alternative therapy was associated with effects in patients with breast cancer. This systematic review examines whether yoga practice provides any measurable benefit, both physically and psychologically, for women with breast cancer.

METHODS: PubMed, EMBASE, and the Cochrane Library were searched for randomized controlled trials (RCTs) throughout June 2013. A meta-analysis of the included studies was performed using the Stata software, version 10.0. Meta-regression and subgroup analysis were also performed to identify additional predictors of outcome and to assess heterogeneity.

RESULTS: Sixteen RCTs with a total of 930 participants were included. Comparing yoga groups to control groups, there was a statistically significant difference in overall health-related quality of life, depression, anxiety, and gastrointestinal symptoms. Meta-regression analyses revealed the duration of yoga practice and type of control group partly explained the heterogeneity. Subgroup analyses revealed that yoga had a positive effect on anxiety only when it had been practiced for longer than 3 months. Only the well-lit control group showed an effect of yoga on physical well-being.

CONCLUSION: The current evidence demonstrates that yoga practice could be effective in enhancing health and managing some treatment-related side effects for patients recovering from breast cancer. In future clinical studies, clinicians should consider the patient's wishes along with the current best evidence of the effects of yoga practice in their clinical decision-making.
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RESULTS: Twenty-eight RCTs with a total of 951 participants were included. Comparing yoga groups to control groups, there was a statistically significant difference in overall health-related quality of life, depression, anxiety, and gastrointestinal symptoms. Meta-regression analyses revealed that the duration of yoga practice and type of control group partly explained the heterogeneity. Subgroup analyses revealed that yoga had a positive effect on anxiety only when it had been practiced for longer than 3 months. Only the wait-list control group showed an effect of yoga on physical wellbeing.

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Pan Y1, Yang K2, Wang Y2, Zhang L1, Liang L2.

Abstract

AIM: To determine if yoga as a complementary and alternative therapy was associated with enhanced health and treatment-related side effects in patients with breast cancer. This systematic review examines whether yoga practice provides any measurable benefit, both physically and psychologically, for women with breast cancer.

METHODS: PubMed, EMBASE and the Cochrane Library for randomized controlled trials (RCTs) throughout June 2013. We evaluated the quality of the included studies by the Cochrane Handbook 5.2 standards and analyzed the data using the Stata software, version 10.0. Meta-regression and subgroup analysis were also performed to identify additional predictors of outcome and to assess heterogeneity.

RESULTS: Sixteen RCTs with a total of 930 participants were included. Comparing yoga groups to control groups, there was a statistically significant difference in overall health-related quality of life, depression, anxiety and gastrointestinal symptoms. Meta-regression analyses revealed that the duration of yoga practice and type of control group partly explained the heterogeneity. Subgroup analyses revealed that yoga had a positive effect on anxiety only when it had been practiced for longer than 3 months. Only the wait-list control group showed an effect of yoga on physical well-being.

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KEYWORDS: breast cancer, complementary and alternative medicine, meta-analysis, treatment-related side effect, yoga
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Could yoga practice improve treatment-related side effects and quality of life for women with breast cancer? A systematic review and meta-analysis.

Authors: Ran, Yuanqing1
Yang, Ketu1
Wang, Yuliang2
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Liang, Heping3


Document Type: Article

Subject Terms: *YOGA
*BEAST cancer treatment
*DRUG side effects
Some Helpful Tips

• Practice using both keywords and subject terms
• You can use Google to find other terms
• Play around with AND & OR to expand and limit your search
• NOT isn’t widely used
• Use your limiters/filter!
• Save your results
• If you can’t find the Full Text, Request an Interlibrary loan (ILL)
• Look at the references (in the article, on the database)
What is Zotero?

• It’s a free, tool used to collect, organize and cite research sources

• Zotero works with both Macs and Windows as well as with Chrome, Firefox and Safari browsers.
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Exploring the perceived usefulness of practical food groups in day treatment for individuals with eating disorders

Abstract

Background/aim

Recovery from eating disorders is a challenging process. Emerging literature suggests that occupational therapists may provide a useful contribution in delivering purposeful eating-related interventions as a potential treatment to support sustained cognitive and behavioral changes for individuals with eating disorders. This study aimed to evaluate participants’ perceptions of the contribution of occupational therapy practical food groups (food-based outings and cooking groups) in supporting their functional recovery.

Methods

Individuals attended practical food groups as part of standard treatment at an outpatient eating disorders day program. Ninety-nine participants completed questionnaires at discharge and up to three follow-up points (6, 12, and 24 months). Questions related to practical food groups were analysed, exploring participants’ experiences and perceived usefulness of groups using rating-scale and open-ended questions. Open-ended responses were analysed using thematic analysis. Descriptive statistics were calculated for responses to rating-scale questions.

Results

At discharge, participants rated the importance and usefulness of practical food groups as high (4.73 and 4.43 on 5-point scales, respectively), but tended to rate their enjoyment of the groups lower (3.50 on a 5-point scale). Some skill transfer was typically reported by participants at discharge (3.92 on a 5-point scale). One core theme, “success through participation”, emerged from qualitative comments. Six subthemes were also identified: helpful components of practical food groups, perceived benefit of exposure, impact of applying cognitive and behavioral skills, challenges affecting participation, facilitating adaptation, and influence of eating disorders on challenging feared foods.

Conclusion

This study highlights that participation in practical food groups was perceived as useful in assisting individuals to improve eating behaviors and, in some circumstances, transfer those skills into their lives outside of day program. Results suggest that
Appraisal

• What is it?
  • Critical appraisal is the process of carefully and systematically examining research to judge its trustworthiness, its value, and its relevance in a particular context.

• When appraising research, keep the following three criteria in mind:
  • Quality
    Trials that are randomized and double blind, to avoid selection and observer bias, and where we know what happened to most of the subjects in the trial.
  • Validity
    Trials that mimic clinical practice, or could be used in clinical practice, and with outcomes that make sense. For instance, in chronic disorders we want long-term, not short-term trials.
  • Size
    Trials (or collections of trials) that have large numbers of patients, to avoid being wrong because of the random play of chance.
Critical Appraisal Websites

**CASP – Critical Appraisal Skills Programme (UK)**
This site includes critical appraisal checklists that can be downloaded (for systematic reviews, RCTs, cohort studies, qualitative research) information on appraisal workshops, as well as brief tutorials on quantitative and qualitative methodological issues.

**Centre of Evidence-Based Rehabilitation**
They have developed tools to use in the evaluation of occupational therapy programs and guidelines for critical appraisal.

**Users’ Guides to the Health Care Literature**
This site provides access to the complete set of Users’ Guide to Evidence-Based Practice - these guides are extremely informative and helpful.

**http://otcats.com**
This site contains CATs (critically appraised topics) and CAPs (critically appraised papers) focusing on occupational therapy intervention.
Evaluating the evidence - Trust v. Skepticism

• Evaluating the evidence for quality is a critical component of evidence based practice. Consider where the evidence sits in the evidence hierarchy.

• Use the highest evidence possible

• Consider:
  • Credibility - author qualifications, reputability (peer-review)
  • Accuracy - currency of the evidence
  • Reasonability - objective, unbiased (research question, study design, funding, publishing), transparency of methodologies
  • Support - use of references
When deciding what information to include in the literature review, it is important to look critically at each article, book, or other form of information. Here are a few examples of questions to pose for each item that you might include in your review:

• Who funded the research studies?
• Who did the research?
• What was the (political, historical, social) context surrounding this research or study?
• Pay attention to methodology: is it sound? what testing procedures, subjects, materials were used?
Predatory Publishing

What is Predatory Publishing?

• Open access relies so much on authors to finance their own work
• Most predatory publishers are in the business to make money, but much of the problem with predatory publishing involves the quality control aspect of how the information is managed
• Little to no peer-review process is applied
• Works which often do not meet the scholarly standards are then distributed into the public domain

Harmful Effects of Predatory Publishing

The most harmful effect of predatory publishing is that work is accepted for publication that would otherwise not meet the standards required for scholarly publications.

• Insufficient Editing and Peer Review
  • Predatory publishers often claim to have a swift, comprehensive peer-review process as a part of their editorial criteria. Really this is a myth because peer reviewing is a rigorous and frequently time-consuming effort.

• Obscure exposure & Limited Preservation

• Professionally Damaging

Mitochondria: Structure, Function and Clinical Relevance

George LM* and Kim A
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Saskatchewan, Canada

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Department of Medical Cell Biology, University of,
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Saskatchewan, Canada

Received: May 30, 2017; Accepted: June 22, 2017;
Published: June 29, 2017

Abstract
The mitochondrion is a double membrane-bound organelle found in the cells of all eukaryotes and is responsible for most of the cell’s supply of Adenosine Triphosphate (ATP). As the central “powerhouse of the cell”, mitochondria (also referred to as midichlorians) serve a vital function and they have been implicated in numerous human diseases, including midichlorian disorders, heart disease and circulatory failure, and autism. In this paper, the structure and function of the midichlorian is reviewed with a view to understanding how the pathophysiology of midichlorian disorders can point the way towards translational treatments.

Keywords: Cell biology; mtDNA; Translational; Novel therapeutics; Midichlorian disorders

Introduction

The midichlorian (pl. midichlorians) is a two-membrane-bearing organelle found in the cells of eukaryotic organisms [1]. Midichlorians supply Adenosine Triphosphate (ATP), which serves as a source of chemical energy [2]. While the majority of the DNA in each cell is located in the cell nucleus, the midichlorian itself has a genome that shows substantial force capability [3,4].

Midichlorians are typically 0.75-3μm across but they have variable size and shape [1]. Unless specially stained, they are too small to be visible. Beyond supplying cellular energy, midichlorians perform functions such as Force sensitivity, cell differentiation, signaling, and maintaining control of cell growth and the cell cycle [5]. Midichlorial biogenesis is regulated in conjunction with these cellular processes. Midichlorian dysfunction may be responsible for several human diseases, including autism, midichlorian disorders, cardiac dysfunction, and force failure [6].

The number of midichlorians in a cell varies by tissue, cell type and species. Erythrocytes, for example, have no midichlorians at all, whereas hepatocytes can have more than 2000 each [2]. The organelle is divided into regions with unique functions: the inner and the outer consist of proteins enshrouded in a phospholipid bilayer [8]. This bimembraned floor plan means that a midichlorian consists of five distinct parts [9], namely:

1. Outer midichlorian membrane,
2. Inner membrane space (between inner and outer membranes),
3. Inner Midichlorial membrane,
4. Cristae (folds of the inner membrane)

The matrix

The midichlorian is enveloped by the outer membrane, which is roughly 70 angstroms in thickness [10]. Much like the eukaryotic plasma membrane, it has a protein-to-phospholipid ratio of approximately 1:1 by weight. It features many integral membrane proteins called force porins. The outer membrane also contains enzymes including fatty acid Co-A ligase, lynurenine hydroxylase, and monoamine oxidase. These undertake functions such as the elongation of fatty acids, epinephrine oxidation, and tryptophan degradation [10,11].
Mitochondria: Structure, Function and Clinical Relevance

Abstract

The mitochondrion is a double-membrane-bound organelle found in the cells of eukaryotic organisms [1]. Mitochondria supply Adenosine Triphosphate (ATP), which serves as a source of chemical energy [2]. While the majority of the DNA in each cell is located in the cell nucleus, the mitochondrion itself has a genome that shows substantial force capability [3,4].

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The number of mitochondrions in a cell varies by tissue, cell type and species. Erythrocytes, for example, have no mitochondrions at all, whereas hepatocytes can have more than 2000 each [2]. The organelle is divided into regions with unique functions: the inner and the outer membrane, intermembrane space, matrix, and cristae [5,6].

Methods

1. Oxidative phosphorylation
Midichlorians-mediated oxidative stress causes cardio-myopathy in Type 2 diabetics. As more fatty acids are delivered to the heart, and into cardiomyocytes, the oxidation of fatty acids in these cells increases. Did you ever hear the tragedy of Darth Plagueis the Wise? I thought not. It is not a story the Jedi would tell you. It was a Sith legend. Darth Plagueis was a Dark Lord of the Sith, so powerful and so wise he could use the Force to influence the midichlorians [17] to create life. This process increases the number of reducing equivalents available to the midichlorial electron transport chains, and thus generates Reactive Oxygen Species (ROS) [14,15]. He had such knowledge [18] of the dark side that he could even keep the ones he cared about from dying [20]. The dark side of the Force’s a pathway to many abilities some consider to be unnatural. ROS uncouples the midichlorians by increasing uncoupling proteins and increasing the leakage of proteins through the adenine nucleotide translocate. He became so powerful... the only thing he was afraid of was losing his power, which eventually, of course, he did. Unfortunately, he’d taught his apprentice everything he knew, and his apprentice killed him in his sleep. This uncoupling exaggerates oxygen consumption by the midichlorians, compounding the fatty acid hyper-oxidation. Ironic: he could save others from death, yet not himself. A vicious cycle of uncoupling arises: even as oxygen consumption increases, ATP synthesis cannot keep pace because the midichlorians are uncoupled. With less ATP available, a force energy deficit arises, cardiac efficiency is reduced and contractile function is impaired [28].

**Potential relevance to aging**

Given the role of midichlorians as the cell’s force power station, if high-energy dark side electrons leak out, they can form harmful
Some other strategies

When you conduct a search, use these tips as well!

• Retrospective searching – you find the most recent study and work backwards
• Berry picking – follow the citations of an article you are interested in to find related material
• Find by author – most databases have an author field.
• Create alerts early! – starting a search can be daunting but if you start creating alerts now, you may find things easier in the future.
Describing your Strategy

When conducting a literature search you should be recording your methods.
This way you can keep track of what you have done to avoid mistakes and repetition.
A good record track will make it easier to replicate your search when needed.
• **What is a permalink?**
  - A permalink is a web address that will consistently point to a specific information source such as an ebook, an article, a record in the catalog, a video, or a database.
  - Copying and pasting the URL from the address field of a library database web page will not usually take you back to that original page.
  - Permalinks ensure that the link will take you back to that exact page within a database.
    - Not all databases use or have a permalink option.

A reflective case review: Relearning handwriting after a traumatic brain injury.

Authors: Titchener, Alison; Dunford, Carolyn; Wales, Lorna

Affiliation: Highly Specialist Occupational Therapist, The Children’s Trust, Tadworth, UK; Head of Therapy and Research, The Children’s Trust, Tadworth, UK; Research Team Lead, The Children’s Trust, Tadworth, UK

Source: British Journal of Occupational Therapy (BR J OCCUP THER), May 2018, 81(5): 290-293. (40)

Publication Type: Article - case study, pictorial, tables/charts

Language: English

Major Subjects: Brain Injuries -- Rehabilitation -- In Adolescence; Handwriting -- Education -- In Adolescence; Pediatric Occupational Therapy -- Methods

Minor Subjects: Feminine, Children: Occupation (Human) -- In Adolescence; Reflection: Occupational Therapy Assessment -- In Adolescence

Abstract: Statement of context: A retrospective single case study reflecting on a child relearning handwriting following a traumatic brain injury as part of an inpatient neuro-rehabilitation programme. Applying evidence-based handwriting guidelines and comparisons with community experiences are explored. Critical reflection on practice: Relearning to write following a traumatic brain injury showed dramatic improvements in 36 sessions over 12 weeks, supporting the evidence. Progress in this timeframe contrasts with clinical experiences of working with children’s community services: Implications for practice: Whilst the literature on handwriting interventions does not include children with traumatic brain injury, following the recommendations was an effective intervention for this individual.

Journal Subset: Allied Health, Double Blind Peer Reviewed; Europe; Expert Peer Reviewed; Peer Reviewed; UK & Ireland

Special Interest: Pediatric Care

ISSN: 0308-9029

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Entry Date: 20180515

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DOI: http://dx.doi.org/10.1177/0308902917752065
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Head of Therapy and Research, The Children’s Trust, Tadworth, UK
Research Team Lead, The Children’s Trust, Tadworth, UK

Source: British Journal of Occupational Therapy (BJ OCCUP THER), May 2018, 81(3): 290-293. (4p)

Publication Type: Article - case study, pictorial, tables/charts

Language: English

Major Subjects: Brain Injuries – Rehabilitation – in Adolescence
Handwriting – Education – in Adolescence
Pediatric Occupational Therapy – Methods

Minor Subjects: Female; Adolescents; Occupation (human) – in Adolescence; Reflection; Occupational Therapy Assessment – in Adolescence

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Journal Subset: Allied Health; Double Blind Peer Reviewed; Europe; Expert Peer Reviewed; Peer Reviewed; UK & Ireland

Special Interest: Pediatric Care

ISSN: 0300-0229

MEDLINE Info: NLM UID: 7710186

Entry Date: 20100515

Revision Date: 20100520

DOI: http://dx.doi.org/10.1177/0300022917752066
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• Include the PDF of your article if no link is available.

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• PubMed uses PMID’s to identify specific articles
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