Evidence-based Practice in Forensic Nursing: A Collaborative Effort
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Objectives

• Discuss the collaborative Evidence-based practice (EBP) project between baccalaureate nursing students and nursing clinicians in a community hospital setting.

• Determine the best practice to identify trace DNA using an alternate light source (ALS) versus the Wood’s lamp in sexual assault forensic examinations.
Background

Forensic clinicians should address both legal and medical needs of sexual assault victims to provide the best patient care.

Ability to correctly identify and collect DNA evidence improves patient outcomes and prosecution rates.
Alternate Light Source

- 365nm
  (250mW)
- 455nm
  (3000mW)
Alternative Light Source

Light is energy

Wave theory: light energy moves through space and each specific color of light has a wavelength (like the ocean...distance between wave peaks)
Fluorescence: an optical phenomenon wherein a material emits light in response to external stimulus. A specific color or group of color is released when material is bombarded with light from another part of the color spectrum.
Frequencies
Practice issue

Alternate light sources may be useful as a tool in conjunction with patient history to the collection of routine swabs for locating trace DNA evidence on sexually assaulted patient

Current practice is inconsistent in the use of a Wood’s lamp versus other alternate light sources to identify potential DNA evidence
Collaboration

- Identify nursing clinicians interested in EBP project by e-mail blast
- Present didactic class to nursing clinicians before the semester begins
- Present didactic classes on EBP to nursing students as a regular class session
- Group nursing students according to clinical interest
Collaboration

- Identify the problem and narrow the practice question using the PICO framework
- Discuss the reference list and prioritize the most relevant literature
- Develop practice recommendations based on the strength and quality of the evidence
- Present a poster of each project.
JHN Evidence-based Practice Conceptual Model

Practice

Internal Factors
- Cultural Environment
- Equipment/Supplies
- Staffing Effectiveness
- Standards

External Factors
- Accreditation
- Core Measures
- Legislation
- Licensing
- Standards
- Regulations
- Magnet

Research
- Experimental
- Quasi-experimental
- Non-experimental
- Qualitative

Non-Research
- Organizational experience
  - Quality improvement
  - Financial data
- Clinical expertise
- Patient preference

Education

Research

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Evidence Based Practice (EBP) Process

Practice Question, Evidence, Translation (PET)
EBP – The Process

How do I construct an answerable question?

Try PICO approach*

- **P** – Patient, population or problem
  (age, sex, patient setting)
- **I** – Intervention (treatment,
  medications, education, diagnosis)
- **C** – Comparison with other
  treatments (may not always be
  applicable)
- **O** – Outcome (anticipated)

*Richardson et al. (1998)
Practice Question

- P - Reported sexual assault patient
- I - Use of Wood’s lamp/alternate light source
- C - Comparison between Wood’s lamp and alternate light source
- O - Positive identification of trace biological evidence
Practice Question

Does the Wood’s lamp/alternate light source positively identify trace biological evidence containing DNA on patients reporting sexual assault?

What is the best alternate light source to identify trace biological evidence containing DNA?
Key Words
- Evidence-based practice
- Alternate light source
- Forensic nursing
- Collaboration
- Nursing education

Data Sources
- PubMed
- CINAHL
- National Clearing House Guidelines
- Google Scholar
- National Criminal Justice Reference Service
## Results

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Key Findings

- Wood’s lamp ineffective at distinguishing semen from other stains
- Optimal fluorescence of semen at longer wavelengths: >450nm
- Best to rely on victim’s account when collecting swabs: ALS should be used as an adjunct tool
- Education improves accuracy of identifying semen with ALS
1. Eliminate use of the Wood’s lamp
2. Purchase an ALS that provides appropriate wave length to detect DNA
3. Educate forensic nurse clinicians on use of ALS and its advantages and limitations
4. Conduct more research
Translation

• Apply for grant for new alternate light source
• Develop new policy
• Educate forensic nurses
• Compare data from crime lab to determine if use of ALS improved confirmation of trace DNA
Conclusion

Innovative strategy to benefit both nursing students and nursing clinicians

Reduction of anxiety for clinicians and students in completion of EBP project

Practical use of an academic exercise: exercise can actually be translated into clinical practice
“This was a win-win opportunity, the SAFE team could find the answer to our question with the help of the students and the students were exposed to forensic nursing and practice issues”

Emily Huggins, RN, BSN, MHA, SANE-A, SANE-P
Sexual Assault Forensic Examiner
Program Coordinator
“At the beginning of the project I was a little apprehensive to the project and how much our research would actually help to change protocol and your procedure at York Hospital. But after we met and we had done some research, I truly enjoyed doing the project and learning about the subject as a whole.............”

“I actually think this project gave me a new interest in SAFE nursing and that I will look into it when I step out into the real world.”

Mary Kathleen Berease

York College of Pennsylvania Nursing Major
“I think it’s a very useful exercise to bring students and nurses together in the conduct of EBP. Projects with focused, narrow questions are easier to complete. I see it as a ‘win-win.’ Nurses are able to identify meaningful practice issues and students learn the value of basing their practice on strong evidence.”

Linda Pugh, PhD, RNC, CNE, FAAN, Professor
NUR 314 Research and Professional Nursing Practice
York College of Pennsylvania
“What a great experience for our students to partner with working nurses on real clinical projects! The students benefit and patient care benefits and the nurse’s commitment to lifelong learning and professional growth is renewed.”

Deborah Barton, MS, RN
Nursing Laboratory Coordinator
York College of Pennsylvania
References


References


References


• Morris, A. (n.d.). What is fluorescence and how do the lights work. Not published


