Retroactive Analysis of Advanced Spine Center Patient Care and Outcomes in Correlation with the 9-item Patient Health Questionnaire Scores

Gabrielle Barraco
Gabrielle.Barraco@lvhn.org

Bridgit O’Brien
Bridgit.Obrien@lvhn.org

Kara Spanswick MHA
Lehigh Valley Health Network, Kara.Spanswick@lvhn.org

Joann Gilmore RN
Lehigh Valley Health Network, Joann.Gilmore@lvhn.org

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Gabrielle Barraco, Bridgit O'Brien, Kara Spanswick, MHA, Joann Gilmore, R.N.

Lehigh Valley Health Network, Allentown, Pennsylvania

Introduction

- Objective: To determine if there is a correlation between PHQ-9 scores, initial pain levels, and treatment success rates for patients with spinal pain and injuries
- The Advanced Spine Center (ASC) is a comprehensive care unit of Lehigh Valley Health Network (LVHN) that treats and cares for patients with spinal pain
- Recent studies have shown that psychological health has a high influence on pain, disability, and effectiveness of treatments on spine patients
- The Oswestry Disability Index (OSW) is the measure for lower back functional capacity and Neck Disability Index (NDI) is the measure for cervical spine functional capacity
- The Visual Analog Score (VAS) is a survey where patients mark the intensity and location of the pain
- Depression is measured using the 9 Item Patient Health Questionnaire (PHQ-9)

Methods

- Collected data from 546 patients, at intake and again at 3 months, 6 months, and 12 months after treatment, who were diagnosed and treated through the Advanced Spine Center from 1/23/2012 through 4/23/2018 for low back or neck pain
- Patients were organized and compared based on their level of depression measured by the PHQ-9 and whether they had back or neck pain

<table>
<thead>
<tr>
<th>Number of Patients</th>
<th>Minimal (0-4)</th>
<th>Mild (5-9)</th>
<th>Moderate (10-14)</th>
<th>Moderate-Severe (15-19)</th>
<th>Severe (20-27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>with Back Related Pain</td>
<td>202</td>
<td>91</td>
<td>59</td>
<td>30</td>
<td>21</td>
</tr>
<tr>
<td>Number of Patients with Neck Related Pain</td>
<td>79</td>
<td>34</td>
<td>15</td>
<td>10</td>
<td>5</td>
</tr>
</tbody>
</table>

Results

- Patients who had more severe forms of depression had higher overall levels of pain and disability than patients with mild to no depression
- The patients with a more severe degree of depression were seen to have a shortened term of success with treatment than patients with mild to no depression
- These trends were seen in both neck and back pain patients

Conclusion

- The finding that patients with elevated PHQ-9 scores were recorded to have higher overall levels of pain suggests that chronic pain was a cause of the elevated PHQ-9 scores
- Patients suffering from a higher level of depression had lessened long term success with their treatments. These trends could be due to symptoms of depression, negative patient thinking and attitude, limiting the long term positive effect of the treatment

LIMITATIONS:

- Method in which the surveys were given limited data collection. Less than 3% of patient data over the last 8 years from the ASC was usable
- Lack of PHQ-9 surveys over the 12 months as PHQ-9 is only recorded on intake, therefore it is unknown if PHQ-9 scores would change after pain treatment

RECOMMENDATIONS:

- Utilize a Behavioral Health Specialists or external therapy practice to help patients with elevated depression levels
- Educate physicians on the existing Chronic Pain Management sessions set up by Stephen Denton LCSW
- Record PHQ-9 at same increments as OSW, NDI, and VAS and study trends on PHQ-9 score changes post-treatment
- ASC sends the surveys out through email or at follow up appointments as part of the pre-appointment paperwork

References:


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