The Comfort Wheel: An interactive case study based tool for new graduate residency

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Conflict of Interest Disclosure

- I have no personal or financial disclosures to make.

Objectives

- To describe critical thinking and its associated characteristics.
- To briefly describe learning styles, strategies, and considerations.
- To describe an identified problem with pain education in new graduate residency at CHCO.
- To provide the evidence behind our choice and next steps for this education tool.
- To describe and demonstrate the Comfort Wheel for pain education in new graduate residency program.
- To share next steps in project development.
What is the purpose of pain education for new graduate residency in the hospital?

To provide quality, safe and uniform comfort relief for our patients within the institution’s framework.

Critical thinking

• “To provide quality care in the environment, nurses need to develop critical thinking (CT) skills that will provide them with expertise in flexible, individualized, situation-specific problem solving. (Brunt, 2005, p. 60)”
• “As health care systems become more complex...it is important for nurses to develop critical-thinking, problem solving, and reflective practice techniques.” (Rogal & Young, 2008, p28.)
• “…critical thinking is an integral part of clinical decision making and therefore a routine part of nurses’ work.” (Daly, 2001, p121.)

Seventeen dimensions of critical thinking: Ten habits of the mind (Scheffer & Rubenfeld, 2000)

• Confidence
• Contextual perspective
• Creativity
• Flexibility
• Inquisitiveness
• Intellectual integrity
• Intuition
• Open-mindedness
• Perseverance
• Reflection
Critical Thinking: Seven Cognitive skills  
(Scheffer & Rubenfeld, 2000)

- Analyzing
- Applying standards
- Discriminating
- Information seeking
- Logical reasoning
- Predicting
- Transforming knowledge

Does this remind you of anything familiar?

The nursing process (assess, plan, implement and evaluate patient care)

VAK model of learning Neil D. Fleming

- Visual learning styles
- Auditory learning styles
- Kinesthetic/Tactile styles
### Visual learner (from ThoughtCo.com)

**Traits**
- Prefers written word & instructions
- Organizes learning material
- Prefers photos & illustrations with printed content
- Enjoys timelines for history
- Reads notes
- Remembers 75% of what reads
- Understands information best when seeing it

**Teaching strategies**
- Visual material in variety of formats
- Handouts/written material
- Visually appealing
- Videos, photos, computer work, maps, posters, charts, cartoons, PowerPoints, puzzles, writing
- Notes with details

### Auditory learning styles (ThoughtCo.com)

**Traits**
- Remembers 75% of what hears
- Speaks in class situations
- Good at explaining
- Enjoys music
- Good at grammar & languages
- Good listener
- Follows directions
- Remembers through verbal repetition

**Teaching Strategies**
- Oral reports/presentations
- Teach class
- Panel discussions
- Debate
- Verbal games
- Raps and songs
- Show & tell or storytelling
- Works in groups well

### Kinesthetic/Tactile learner (ThoughtCo.com)

**Traits**
- Difficulty learning in sedentary manner
- Great eye-hand coordination (motor memory)
- High energy level
- Quick reactions
- Sports, art and drama

**Teaching Strategies**
- Movement, movement tasks or changing positions
- Paired and group work
- Frequent breaks
- Lessons with an activity
- Remember what they do & experience with body
- Role plays, charades, videos, experiments, puzzles, games, and posters
The “Problem”

- Nursing Professional development: condense time spent on pain management education in new graduate residency program.
- Evaluations: PowerPoints negatively reviewed.
- Professional development: Desire to move towards more interactive style to improve translation and application of knowledge to practice. Students prefer active teaching strategies. Comments made that that this material is covered in nursing school.

The “Problem”

- Clinical and anecdotal observation indicates that the leap to application and understanding of pain material is not evident in the nurses choices, questions, and documentation.
- What is the best way to engage nurses in the clinical application of pain material to their practice and promote clinical thinking in the new graduate and new hire employee orientation?

Advantages of Active Learning Strategies

- Promotes cognitive processing
- Encourages critical thinking
- Provides experiential learning
- Develops problem solving and decision making skills
- Offers immediate feedback
- Creates an environment that is open to sharing & discussion
- Practice of communication strategies (SBAR & CUS @ CHCO)
- Reinforces resources
- Promotes team building
Organizational Readiness

- Anticipated Stakeholders: Nursing Professional development, Accreditation, Nursing Clinical Practice, + more nursing committees and groups.
- Barriers: Pain Consultation Service is under the School of Medicine, Anesthesiology Department. University of Colorado. Communication between nursing groups and Pain Consultation Service. Desire for Pain Consultation Services to be the content experts related to pain education. Developing relationships between CHCO structures and processes at CHCO. Development of awareness of a need for consistent approach to pain at CHCO.
- Facilitators: New graduate residency coordinator, CTEP trainers, APS medical director and Clinical director of Chronic pain service.

Organizational Culture

Mission and Vision:
- Nurses contribute to the organization’s mission and vision through the advancement of nursing practice, education, research and advocacy.

Philosophy:
- Caring is the foundation of the nursing profession and is supported in an environment that is family centered, evidenced based and innovative.

Background

Background of the Issue: It is challenging to teach pain education to new graduate nurses who desire interactive activities, have been exposed to foundational pain knowledge, but have difficulty with application to clinical practice situations and retention of pain foundational knowledge to guide their practice.

Significance of the Issue: Pain is experienced by most hospitalized pediatric patients at some time during their hospitalization. Nurses give pain medications frequently during their shift. Joint Commission (JC) citations related to therapeutic duplication and scope of practice issues. New JC standards begin January 2018.
Key studies


Levels of Evidence (CHCO)

- Level A: Meta-analysis, metasynthesis of multiple controlled studies, and results that consistently support specific action, intervention, or treatment
- Level B: Well controlled studies (RCT or non randomized, with consistently support a specific action, intervention or treatment
- Level C: Qualitative, integrative review, or systematic review of qualitative, descriptive, or correlational or RCT with inconsistent results
- Level D: Peer reviewed professional organizational standards, with clinical studies to support recc
- Level E: Theory based evidence, expert opinion, case reports
- Level M: Manufacturer’s Evidence

From American Association of Critical Care Nurses (AACN).

Step 3: Evaluation/Summary

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Nesbit and Adesope, (2006)

- 55 studies, meta-analysis
- Articles on mapping vs. lecture, text reading, recall, comprehension, lists, outlining, discussion, summarization, verbal ability (high and low), problem solving, prior knowledge (high and low), media/cues, self study, animated text, and relationships
- Effect size varies dependent on comparison learning strategies, but overall concept mapping is more effective for retention and transfer. Effective for varied educational levels, subjects and settings.
- Concept mapping (CM) more effective for retention than studying text passage, lists and outlines
- Preconstructed maps better for lower verbal proficiency and no advantage for those with high verbal proficiency

Nesbit and Adesope, (2006)

- Addresses the following research questions:
  - comparison of mapping to other learning strategies
  - effects of studying maps vs. other learning strategies materials
  - effects of concept-mapping in different knowledge domains, educational levels and instructional design
  - concept maps & central knowledge, detailed knowledge, knowledge transfer, learning skills, & attitudes towards learning
  - Effects related to concept maps & collaborative, cooperative learning
  - Levels of verbal skills and previous knowledge affect learning with concept maps
  - Analysis of concept mapping effect size

Lin, Han, Pan & Chen, (2015)

- Qualitative, personal reflections, Taiwan
- Year 1 nursing students in 2 year program
- Reflection papers
- Coded files; qualitative content analysis, separated into several steps, read for whole meaning, read for key words relating to CT, CM and Q&A, preliminary analysis, discuss common view, separate and code. Criteria for rigor utilized
- Students felt ↑ confidence and transitioned to CT.
- Case Studies (CS) acted as stimulator for CM and Q&A.
- CS bridge knowledge to clinical. CS encourages reflection and questioning.
Lin, Han, Pan & Chen, (2015)

- CS expands thoughts and motivate to become a self-directed learner.
- CM broadens considerations & different perspectives, problem solving, bridges knowledge, novices learn logically, creates anxiety, helps understand complex health problem.
- Utilizing CM, Q & A, and CS ↑ CT.
- Team interaction improves CT.
- Identifies weakness.
- Q & A allow questioning/upper level. Asian culture of respect for expert/authority.


- Controlled trial
- Control group: established case-based teaching concept of disease and clinicopathological correlation. Concept maps after test.
- Study group: established teaching method with concept maps developed by IHMC concept maps tools. Several iterations. Converted into incomplete testable maps with nodes. Available online. Feedback and a copy of the correct concept map given to students.

Popil, (2011) Promotion of critical thinking by using case studies

- Expert opinion
- Literature review
- Strength of case studies, limitations of case studies, CS for problem solving, CS for CT.
- Case studies helpful per student, promotes CT, promote problem solving, active learning.
- No evidence, but would check out references for more studies. Definitions, significance to education, active teaching strategy.
A “solution”

- Pain Management Services sponsored Pain Awareness event. “Pharmacology wheel” was the most popular attraction.
- Therefore decided to modify this tool to address pain management education in new graduate residency program.

Case study development

- Two brief case studies and questions per category were developed collaboratively with the Pain Resource Nurse group, accreditation, APNs, and professional development.
- Pertinent clinical issues related to the aforementioned topics.
- Discussion points (questioning) are dependent on the case study and the general topic.
- Discuss rationale for choices or solutions.
- Discuss resources available.
Covered Topics on Comfort Wheel

- Pain assessment/reassessment
- Pharmacological interventions
- Nonpharmacological interventions
- Documentation
- Ethical considerations
- Regional blocks
- Controlled analgesia
- Regulatory considerations
- Barriers
- Special considerations

Potential threads for discussion

- Pain type
- Treatment of different pain types
- Assessment/reassessment
- Barriers, Beliefs, Attitudes, unit and individual RN practices
- Resources
- Communication skills (CHCO endorses SBAR and CUS)
- CHCO policies
- Difficult situation management (parents or health care providers)
- Multimodal interventions
- Pertinent positives & negatives
- Safety, documentation, regulatory considerations
- Biopsychosocial model

Using the comfort wheel

- Divided the new graduate residency nurses into smaller groups.
- Approach is group dependent. Some groups are competitive and like using buzzers when a group has the answer, but other times the moderator selects the group.
- Spin the wheel and category is selected! Case study shared.
- Group discusses their answer, considerations or request more information.
- All perspectives are welcome.
- Institutional policies and resources reinforced.
- Moderators include APNs and RNs (Pain Resource Nurses, professional development, accreditation, and clinical practice specialists)
Case Study - Assessment

AZ is a 7 y.o. male with Down Syndrome and Autism who had a perforated appendix and had an appendectomy. He arrives on the floor at midnight and PACU reports that he had a rFLACC score of 8/10 initially and Fentanyl was given about 11pm and the epidural solution with 0.2% ropivacaine, 3 mcg/ml of hydromorphone was started @ 6 ml/hr about the same time. He weighs 30 kg. Pain team has ordered acetaminophen, hydromorphone IV for breakthrough pain, ketorolac, ondansetron, nalbuphine, diazepam, diphenhydramine and naloxone.

Assessment discussion

From your initial comprehensive assessment, the nurse concludes this child has several risk factors that would predispose him to respiratory depression.

- Speculate what those risk factors might include?
- The nurse decides to give hydromorphone IV for breakthrough pain. When and what do you reassess?
- When do you assess his pain?

Barriers Section

DR is a 16 year old male who is post op day 1 from a cardiac procedure. When giving report the night nurse reports that she did not give any pain medication to a 16 year old male of Northern European descent because the patients’ pain goal was a 3/10 on the verbal scale, he rates his pain as 3/10, and he did not want any medication. The oncoming nurse is very upset and states that you just need to give the pain medication every 3 hours in the first 24 hours.

- As the night nurse how do you respond?
- What concepts of the bio-psych-social model are involved?
- What concepts are involved related to ethics?
Special considerations

• Is an 18 yo with ALL, Cystic Fibrosis, has a fungal infection in his spinal fluid & blood, is starting to go into renal, respiratory and liver failure, has chest pain and is now intubated. The family and patient have decided to extubate and a DNRA is in place.

• How do you feel giving a larger than usual Fentanyl dose ordered by the PICU intensivist before extubation?
• Beliefs, attitudes, ethical structure for making decisions, Codes of Conduct

Million $$$ questions for pain management

• How do we best accommodate different learning styles?
• How do we measure critical thinking?
• What does the evidence tell us?
• Are there cost associated with the solutions?
• Who are the content experts?
• What is the most efficient method?
• Did we make a difference?

Costs

• Time
• Board / Graphic placards
• Buzzers
• Rewards: candy, CHCO articles
• PRN reps & APNs time and commitment
• Measurement: tool selection and analysis
• Coordination with Nursing Professional Development and Nursing Management related to time spent assisting with teaching.
Evaluations

Data not available yet.

Possible Measurement Plan-quality project related to critical thinking & retention.

- Assessment tools pre and post
- Develop Pain Bundle
- Audit charts (utilizing PRN reps) related to medication and intervention choices), appropriate scale usage, assessment and reassessment.
- Survey or interviews with staff nurses about critical thinking related to pain, barriers to appropriate pain relief, knowledge of the policies and pain management concepts.
- Possibly have new graduates bring a brief case study to class and spend time developing a concept map after our presentation utilizing the biopsychosocial pain model.

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Recognize, Celebrate & Reward

- Competitions between the nursing units related to documentation of interventions or completion of pain knowledge and critical thinking assessment tool.
- Prizes more consistently.
- Utilize and reward the Pain Resource Nurse representatives more through CHCO rewards and recognition program.
Possible next steps

• Revise the case studies
• Complete a comprehensive literature search for an assessment tool for pain critical thinking or develop one.
• Assess pain knowledge prior to pain education and 3-6 months after pain education in nurse residency program (quality study)
• Consider the inclusion of concept mapping to assist and guide learners and preceptors in teaching or training new graduates & new employees
• Consider a two tiered approach to new graduate learning and new employee learning based on foundational knowledge assessment

Next steps (Continued)

• Extend case study education to new hires and current staff in quarterly updates.
• Create monthly case studies that are disseminated either through Pain Resources Nurses (PRN) or nursing professional development
• Explore interdisciplinary education with other health care disciplines
• Employ more inclusive teaching strategies for all learning styles in all pain education.
References


References

Gratitude & Support

- Pain Resource Nurse Group at CHCO
- Joan Rand, RN, PRN representative
- Professional Development at CHCO (Donnya Mogenson and Ciara Culhane)
- Chris Peyton, Clinical Practice Specialist for the Heart Institute at CHCO
- Ben Bernier, Pain & Sedation specialist at CHCO
- Sheryl Kent, PhD, Mentor, support and encouragement
- Pain Management Services at CHCO
- Pain Steering Committee at CHCO

Reach for the Sky: Questions?