The Episodic Tool: An Innovative Approach to Teach Clinical Decision Making to DNP Students in Advanced Health Assessment across the Lifespan

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Background

Development of critical thinking skills and clinical decision-making skills are major components of advanced practice nurse (APN) training

- Higher level thinking: difficulty with transition from role of nurse to advanced practice nurse (APN)
- Advanced Health Assessment (AHA) → foundational course to develop these skills
- Need standardized approach to teaching and evaluating APN students’ clinical skills in AHA
Background

Simulation endorsed by AACN and NONPF to enhance preparation of APN students for clinical practicums\textsuperscript{1,2}

- Objective Structured Clinical Exams (OSCEs) $\rightarrow$ AHA courses to evaluate students’ clinical competence\textsuperscript{3,4,5,6}

- Formative simulation experiences more effective than case studies to prepare APN students for summative OSCEs\textsuperscript{3,4,5,6}
Background

Local Problem: Insufficient preparation of APN students for first clinical course

- Added formative SP experiences and summative OSCEs to AHA in 2018
- Inadequate preparation and poor performance on OSCEs → development of teaching tool to enhance critical thinking and clinical decision-making skills and prepare for OSCEs
Project Goals

The purpose of this project was to develop and implement a teaching tool to enhance APN students’ critical thinking and clinical decision-making skills with the goals of improving their preparation for summative OSCEs and their first clinical course.
Methods

Episodic Tool Development

• Created using the traditional components of subjective, objective, assessment, and plan (SOAP) template

• Six Episodic Tools → specific chief complaint for each major body system (HEENT, respiratory, CV, GI, musculoskeletal, and neurological)

• Brief history scenarios: three age and gender combinations for each chief complaint → discussions about the physical exam, including abnormal findings and special tests, across the lifespan
Methods

Measures and Data Analysis

• *Summative evaluation:* oral clinical exams (OCEs), OSCEs, and Physical Exam Teaching Assistant (PETA) exams

• *Comparison:* pre-implementation (2018 and 2019) OSCE scores versus post-implementation OCE (2020) and OSCE (2021) scores

• *Control:* pre-implementation (2018 and 2019) PETA scores versus post-implementation (2020 and 2021) PETA scores

• *Welch’s t-tests* → analyze differences
Tool Implementation

Faculty-led session with 2 faculty and 10-14 students
• Piloted in 6 sessions over a 14-week semester

Students divided into small groups of 2-3 students to complete subjective component of tool
• Each group given *the same* chief complaint
• Each group given *a different* age and gender combination to represent the lifespan (pediatric, adult, and older adult)

Students given a brief history for their specific patient to complete remaining components of tool

Faculty-led discussion to highlight differences in history and physical exam components across age and gender spectrum
Example of Episodic Tool for Students

CC:

HPI:
- O:
- L:
- D:
- C:
- A:
- R:
- T:
- S:

Associated sx:

Medications:

Allergies:

Medical History:
- Birth Hx*:
- Childhood Illnesses:
- Adult medical:
- Surgical:
- Hospitalizations:
- Mental health:
- OB/GYN*:

Health Maintenance:
- Diet/caffeine:
- Exercise:
- Sleep:
- Screenings:
- Immunizations:

Family History:
- Parents:
- Siblings:
- Grandparents:
- Children:
- General review:

Social History:
- Education/Occupation:
- Living Situation:
- Safety/violence:
- Substance use:

ROS:
- General:
- Skin/hair/nails:
- Head:
- Eyes:
- Ears:
- Nose:
- Mouth/throat:
- Neck/lymph:
- Breasts:
- Chest/lungs:
- Cardiac:
- GI:
- GU:
- PV:
- MS:
- Neuro:
- Heme:
- Endo:
- Mental health:

Physical Exam:

Example of Completed Sections for Faculty

CC: HA in 9 y/o male, 35 y/o female, 70 y/o male

HPI:
- Onset: When? sudden vs. gradual? Precipitating event?
- Location: Where? Unilateral (R or L)? Bilateral?
- Duration: How long last? Constant/intermittent
- Characteristics: Pounding, Stabbing, Squeezing, etc.
- Aggravating/Relieving Factors: Activities? Treatment?
- Radiating: neck?
- Timing: Day vs. night?
- Severity: 1-10, worst HA of life? Wake up at night?
- Affecting work/school? Worsening?
- Associated sx: nausea, vomiting, photophobia, phonophobia, visual changes, aura, syncope, near syncope, dizziness, lightheadedness, weakness, focal deficit, seizures, fever, neck stiffness
- Travel? Sick contacts? Trauma? Prior similar sx?

Medical History:
- Birth Hx *: Trauma? Exposure to substances?
- Childhood Illnesses: Hydrocephalus, HIV, concussion
- Adult medical: HIV, HTN, CVA, CA, OSA, concussion
- Surgical: Head or neck surgeries? VP shunt?

Health Maintenance:
- Diet/caffeine: foods that trigger? Δ in caffeine
- Exercise: affect sx? onset during activity? sports
- Sleep: Sx affecting sleep? Wake up at night?
- Screenings: Last eye and dental exam? Lead screen (P)?
- Immunizations: Influenza? Hib, PCV, Meningitis (P)?

Age/Gender Considerations:
- Peds: Children <3 years old rarely have primary headaches; Boys > girls prior to puberty and girls > boys after puberty; most acute (non-traumatic) headaches in children are due to self-limiting conditions
- Developmental: Difficult to do complete neuro exam and visualize fundus in young children
- Geri: >50 years old increased likelihood of mass and temporal arteritis; increased risk of falls and subsequent head trauma; dementia may complicate assessment of changes in neurological status; polypharmacy
- Assigned-females at birth: estrogen-containing contraceptives (VTE), pregnancy and PP (VTE; preeclampsia; epidural use during delivery)
Results

• Pre-implementation mean OSCE score 80.7% (n=251) and post-implementation mean OCE/OSCE score 87.7% (n=277)
• Statistically significant difference in OCE/OSCE scores after implementing the Episodic Tool ($P < 0.0001$)
• No statistically significant difference between two-station (2018) and three-station (2019) OSCE scores ($P = 0.1967$); between the OCE (2020) and OSCE (2021) scores ($P = 0.307$); or between the pre-implementation and post-implementation PETA scores ($P = 0.266$)
• Faculty and student feedback → Episodic Tool aided in developing critical thinking and clinical-decision making skills and in preparing for OCEs/OSCEs
Discussion

Teaching tool successfully developed and implemented into an AHA course

• Use in face-to-face or virtual settings
• *Feedback* → practical and easy to use; promoted consistency between sections; contributed to learning
Discussion

**Episodic Tool: Effective teaching strategy**

- Significantly improved performance on the summative evaluation components requiring critical thinking skills
- Average improvement in OCE/OSCE score of 7% when using the Episodic Tool
Discussion

Limitations

• COVID-19 pandemic (2020) → learning transitioned to online; OCEs instead of OSCEs
• OSCE cases updated in 2021 → changed one case; edited rubrics for other cases → may have contributed to improvement
Conclusions

Development of critical thinking and clinical decision-making skills in AHA requires a multifaceted approach.

- Formative simulation and case studies alone are insufficient to prepare for OSCEs.
- **Episodic Tool** → demonstrated effectiveness: enhancing these skills.
Conclusions

Future Implications

• Determine impact of Episodic Tool on clinical performance

• Implement in other APN programs to determine tool effectiveness in other settings
References


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