Empowering Patients to Reduce Lumbar Puncture Associated Spinal Headaches

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Introduction
- Post-lumbar puncture headache is a common complication of a lumbar puncture procedure
- Worsens when in an upright position
- Headache is alleviated when lying down
- Resolves within one week
- Most commonly prescribed treatments are often ineffective

Rationale
- Lack of knowledge about risk, prevention, and treatment among persons having a lumbar puncture
- Most commonly prescribed treatments are often ineffective
- Nurses have contact with patients having a lumbar puncture and can provide patient education to improve outcomes

Methods
- Systematic review of the research literature
- Databases used: CINAHL complete, Medline complete, and Health Source: Nursing/Academic Edition.
- 41 total reviews and studies included

Objectives
- Determine risk factors for developing post-lumbar puncture headaches (PLPH)
- Determine interventions to prevent PLPH
- Determine interventions to treat PLPH
- Develop nurse and patient education materials

Results
- Risk factors that increase headache incidence:
  - Low body mass index
  - Female
  - Age: younger than 30 years old
- Effective prevention interventions:
  - Smaller gauge needles (i.e. 25 gauge)
  - Atraumatic needles (pencil-point or Whitacre)
  - Less CSF fluid removed
- Treatments that made a minimal difference:
  - Increasing fluid intake
  - Prolonged periods of rest
  - Administering intravenous caffeine
- Treatments that were most effective:
  - Blood patch
  - Certain medications such as morphine, aminophylline, dexamethasone, cosyntropin, pregabalin

Strengths and Limitations
- Strengths:
  - Strong support for use of atraumatic needles
  - Moderate support for smaller needles and less CSF removal
- Limitations:
  - Studies had methodological limitations
  - Difficult to deduce conclusions across studies
  - Weak support for risk factors and treatment interventions except blood patch

Outcomes
- Created a patient education brochure and an online nursing continuing education program
- Writing a systematic review of the research literature article for submission to a nursing professional journal
- Presenting a poster at a national nursing honor society conference

Risk Factors

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<tr>
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<th>Young Age (&lt; 30 y/o)</th>
<th>Female (gender)</th>
<th>Low Body Mass Index</th>
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Prevention

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<tr>
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<th>Atraumatic vs. Traumatic Needle</th>
<th>Size (gauge) of Needle</th>
<th>Smaller CSF Collection</th>
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