The Effect of a Didactic Educational Program with Practical Application on Nursing Knowledge and Empowerment in Antibiotic Stewardship

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ABSTRACT

- Antimicrobial use is a crucial element of patient care but their overuse and misuse have detrimental effects including the growing problem of antimicrobial resistance (AMR).
- Nurse empowerment and engagement has resulted in improvements in many quality initiatives including enhanced patient safety in the areas of Central Line Associated Bloodstream Infections (CLABSI), Catheter-Associated Urinary Tract Infections (CAUTI) and pressure injuries (Carter, 2016).
- Enhancing nurse empowerment in AS may be effective in reducing antibiotic misuse.
- The purpose of this study is to implement an educational program engaging nurses in AS activities and determining the effect of this educational intervention on the knowledge and empowerment of staff nurses.
- The theoretical framework for this study is the work of Donabedian (2005) on the quality of health care which is divided into structure, process and outcome measures

METHODS

- This study involves Registered Nurses (RNs) working in the Surgical Intensive Care Unit (SICU).
- The SICU is a 17 bed critical care unit caring for surgical patients with severe illness, complex surgeries or traumatic injuries.
- Unit located in a 1,000 bed acute care hospital in urban Philadelphia.
- Inclusion criteria: staff RNs employed in SICU at TJJH full or part time for 3 months or more and who provide direct patient care.
- Exclusion criteria: SICU nurses who are on medical or other leaves of absence, SICU nurses who decline to participate in the educational program and associated surveys, Advanced Practice Nurses (APN’s) and RNs who are not dedicated SICU staff nurses.
- A survey measuring knowledge & psychological empowerment was administered before and after the educational intervention.
- Descriptive statistics to describe the sample and paired t-test to examine differences in knowledge and empowerment after the training intervention were computed.

RESULTS

- The educational intervention & data collection was completed with 44 nurses for a participation rate of 85%.
- The educational program engaging nurses in AS activities resulted in a statistically significant (p < 0.01) increase in AMR knowledge and empowerment level of staff nurses.

Table 2. Comparison of Knowledge and Empowerment Scores

<table>
<thead>
<tr>
<th></th>
<th>Pre Score</th>
<th>Post Score</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Score</td>
<td>1.9 (4.3)</td>
<td>23.6 (3.3)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Empowerment Score</td>
<td>2.1 (5.6)</td>
<td>28.6 (2.2)</td>
<td>&lt;0.01</td>
</tr>
</tbody>
</table>

Table 1. Participant Demographics

<table>
<thead>
<tr>
<th>Age</th>
<th>Shift</th>
<th>Experience</th>
<th>Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 5</td>
<td>11%</td>
<td>1%</td>
<td>Diploma/ASN 9%</td>
</tr>
<tr>
<td>6 to 10</td>
<td>30%</td>
<td>8%</td>
<td>BSN        82%</td>
</tr>
<tr>
<td>11 to 15</td>
<td>27%</td>
<td>8%</td>
<td>MSN        7%</td>
</tr>
<tr>
<td>16 to 20</td>
<td>6%</td>
<td>7%</td>
<td>Doctorate  2%</td>
</tr>
<tr>
<td>21 to 30</td>
<td>11%</td>
<td>8%</td>
<td>Diploma/ASN 9%</td>
</tr>
<tr>
<td>&gt;30</td>
<td>16%</td>
<td>5%</td>
<td>Diploma/ASN 9%</td>
</tr>
</tbody>
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REFERENCES

- The Milbank Quarterly, 89(4), 462-497.
- American Journal of Infection Control, 46(5), 492-497. doi: 10.1016/j.ajic.2017.05.011