Influence of Biomedical Risk Factors on Chronic Low Back Pain among Women
Jennifer Kawi, PhD, MSN, APRN, FNP-BC, CNE

Conflict of Interest Disclosure
- Primary Author:
  - Jennifer Kawi; No conflict of interest
- Co-authors:
  - Elsa Tesfagiorgis, BSN, RN; No conflict of interest
  - Komal Sood, BS Psychobiology, Medical Student; No conflict of interest
  - Joshua Meneses, DO; No conflict of interest

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Educational Objectives

• At the conclusion of this activity, participants should be able to:
  • Determine the correlations between opioid use, BMI, and pain-related variables among women with chronic low back pain.
  • Examine the significant predictors of multisite pain among women with chronic low back pain.
  • Recommend targeted strategies to assist healthcare providers in chronic low back pain management of vulnerable populations toward minimizing pain care disparities and undertreatment.

Chronic Low Back Pain (CLBP)

• Definition: Pain in the low back for most of the days in the past 6 months and persisted for at least 3 months\(^1\)
• Management: Multifactorial pharmacologic and non-pharmacologic
• National Statistics\(^2,3\):
  • increasing prevalence at 29.1%
  • disability at 53-57.5%
  • healthcare costs at $100-200 billion annually

Other Relevant Statistics

• 30.4% among women vs 25.4% among men\(^2\)
• Statistics among low socioeconomic group (25 years and over):\(^2\)
  • High school or GED = 34.8%
  • No high school or GED = 34.6%
  • Below 100% poverty level = 36.8%
• 28.1% among Blacks vs 29.9% among whites\(^2\)
• 27.4% among Hispanics vs 29.4% among Non-Hispanics\(^2\)
• Pain care disparities and undertreatment
Opioid Use

• Current state of science on opioid use:\(^5\)
  • Women are more likely to (compared to men):
    • Have chronic pain
    • Be prescribed pain relievers
    • Be given larger doses
    • Have longer duration of use
  • At least 5.4 women per 100,000 died from opioid overdose in 2015
    • Largest at age 45-54 years at 11.6 per 100,000 individuals

Other Biomedical Risk Factors (cont.)

• BMI and pain:
  • Meta-Analyses\(^5\) = Overweight and obesity increase low back pain risk

• Multisite pain\(^6\)
  • pain impacting 6-10 anatomical sites were reported frequently
  • female sex was strongly associated with 1-3 pain sites

• Other variables (demographics, pain intensity, duration, number of pain treatments, number of medical conditions, sleep, physical function)

Methods

• Descriptive, correlational and predictive, cross-sectional study design
• IRB-approved
• Pain Center with N = 50 adult females with CLBP
• Inclusion/Exclusion criteria
• Self-report questionnaires, medical records
• SPSS 22
### Descriptive Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Range</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>30-64 years</td>
<td>50</td>
</tr>
<tr>
<td>Race and ethnicity</td>
<td>NA</td>
<td>54% Black, 34% White; 10% Hispanics</td>
</tr>
<tr>
<td>Pain intensity</td>
<td>4-10</td>
<td>7.86</td>
</tr>
<tr>
<td>Duration of pain</td>
<td>1-28 years</td>
<td>11.5 years</td>
</tr>
<tr>
<td>Number of pain sites</td>
<td>1-7 anatomical sites</td>
<td>3.64</td>
</tr>
<tr>
<td>Amount of opioid use</td>
<td>10-243.8 MME</td>
<td>58.67 MME</td>
</tr>
<tr>
<td>BMI</td>
<td>16.4-54.2</td>
<td>32.02</td>
</tr>
</tbody>
</table>

### Socioeconomic Data

- 54% were high school graduate, attained their GED, or less
  - 35% with some college or trade school, no degree
- 67.3% had less than 15K annual gross household income
  - 20.4% had 15K to 25K
- 38% were disabled due to CLBP
  - 24% were disabled for other reasons
- 10% worked part time
  - 6% “other,” the rest are not working
- 98% have insurance
- 74% rated their overall health from poor to fair
  - 26% from good to very good

### Significant Correlation Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlation Coefficient</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MME and duration of CLBP</td>
<td>r = .341</td>
<td>p = .018</td>
</tr>
<tr>
<td>BMI and pain intensity</td>
<td>r = .295</td>
<td>p = .038</td>
</tr>
<tr>
<td>BMI and sleep</td>
<td>r = .424</td>
<td>p = .002</td>
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</tbody>
</table>

Number of pain sites with several correlates
Regression Results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Beta Coefficient</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>$B = -2.838$</td>
<td>$p = .007$</td>
</tr>
<tr>
<td># of medical conditions</td>
<td>$B = 2.732$</td>
<td>$p = .009$</td>
</tr>
<tr>
<td># of pain treatments</td>
<td>$B = 2.269$</td>
<td>$p = .029$</td>
</tr>
<tr>
<td>Physical Function</td>
<td>$B = -2.079$</td>
<td>$p = .044$</td>
</tr>
</tbody>
</table>

- Significant regression equation was found ($p = .000$) with adjusted $R^2 = .435$

Discussion and Implications

- Unhealthy and modifiable risk factors (e.g., high opioid use, BMI)
- Targets for improving pain management especially among women
- Multisite pain increases risk and vulnerability
- Socioeconomic status, pain care disparities, and undertreatment

References

References (cont.)


