Design and Results of a Workshop to Improve Evidence-Based Practice Skills Among Dietetic Interns

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Welcome to Cleveland!

• Birthplace of the American Dietetic Association (1917)
• Home of Case Western Reserve University
  – One of the leading independent research universities in the nation
    • 1st in Ohio
    • 37th among national universities
Department of Nutrition

- Established in 1913
- Within the School of Medicine
- BA or BS in Nutrition or Nutritional Biochemistry and Metabolism
  - With or without DPD
- MS in Nutrition
  - With or without DPD or DI
- MS in Public Health Nutrition
  - With or without DI
- PhD in Nutrition
  - Mostly bench science
Learning objectives

After the presentation, attendees will be able to:

• Describe the format of a workshop that was implemented at Case Western Reserve University to improve the evidence-based practice skills of dietetic interns.

• Describe how they could incorporate and evaluate some or all of the same components in their dietetics education program, including at different levels (DPD, DT, CP).

INTRODUCTION
What is evidence-based practice?

Best research evidence

Clinical expertise

Patient values and preferences

EBP versus research

Presented with clinical problem or question

Search the research evidence (literature) for guidance/answer to question

Synthesize research with clinical expertise and patient preferences to answer question

Brainstorm interesting topics/research questions

Search the literature to see if the question has already been answered

Refine research question based on existing information

Conduct research study to answer question

Crossover of research to EBP

- Even if we never plan to DO research, all dietitians must USE research
- Need critical appraisal skills when reviewing research to determine the merit and readiness of research for use in clinical practice
- In other words:
  - RDs need to be familiar with components of research so that we can distinguish “good” research from “bad” research

The field of dietetics has embraced EBP

- 2004 development of the Evidence Analysis Library
- EBP competencies required per ACEND
- Code of Ethics requires “practice with an evidence-based approach”

ACEND Guidelines can be found at: https://www.eatrightpro.org/acend/accreditation-standards-fees-and-policies/2017-standards
Information on the Evidence Analysis Library can be found at: https://www.andeal.org/about
Dietetic interns may need explicit training in EBP

- Education and training predict the RDN’s ability to incorporate EBP into practice (Byham-Gray, 2005)
- Interns observe barriers and inconsistencies in their preceptor’s use of EBP during rotations (Hinrichs, 2018)
- Therefore, implicit training on EBP through supervised practice may be inadequate
- Explicit training may be required

METHODS
Workshop development


### Workshop outline

#### Day 1
1. Ask: develop a question and convert it into something specific and answerable
2. Acquire: find the research evidence

#### Day 2
3. Appraise: evaluate which evidence is the BEST evidence
4. Apply: synthesize research with clinical expertise and patient preferences, answer the question
### Sample: ‘Ask’ step of EBP

<table>
<thead>
<tr>
<th>Step</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1:</td>
<td>What is the clinical question in plain language?</td>
</tr>
<tr>
<td>Step 2:</td>
<td>What is the clinical question in PICOTS format?</td>
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<tr>
<td>Step 3:</td>
<td>What type of question is this? (i.e. therapy, diagnosis, prognosis, or etiology/harm)</td>
</tr>
<tr>
<td>Step 4:</td>
<td>What is the best type of study to answer this question?</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Complete question:</th>
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</thead>
<tbody>
<tr>
<td>Population:</td>
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<tr>
<td>Intervention:</td>
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<tr>
<td>Comparison:</td>
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<tr>
<td>Outcome:</td>
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<tr>
<td>Time:</td>
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<tr>
<td>Setting:</td>
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### Sample: EAL scavenger hunt

Using the information on the EAL (andeal.org) related to Diabetes Type 1 and 2, find the answers to the following questions. Make note of where you found the information?

1. How many PICO questions were considered under the topic of FDA-Approved Non-Nutritive Sweeteners?
2. Pick one PICO question under this topic. What was the conclusion grade for that question?
3. How many studies were evaluated to answer the question you picked?
4. What is the quality rating for the paper Maki 2008?
5. How many participants withdrew from Maki 2008?
6. How many of the recommendations in the Diabetes 1 and 2 EBNPG are strong and imperative?
7. List at least 2 strong and imperative recommendations, each from a different NCP step.
8. List two recommendations in the Diabetes 1 and 2 EBNPG that are conditional.
9. What were the major outcomes considered in developing the EBNPG for Diabetes?
Sample: Putting it all together

“You are a dietitian in the ICU seeing a patient with medication-induced liver failure. He is high on the liver transplant list but starting to show signs of hepatic encephalopathy and the physicians would like to prevent this from worsening before his transplant.

On rounds, the pharmacist mentions that the hospital now has a probiotic on formulary. Should you go back to the physician and suggest a probiotic?”

Assessing knowledge and confidence

- Tool developed and validated by Vogt et al
  - We asked about confidence instead of frequency
- Questionnaires completed using REDCap, link emailed to students
- Also included open ended questions

Study objectives

• To examine the extent to which an 11-hour EBP workshop was related to:
  – Improvements in EBP confidence
  – Improvements in EBP knowledge
• Re-use of these data was deemed exempt
• Approved by the Case Western Reserve University Institutional Review Board.

Statistical analysis

• Confidence
  – Mean confidence score (range 0-5) overall and for each question
  – Total confidence score (range 0-45) for each participant; mean total calculated for sample
• Knowledge
  – Weighted total score out of 12 (Hinrichs, 2018; Vogt, 2016)
  – % of students who answered each question correctly
• Paired t-tests


RESULTS & DISCUSSION

Dietetic Internship / Master’s Degree Programs at CWRU

**Combined Dietetic Internship / Master’s Degree Program (CDI/MDP)**
- University Hospitals Cleveland Medical Center
  - 5 interns
- Internships based in hospitals
- Concentration: Research Processes & Applications

**MS in Public Health Nutrition / Dietetic Internship Program**
- CWRU Public Health Nutrition DI
  - 6 interns
- Internships based in community sites
- Concentration: Public Health & Community Nutrition
Both programs...

• Are 16 months
• Lead to a MS degree and eligibility to take the RDN exam
• Are non-thesis
• Include an MNT-focused seminar in the first Fall

Unpublished research results redacted from handout
Compose PICO Question

Clinical Scenario:
A 48-year-old man with borderline hypertension is referred to you for treatment of obesity. He is 5 ft 11 inches, weighs 244 pounds, and has a waist circumference of 43 inches. The patient has a sedentary lifestyle and usually skips breakfast, eats a small lunch, and then consumes a large dinner, after which he continues to snack on sweets. The patient is not ready for surgical approaches yet and is asking if a low fat diet high in protein or carbohydrate will help him to lose more weight.

You have decided to search the literature to help you make a decision about what to recommend. Write the PICO elements that will help you organize your literature search:

**P:**

**I:**

**C:**

**O:**

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Evaluation Limitations

- Changed from frequency question to confidence question
- Our students may not be representative
- No control group to account for:
  - Possible test-retest improvement
  - Improvements in knowledge/confidence based on implicit training
- Don’t know long-term impact (yet!)
Students Remained Confused about EBP Versus Research

**EBP**
- Presented with clinical problem or question
- Search the research evidence (literature) for guidance/answer to question
- Synthesize research with clinical expertise and patient preferences to answer question

**HARKER**
- Brainstorm interesting topics/research questions
- Search the literature to see if the question has already been answered
- Refine research question based on existing information
- Conduct research study to answer question

Future changes

- Shorter sessions over a longer period of time
  - Instead of two 5 to 6 hour sessions over two weeks
- More hands-on practice with searching for evidence (“Acquire”)
  - We often assume students come to us with these skills
  - Appears to be incorrect assumption
Conclusions

• Dietetic interns may have a low level of knowledge around the “Ask” and “Appraise” steps of EBP
• Explicit training can improve EBP knowledge and confidence
• Dietetic training programs that are not already doing so should consider including such explicit training in their curriculum

Questions for us?
Our questions for you...

• In any type of program...
• What do you see in your students in terms of strengths and weaknesses in EBP knowledge or confidence?
• What activities (implicit or explicit) have you found helpful in improving knowledge or confidence?
References


Thank you!

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