THE EFFECT OF AN ENHANCED RECOVERY PROTOCOL IN BARIATRIC SURGERY POSTOPERATIVE PAIN

BRITTANI SEAGREN, DNP, APRN-AP, FNP-C, RN-BC

CONFLICT OF INTEREST DISCLOSURE

• THE AUTHOR OF THIS PRESENTATION (BRITTANI SEAGREN) HAS NO CONFLICT OF INTEREST TO DISCLOSE

OBJECTIVES

• 1) COMPREHEND THE CHALLENGES OF MANAGING PAIN IN A POST-OPERATIVE BARIATRIC SURGERY PATIENT
• 2) HAVE BASIC KNOWLEDGE OF WHAT THE ENHANCE RECOVERY PROTOCOL IS AND HOW IT IS THEORETICALLY SUPPORTED FOR USE IN A BARIATRIC SURGERY PATIENT
• 3) GAIN INSIGHT IN THE IMPACTS OF THE ADOPTION OF THE ENHANCED RECOVERY PROTOCOL ON PAIN MANAGEMENT IN BARIATRIC SURGERY PATIENTS
• 4) BE ABLE TO DISCUSS THE EFFECTS OF THE ADOPTION OF THE ENHANCED RECOVERY PROTOCOL IN BARIATRIC SURGERY PATIENTS.
INTRODUCTION

- Pain is a common experience in the hospital
- Closely tied to patient satisfaction
- Difficult to manage in bariatrics
  - Variability in perception
  - Chronic pain conditions
  - Issues with opioids

Enhanced Recovery Protocol

- Multimodal
  - Demonstrated to have lower pain scores in abdominal surgery
  - Research supported as safe in bariatrics

PROJECT PURPOSE

- Determine effectiveness of enhanced recovery as a pain management tool in bariatrics

PICO QUESTION:

- Does the utilization of an enhanced recovery protocol in laparoscopic bariatric surgery patients reduce pain scores and improve patient satisfaction with pain control in the immediate postoperative period in comparison to those utilizing traditional pain management techniques?

OUTCOMES

- Proposed outcomes of study
  - Enhanced recovery protocols with pain management in laparoscopic bariatric surgery populations will result in significantly lower pain scores compared to traditional pain management protocols, as evidenced by postoperative patient pain ratings on the numerical pain scale.
  - Bariatric surgery patients using enhanced recovery protocols will have significantly higher satisfaction regarding pain control, in comparison to traditional pain management protocols.
  - There will be increased understanding of the relationship between patient-related pain scores and pain characteristics (gender, age, body mass index, length of stay, and surgery type).
REVIEW OF THE LITERATURE

- Poor management of postoperative pain in bariatrics has led to increases in chronic opioid use.
  - Rabek et al. (2013) — increase in chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — chronic pain.

- Enhanced recovery effective at controlling pain.
  - Rabek et al. (2013) — effective at controlling pain.
  - Rabek et al. (2013) — effective at controlling pain.
  - Rabek et al. (2013) — effective at controlling pain.

- Increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.

- Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.

- Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.
  - Rabek et al. (2013) — increased chronic opioid use, including in patients who were not on preoperative opioids.

METHODS

- Retrospective chart review.
  - Rabek et al. (2013) — retrospective chart review.
  - Rabek et al. (2013) — retrospective chart review.
  - Rabek et al. (2013) — retrospective chart review.

- Laparoscopic bariatric patients from 10/01/2015-09/31/2016.

- Enhanced recovery patients: 10/01/2016-03/31/2016.
  - Rabek et al. (2013) — enhanced recovery patients: 10/01/2016-03/31/2016.
  - Rabek et al. (2013) — enhanced recovery patients: 10/01/2016-03/31/2016.
  - Rabek et al. (2013) — enhanced recovery patients: 10/01/2016-03/31/2016.

- Collected pain scores, gender, BMI, age, length of stay, and surgery type.
  - Rabek et al. (2013) — collected pain scores, gender, BMI, age, length of stay, and surgery type.
  - Rabek et al. (2013) — collected pain scores, gender, BMI, age, length of stay, and surgery type.
  - Rabek et al. (2013) — collected pain scores, gender, BMI, age, length of stay, and surgery type.

- HCAHPS data analysis.
  - Rabek et al. (2013) — HCAHPS data analysis.
  - Rabek et al. (2013) — HCAHPS data analysis.
  - Rabek et al. (2013) — HCAHPS data analysis.

- Scores specifically from bariatric patients for quarters 3 and 4 of 2015 and quarters 1 and 2 of 2016.
  - Rabek et al. (2013) — scores specifically from bariatric patients for quarters 3 and 4 of 2015 and quarters 1 and 2 of 2016.
  - Rabek et al. (2013) — scores specifically from bariatric patients for quarters 3 and 4 of 2015 and quarters 1 and 2 of 2016.
  - Rabek et al. (2013) — scores specifically from bariatric patients for quarters 3 and 4 of 2015 and quarters 1 and 2 of 2016.

- Statistical analysis via SPSS.
  - Rabek et al. (2013) — statistical analysis via SPSS.
  - Rabek et al. (2013) — statistical analysis via SPSS.
  - Rabek et al. (2013) — statistical analysis via SPSS.

TRADITIONAL RECOVERY PROTOCOL

- Dilaudid (Hydromorphone) patient-controlled analgesia titrated by nursing, based upon patient assessment.
  - Rabek et al. (2013) — dilaudid (hydromorphone) patient-controlled analgesia titrated by nursing, based upon patient assessment.
  - Rabek et al. (2013) — dilaudid (hydromorphone) patient-controlled analgesia titrated by nursing, based upon patient assessment.
  - Rabek et al. (2013) — dilaudid (hydromorphone) patient-controlled analgesia titrated by nursing, based upon patient assessment.

- Nutritional supplements (food) every eight hours.
  - Rabek et al. (2013) — nutritional supplements (food) every eight hours.
  - Rabek et al. (2013) — nutritional supplements (food) every eight hours.
  - Rabek et al. (2013) — nutritional supplements (food) every eight hours.

- Pain management in PACU.
  - Rabek et al. (2013) — pain management in PACU.
  - Rabek et al. (2013) — pain management in PACU.
  - Rabek et al. (2013) — pain management in PACU.

- Pain management in PACU.
  - Rabek et al. (2013) — pain management in PACU.
  - Rabek et al. (2013) — pain management in PACU.
  - Rabek et al. (2013) — pain management in PACU.

- Nausea management in PACU.
  - Rabek et al. (2013) — nausea management in PACU.
  - Rabek et al. (2013) — nausea management in PACU.
  - Rabek et al. (2013) — nausea management in PACU.

- Pain protocol to prevent postoperative nausea.
  - Rabek et al. (2013) — pain protocol to prevent postoperative nausea.
  - Rabek et al. (2013) — pain protocol to prevent postoperative nausea.
  - Rabek et al. (2013) — pain protocol to prevent postoperative nausea.

- Diet limited to nothing by mouth until 0600 on post-operative day one when ice chips were allowed. Then the diet was advanced per surgeon order.
ENHANCED RECOVERY PROTOCOL

- Pre-operative: ice bags, music, and guided imagery
- Intra-operative: video games, music, or music therapy, and guided imagery
- Pain Management:
  - Pre-operative: meloxicam and gabapentin
  - Intra-operative: ketamine, ofirmev (IV acetaminophen), and magnesium sulfate
  - PACU pain relief with IV fentanyl
  - Floor pain relief with scheduled ofirmev until postoperative day one with a transition to scheduled oral tylenol; scheduled IV toradol for six doses; IV buprenex as needed for severe breakthrough pain; and as needed oral oxycodeine and tramadol added postoperative day one
- Nausea managed via the usage of as needed Zofran, Phenergan, and/or Compazine, which is similar to the traditional protocol
- Venous thrombus emboli prevention achieved with subcutaneous heparin
- Patients receive protonix daily for gastric ulcer prevention, similar to the traditional protocol
- Patients also placed on a modified clear liquid diet on the day of surgery, then progressed to a modified, high-protein full liquid diet

RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Traditional Recovery</th>
<th>Enhanced Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ave. Age</td>
<td>47.85 (17-79)</td>
<td>45.9 (18-74)</td>
</tr>
<tr>
<td>% Female</td>
<td>85.9 (113)</td>
<td>80.4 (123)</td>
</tr>
<tr>
<td>% Male</td>
<td>14.4 (19)</td>
<td>19.6 (30)</td>
</tr>
<tr>
<td>BMI</td>
<td>44.02 (18-70)</td>
<td>44.08 (20-69)</td>
</tr>
<tr>
<td>% Lap sleeve</td>
<td>37.1 (49)</td>
<td>37.9 (58)</td>
</tr>
<tr>
<td>% Lap Roux-en-Y</td>
<td>48.5 (64)</td>
<td>50.3 (77)</td>
</tr>
<tr>
<td>% Lap DS</td>
<td>14.4 (19)</td>
<td>11.8 (18)</td>
</tr>
<tr>
<td>N</td>
<td>132</td>
<td>153</td>
</tr>
</tbody>
</table>

PAIN AND LENGTH OF STAY DATA

<table>
<thead>
<tr>
<th></th>
<th>Traditional Recovery</th>
<th>Enhanced Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of Stay (ave)</td>
<td>4.40</td>
<td>3.73</td>
</tr>
<tr>
<td>Pain Score (ave)</td>
<td>4.1</td>
<td>3.88</td>
</tr>
</tbody>
</table>

\* p-value < 0.05
### DEMOGRAPHIC INFORMATION AND ITS RELATIONSHIP TO PAIN

<table>
<thead>
<tr>
<th></th>
<th>Traditional p</th>
<th>Enhanced p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-1.063</td>
<td>.290</td>
</tr>
<tr>
<td>BMI</td>
<td>-1.628</td>
<td>.106</td>
</tr>
<tr>
<td>Length of Stay</td>
<td>2.040</td>
<td>.043*</td>
</tr>
</tbody>
</table>

### GENDER AND SURGERY TYPE DIFFERENCE

<table>
<thead>
<tr>
<th>Gender</th>
<th>Traditional Recovery p</th>
<th>Enhanced Recovery p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.976</td>
<td>0.319</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Surgery Type</th>
<th>Traditional Recovery p</th>
<th>Enhanced Recovery p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.963</td>
<td>3.816</td>
</tr>
</tbody>
</table>

### HCAHPS DIFFERENCES

<table>
<thead>
<tr>
<th></th>
<th>T p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>-1.105</td>
</tr>
<tr>
<td>Pain Always Controlled</td>
<td>-0.074</td>
</tr>
<tr>
<td>RN helped with pain</td>
<td>-2.120</td>
</tr>
</tbody>
</table>
AVERAGE HCAPS BETWEEN GROUPS

<table>
<thead>
<tr>
<th></th>
<th>Traditional Recovery</th>
<th>Enhanced Recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>70.625</td>
<td>76.625</td>
</tr>
<tr>
<td>Pain Always Controlled</td>
<td>63.75</td>
<td>64.935</td>
</tr>
<tr>
<td>RN helped with pain</td>
<td>77.5</td>
<td>88.31</td>
</tr>
<tr>
<td>Statistic</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

DISCUSSION

- HOMOGENOUS SAMPLE POPULATION
- TRENDS OF FINDINGS
- UNSUSPECTED FINDINGS
- POSSIBLE LIMITATIONS
  - PROTOCOL INITIATION
  - STATISTI LIMITATIONS

ACKNOWLEDGMENTS

- PROJECT FACULTY ADVISER: DR. LINDA HUGHES
- ASSISTANCE FOR HOSPITAL IRB: DEB CONOLY
- STAFF OF NEBRASKA METHODIST HOSPITAL 8 SOUTH UNIT


• CENTERS FOR MEDICARE AND MEDICAID. (2003). HCAHPS THREE-STATE PILOT STUDY ANALYSIS RESULTS. RETRIEVED FROM: ... Y-INITIATIVES-PATIENT-ASSESSMENT-INSTRUMENTS/HOSPITALQUALITYINITS/DOWNLOADS/HOSPITAL3STATE_PILOT_ANALYSIS_FINAL200512.PDF.


