Chronic pain in pregnant women: Are they undertreated?

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Conflict of Interest Disclosure

- Pamela Mellin – No conflict of interest.

Objectives

At the end of this presentation, the participant will be able to:
- Identify the frequency of chronic pain in pregnancy.
- Discuss the impact of the perinatal nurses’ knowledge on intent to medicate pregnant women with chronic pain.
- State two nursing implications to improve the pain management of pregnant women with chronic pain.
Background

- Every patient with pain has the right to be treated with respect, dignity, and high quality pain management (Olivier, et al., 2012).
- Barriers to pain management include:
  - Negative attitudes of healthcare providers toward patients with chronic pain
  - Lack of knowledge about pain and pain management
  - Fear of encouraging addiction (Brennan, Carr, and Cousins, 2007).

Chronic Pain

- Pain that lasts beyond the normal time of healing or occurs in diseases in which healing does not take place.
- Changes the way that the nervous system functions:
  - Increased sensitivity to pain
  - Decreased inhibition of pain sensation

(Grieve & Schultewolter, 2014)

Incidence

- Chronic pain affects 100 million adults in the United States at a cost of over $635 billion dollars annually (Gaskin and Richard, 2012).
- 5 million reproductive age women experience chronic pain (Soni, 2011).
- 14 - 30% of pregnant women fill a prescription for an opioid during pregnancy (Ailes, et al., 2015).
- 0.6% of pregnant women use opioids for one month or longer (Kellogg, Rose, Harms, & Watson, 2011).
Physiologic Changes of Pregnancy
- Blood volume increases by 50%
- Heart Rate increases
- Cardiac Output increases by 50%
- Respiratory rate increases
- Decreased functional residual capacity
- Glomerular Filtration Rate increases by 50%
- Increased serum calcium and phosphate levels

Physiologic Changes of Pregnancy
- Increasing rate of drug metabolism as pregnancy progresses
- Fetal-placental circulation
  600 – 700 ml / minute
- Relaxin loosens musculoskeletal system
- Weight gain of 25- 35 pounds
- Fat storage in preparation for breast milk production

Impact of Pain on Pregnancy
- Excess catecholamine production
  Tachycardia
  Tachypnea
  Hypertension
  Decreased placental blood flow
  Intrauterine growth restriction of fetus
- Increased ADH, Renin, Aldosterone & Angiotensin
- Immune suppression & Increased risk of infection
Impact of Pregnancy on Chronic Pain

- Chronic pain is often exacerbated by the normal changes of pregnancy
- Back pain
  - Pelvic girdle pain
  - Renal pain
- Ulcerative colitis /Chron's Disease
- Headaches
- Fibroids

Pain in Pregnancy:
A Medication Challenge

What is Safe to Use?

Analgesics

- Acetaminophen - Safe in pregnancy
  - Short term use
  - Concerns for chronic use
  - Fetal liver
  - Fetal kidney
  - Toxicity
- Aspirin – Not recommended in pregnancy
  - Risk of bleeding
  - Miscarriage
Non-steroidal anti-inflammatory drugs

- Ibuprofen, indomethacin, ketorolac, naproxen
- Decrease amniotic fluid volume
- Affect fetal renal function
- Premature closure of Ductus Arteriosis
- Alters blood flow across mid-cerebral artery of fetus
- Short term use in 2nd trimester (48 hours)
- Do not use in 3rd trimester

Antidepressants

- Must weigh risk : benefit ratio
- SSRI (serotonin reuptake inhibitors) Pregnancy Category C
  - sertraline (Zoloft)
  - fluoxetine (Prozac)
  - citalopram (Celexa)
- Avoid paroxetine (Paxil) in pregnancy – Category D
- Use with caution in 3rd trimester due to an association with persistent pulmonary hypertension

Anti-epileptics

- Pregabalin (Lyrica) – Pregnancy Category C
  - May be associated with birth defects
  - May be risks of fetal toxicity
  - May cause fetal intrauterine growth restriction
- Gabapentin (Neurontin) – Pregnancy Category C
  - No increased risk of malformations
  - May be an increased risk of premature delivery
  - May be an increased risk of low birth weight
  - Risk of Neonatal Abstinence/Withdrawal
Alternative Therapy
- Physical therapy
- Massage
- Hydrotherapy
- Abdominal sling support
- Transcutaneous Electrical Nerve Stimulation Controversial

Opioids
- Hydrocodone, hydromorphone, morphine, oxycodone
- Pregnancy Category C
- Acceptable for short term use in pregnancy
- Risk of Neonatal Abstinence/Withdrawal with prolonged exposure during pregnancy
- By 3rd trimester will need 2 - 3 X non-pregnant dose
- Extended release opioids cannot be used in the 3rd trimester

Societal Attitudes
- Society views the fetus as precious cargo.
- It is the mother’s responsibility to protect the fetus from all potential harm.
- Any medication is considered a risk to the fetus.
- Pregnant women may be denied adequate pain management due to potential harm to the fetus (Vermani, Mittal, & Weeks, 2009).
Purpose

The purpose of this project was to investigate whether perinatal nurses’ intent to medicate pregnant women with chronic pain is affected by:

- Knowledge of pain
- Attitudes of perinatal nurses toward patients with chronic pain who are pregnant.

Research Questions

- Is the perinatal nurse’s intent to medicate a pregnant woman with chronic pain related to knowledge of pain?
- Is the perinatal nurse’s intent to medicate a pregnant woman with chronic pain related to attitudes toward a pregnant woman with chronic pain?
- Is the perinatal nurse’s intent to medicate a pregnant woman with chronic pain related to demographics?

Methodology

This was a quantitative, cross-sectional correlation study that used a pencil and paper survey instrument to measure attitudes, knowledge about pain, and intent to administer pain medication to pregnant women with chronic pain.

- The independent variables were perinatal nurses’ attitudes, knowledge of pain, and demographics.
- The dependent variable was the perinatal nurse’s intent to medicate a woman with chronic pain who is pregnant.
Inclusion Criteria

- Registered nurses employed in labor and delivery, mother-baby, neonatal intensive care unit/special care nursery, or the prenatal clinics of one of four identified hospitals in a hospital system located in northern New Jersey.
- At least 18 years of age or older
- Fluent in the English language.
- 1 year of nursing experience

Instrument

- The Knowledge and Attitudes Survey Regarding Pain developed by Ferrell and McCaffery (2014) was combined with a case presentation of a pregnant woman with chronic pain.
- Each participant survey generated a knowledge score, an attitude score, and intent to medicate score.

Instrument

- Higher knowledge scores indicate increased knowledge of pain.
- The higher the attitude score, the more positive a person’s attitude toward the patient.
- Intent to medicate was determined by a positive score on the last two questions on the survey.
Data Collection

- IRB approval was obtained from both William Paterson University and Atlantic Health System.
- Permission was obtained from the nurse manager to meet with and contact the nursing staff of each identified perinatal unit.
- Standard strategies were used to protect participant privacy

Sample Participants

- 105 / 350 possible surveys were returned for a return rate of 30%.
- 5 surveys had to be excluded from data analysis.
- Data was analyzed on the remaining 100 surveys

Description of Sample

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N</th>
<th>%</th>
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<tbody>
<tr>
<td>Gender - Female</td>
<td>99</td>
<td>99</td>
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<tr>
<td>Nursing Unit - Labor and Delivery</td>
<td>58</td>
<td>58</td>
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<tr>
<td>Nursing Unit - Mother Baby</td>
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<td>25</td>
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<tr>
<td>Nursing Unit - NICU/SCN</td>
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<td>17</td>
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<td>Education - Diploma</td>
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<td>10</td>
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Age and Experience

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<th>Range</th>
<th>SD</th>
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<tbody>
<tr>
<td>Age</td>
<td>47.37</td>
<td>24-69</td>
<td>11.81</td>
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<tr>
<td>Years Nursing Experience</td>
<td>21.88</td>
<td>1-50</td>
<td>13.49</td>
</tr>
<tr>
<td>Years Maternity Experience</td>
<td>18.04</td>
<td>&lt;1-45</td>
<td>11.64</td>
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Knowledge, Attitude, and Intent to Medicate Scores

<table>
<thead>
<tr>
<th>Score</th>
<th>Maximum Possible Score</th>
<th>M (Range)</th>
<th>SD</th>
<th>% Scoring &gt; 80% Correct/Positive</th>
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<tbody>
<tr>
<td>Knowledge</td>
<td>31</td>
<td>22.73 (15-31)</td>
<td>3.1</td>
<td>25</td>
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<tr>
<td>Attitude</td>
<td>14</td>
<td>10.39 (6-14)</td>
<td>1.9</td>
<td>31</td>
</tr>
<tr>
<td>Intent to medicate</td>
<td>2</td>
<td>0.9 (0-2)</td>
<td>0.9</td>
<td>41</td>
</tr>
</tbody>
</table>

Impact of Education

- Single Sample t-Test
- Educational level had a statistically significant impact on Knowledge scores
  \( (M=22.73, SD=3.1, t (99) =73.31, p<0.001) \)
- Attitude
  \( (M=9.55, SD=1.7, t (99) =55.73, p<0.001) \)
- Intent to medicate
  \( (M=0.9, SD=0.96, t (99) =9.39, p<0.001) \)
Nursing Unit and Intent to Medicate

- A single sample t-test determined the impact of nursing unit on intent to medicate to be statistically significant ($p<0.001$)
- Labor and Delivery nurses were most likely to medicate (50%)
- NICU/SCN nurses were least likely to medicate (23.5%)

Analysis of Variance

- No statistically significant difference in knowledge, attitude, or intent to medicate based on level of care.

Knowledge ($F= 1.777$, $df=3,92$, $p=0.157$)
Attitude ($F= 0.783$, $df=3,92$, $p=0.506$)
Intent to medicate ($F= 0.875$, $df=3,97$, $p=0.457$)

Pearson Correlation - Knowledge

- Knowledge was positively correlated with Attitude ($r(100)=0.743$, $p<0.001$) and Intent to medicate ($r(100)= 0.463$, $p<0.001$)
- Knowledge was not correlated to age, years of nursing experience, or years of maternity experience.
Pearson Correlation- Attitude

- Attitude was positively correlated with knowledge ($r(100)=0.743, p<0.001$) and intent to medicate ($r(100)=0.583, p<0.001$)
- Attitude was inversely correlated with years of nursing experience ($r(100)=-0.236, p=0.018$)
- Attitude was not correlated to age or years of maternity experience

Pearson Correlation- Intent to Medicate

- Intent to medicate was positively correlated with knowledge ($r(100)=0.463, p<0.001$) and attitude ($r(100)=0.583, p<0.001$)
- Intent to medicate was not correlated to age, years of experience in nursing or maternity

Conclusions

- Perinatal nurses have a lack of knowledge about pain and need to be educated on this topic.
- Increased knowledge about pain is correlated with a more positive attitude toward pregnant women with chronic pain.
- Positive attitude toward pregnant women with chronic pain was correlated with an increased intent to medicate.
Importance for Nursing

- This project provided new information about perinatal nurses’ knowledge about pain, attitude and intent to medicate pregnant women with chronic pain.
- There was no literature on this topic so the project provides new information on this practice issue.
- This exploration of nurse attitudes, knowledge of pain, and intent to medicate may impact pain management in pregnant women.

Implications for Care

- Identified a lack of knowledge about pain in perinatal nurses.
- This lack of knowledge may alter the perinatal nurses’ attitude and intent to medicate a pregnant woman with chronic pain.
- Pregnant women with chronic pain may be inadequately medicated.
- The management of chronic pain in pregnancy is complex and challenging.

Actions to Improve Care

- Provide education to perinatal nurses about chronic pain in pregnancy.
- The development of practice guidelines in the care of pregnant women with chronic pain is indicated to provide an advanced level of clinical judgment in the delivery of evidence-based care to improve patient outcomes.
Limitations

- Findings are limited to perinatal nurses in suburban New Jersey and may not be extrapolated to other settings or geographic areas.
- 54% of participants were employed in the regional center and 58% of the participants were from labor and delivery. This may have skewed the results.

- Survey participation was voluntary. The findings may reflect a self-selection bias.
- There was no response from nurses in the prenatal clinic. This leaves a significant gap in information.

Future Research

- This study should be replicated in urban hospitals and hospitals in other geographic locations.
- This study should be replicated with perinatal nurses in the out patient prenatal setting.
Future Research

- Additional research is needed to confirm that an education program about pain will increase perinatal nurses’ knowledge of pain, increase attitude scores and increase the perinatal nurses’ intent to medicate a pregnant woman with chronic pain.

QUESTIONS?

References


