Effectiveness of Nursing Education on Early Mobilization of Transcatheter Aortic Valve Replacement (TAVR) Patients

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INTRODUCTION / BACKGROUND

- Aortic stenosis (AS) is the most common valvular heart disease in the US, affecting older adults
- Decrease in AS mortality is attributed to an increase in TAVR procedures.
- TAVR is a minimally invasive procedure with faster recovery.
- Prolonged patient immobilization post-procedure leads to poor patient outcomes (DVT, Pressure ulcers, Delirium).
- Evidence-based Nursing Clinical Practice Guidelines (CPGs) to improve mobility post-TAVR have not been systematically implemented.
- Registered Nurses (RNs) are an important workforce for initiating early mobilization of TAVR patients.

AIMS

- To provide a 12-week educational intervention and determine its effectiveness on nurses’ knowledge, attitudes, and behaviors regarding early mobilization of TAVR patients.
- Nurses’ adherence to CPGs of early mobility protocol.

METHODS

- The study was performed in a tertiary care academic facility.
- Setting: 34-bed Cardiac Step-Down Unit; 38 Full-time RNs, 23 participated in the study; Tertiary-care Academic facility; >1000 beds on the East Coast.

INSTRUMENTS

- John Hopkins Medicine Patient Mobilization Attitudes and Beliefs Survey
- 26 item Likert scale
- Nurses’ documentation in Electronic Medical Record (EMR)

RESULTS

Table 1: Change in Nurses’ Knowledge, Attitudes, and Behaviors Regarding Early Mobilization

<table>
<thead>
<tr>
<th>Domain</th>
<th>Pre-Test Median (IQR)</th>
<th>Post-Test Median (IQR)</th>
<th>p-value(^1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge</td>
<td>15 (3)</td>
<td>20 (4.5)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Attitude</td>
<td>29 (6)</td>
<td>42 (10.50)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Behavior</td>
<td>42 (8.50)</td>
<td>54 (9.5)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

\(^1\) Wilcoxon Rank Sum Test

Table 2: Nurses’ Adherence Rate with Early Mobilization of TAVR Patients

<table>
<thead>
<tr>
<th>Nurse Adherence</th>
<th>Pre-Intervention n (%)</th>
<th>Post-Intervention n (%)</th>
<th>p-value(^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>29 (52%)</td>
<td>50 (89%)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>No</td>
<td>27 (48%)</td>
<td>6 (11%)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

\(^2\) Pearson’s Chi-squared test

CONCLUSION

- 4 knowledge, 9 attitudes, 13 behavior questions using validated survey showed a significant increase in median values post-educational intervention.
- 12-week educational intervention improved nurses’ adherence to early mobilization protocol measured by documentation in the EMR.
- Educational protocols are key for improving nurses’ knowledge, attitudes, and behaviors related to TAVR patient early mobilization.

LIMITATIONS

- Voluntary nature of QI project
- All RNs were not educated via the study intervention
- Relatively small sample size (n=23 RNs)
- Study was not based on a match-design

DISCUSSION

Future Directions:

- Elucidate specifically how changes in nurse knowledge, attitudes, and behaviors due to nurse-based intervention protocols lead to early mobilization and reduced length of stay in post-TAVR patients.
- Reproduce this project with a larger sample size.
- Examine the direct effects of early mobilization on patients’ hospital length of stay.
- Perform a matched design, grouping participants and comparing their results pre- and post-intervention.

Implications:

- A patient-centered approach is driven when nurses apply evidence-based practice by implementing standardized protocols, which can lead to better patient outcomes.

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CONTACT INFO

REFERENCES