Evidenced-based Teaching: Gaming

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Goal of learning:
- Facilitate change in learners
- Encourage discovery leading to critical thinking
- Facilitate self-directed activities
- Teaching strategies that are evidence-based
- Actively engage learners

Despite above, lecture-based teaching remains top strategy used

(Breytenbach, Ham-Baloyi, & Jordan, 2017)
Evidenced-based teaching strategies

8 Evidenced-based teaching strategies
  • E-learning*
  • Concept mapping
  • Internet-based learning *
  • Web-based learning *
  • Educational/ computer gaming *
  • Problem-based learning (PBL)
  • Case study
  • EB interactive strategies
    Breytenbach et al. (2017)

7 meaningful & engaging teaching strategies
  • Technology & on-line teaching *
  • Simulation *
  • Gaming
  • Art teaching
  • Narrative teaching
  • Problem-based teaching
  • Reflection teaching

Crookes et al. (2013)
Focus on Gaming

Enhanced learner experience

- Interactive
- Competitive
- Promotes teamwork
- More meaningful for learners
- More enjoyable—better learning retention
- Can simulate real-life situations
- Allows for incremental milestone attainment
- Motivation

Purposes for game-based teaching

- Bridge the gap between theory & practice
- Disseminate new information
- Reinforce/Review learning outcomes
- Challenge learners to think more critically
- Influence/persuade decision
- Practice decision making
- Skill practice (communication)
- Data collection: research & innovation

(Breyenbach et al., 2017; Crookes et al., 2013; Davidson & Candy, 2016; De Lope & Medina-Medina, 2016)
Types of Gaming

- Computer-based gaming (individual)
  - Quest-based learning (Davidson et al., 2016)
- Internet-based gaming/competitive (Davidson et al., 2016)
- Board Games (Yoon, Rodriguez, Faselis, & Lippis, 2014).
- Card Games
- Team-based games
  - Debate
  - Mock Trials
  - Game Show
  - PowerPoint games
Gaming in healthcare education

- Language teaching
- Sex education
- Inter-professional communication
- Addiction prevention in adolescents

(De Lope & Medina-Medina, 2016)
Barriers to the use of gaming

- Technology (NLN, 2015)
  - Competence/conﬁdence of educator
  - Time to create and practice
  - Cost
  - Accessibility
- Low technology
  - Same as above except accessibility
Gaming to learn EBP

- Quest type of computer based gaming
  - TED Talk information introduction
  - Quest badges earned for completion of milestones
  - Learners compete against each other
  - (Davidson et al., 2016)

- Board Games to teach EBP for CAUTI reduction
  - Practical knowledge application
  - Can be used in fair type of venue or in a classroom
  - (Crookes et al., 2014)

- Card Games
  - Used to learn new knowledge
  - To reinforce learning in lieu of quizzes....
Team Dynamics: Shared Mental Model

- Characteristics of highly effective teams:
  - Known to each other
  - Worked previously together
  - Practiced as a team
  - Need a shared objective or goal – Shared vision
  - Communicate effectively

- Shared mental model – explains the framework for highly effective teams
Gaming/ Team-based learning

HOW CAN THIS BE APPLIED TO LEARNING EBP?
The PICO Question

A well-constructed PICO question serves as a roadmap to research and EBP
Pre-quiz: Which of the following refers to the “P” in PICO?

A. Medication Education
B. Reduced Infection Rates
C. Pre-teen mothers in rural communities
Hold your “A” Card, “B” card, or “C” card over your head

We will scan your answers....
P = Answer C

Population/Problem/Setting
PICO: A well constructed question

- Population/Problem
- Intervention
- Comparison
- Outcome
Asking a PICO question

**P:** Patient/Population/Problem – specific/ focused (age, sex, setting, ethnicity, condition, disease, type of patient, or population)
Asking a PICO question

I: Intervention or change which is of interest. Treatment, medications, education, diagnostic tests or best practice
Asking a PICO question

- **C**: comparison with other interventions or current practice
- different treatment, placebo or control group – absence of risk factor or condition.
- What is the main alternative?
Asking a PICO Question

- **O**: Outcome: written in measurable terms, expected outcomes based on the intervention identified, e.g., decrease in fall rate, decrease in length of stay, increase in patient satisfaction.

- desired measure, improvement in condition, (BP, Pulse), length of stay, quality of life, decreased mortality
Asking a PICO Question

- **T**: Time is another factor identified by Dr. Koshar. What is the time it takes to demonstrate the outcome after an intervention is initiated?

Guide to Creating a Strong PICO Question

Among (what patient/group population/problem)______

Does (Intervention)__________

Compared to or versus__________

Will the (outcome)__________ be observed

Adapted from Cincinnati’s Children’s Hospital
http://www.cincinnatichildrens.org/assets/0/78/176/4711/4715/fca30651-b07c-43be-a28a-80e171e7c4a4.pdf; accessed 09/02/2013
PICO Questions

- What patients do best after LVAD for end-stage HF?

- For patients (50-70 years) with end-stage HF undergoing LVAD, do patients with family members as caregivers have a better quality of life?

LVAD

1864

LVAD with Family

19
Pubmed search: LVAD

Results: 1 to 20 of 1864

1. Prediction of outcome in patients with liver dysfunction after left ventricular assist device implantation
   PMID: 23805638

2. Molecular changes after left ventricular assist device support for heart failure
   Birks EJ.
   PMID: 23889719 [PubMed - in process]
   Related citations

3. Clinical Results of Continuous Flow Left Ventricular Assist Device (LVAD) for Severe Heart Failure Patients
   Yoshioka D, Sawa Y.
   PMID: 23854506 [PubMed - in process]
   Related citations

4. Mid-long Term Result of Implantable Ventricular Assist Device Treatment for End-stage Heart Failure in the University of Tokyo Hospital
   [PubMed - in process]
Pubmed search: LVAD with family

Results: 19

1. Self-care and communication issues at the end of life of recipients of a left-ventricular assist device as destination therapy.
   Ben Gai T, Jaarsma T.
   PMID: 23314013 [PubMed - indexed for MEDLINE]
   Related citations

2. Taking a back seat: support and self-preservation in close relatives of patients with left ventricular assist device.
   Egorod I, Overgaard D.
   PMID: 22514410 [PubMed - indexed for MEDLINE]
   Related citations

3. Being a close relative of a patient with a left ventricular assist device.
   Akberin M, Aarts C.
   PMID: 22357788 [PubMed - indexed for MEDLINE]
   Related citations

4. HeartMate left ventricular assist device implantation through bilateral anterior thoracotomy.
PICO Criteria

- Population
  - HF, 50 – 70 years of age
- Intervention
  - LVAD for end stage HF
- Comparison
  - Patients with family members as caregivers and patients without family caregivers
- Outcome
  - Quality of life
- Time
  - Within three months of the LVAD
Post-quiz: Which of the following refers to the “I” in PICO?

A. Hemodialysis patients in the outpatient setting

B. Chlorhexidine bathing

C. Catheter associated bloodstream infections
Hold your “A” Card, “B” card, or “C” card over your head

We will scan your answers....
P = Answer B

Intervention

Answer
How to play the PICO Game

- Everyone is issued an envelope with either P, I, C, or O.
- Please locate 3 partners to pool your knowledge.
- Once you assembled team: Please share name, place of employment, and one interesting fact about self.
- Create a name for your team.
- Now pick your leader.
- Leader assigns roles: Scribe, Communicator, Runner, & Leader.
Send the runner to collect game

- Place your team name on the top of the scenario form
- Piece together some strong PICO questions to match with scenarios
- Write down a well-formulated PICO question for each scenario
- Once complete, send leader up to submit answers
PICO question development

- Individually and in group brainstorm a burning question from your practice
- Work as a team to formulate one or more PICO questions
- Share your question....
- Text to # 973-309-6270
- Take selfie of team with question as picture title and text to self & team


