Persistent Misconceptions About Mutations Among Graduate Nursing Students

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Persistent Misconceptions About Mutations Among Graduate Nursing Students

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INTRODUCTION

Genetic information is influencing health care.1 Nurses need a foundation in the basics of genetics. 1 Genetic competencies for nurses are identified. 2-4 Leaders called for research on genetics in nursing education.5 The purpose of this study was to determine the ongoing misconceptions among a group of graduate nursing students regarding genetic mutations.

METHODS

Prospective cohort design
• Public university students
• Nursing anesthesia program
• Fall 2014 to Fall 2016
Program entry and exit testing knowledge of genetic mutations
• Anonymous survey
• 3 Items of basic knowledge regarding Mutations from the Genomic Nursing Concept Inventory - 2011 Beta Version (GNCI)6
Limited genetic content in curriculum
T-test for differences in entry and exit scores
Examined items with > 30% incorrect on exit surveys
Most frequent responses = misconceptions

RESULTS

Table 1. Persistent Misconceptions vs Correct Response

<table>
<thead>
<tr>
<th>Rank</th>
<th>Incorrect</th>
<th>Misconception</th>
<th>Correct Response</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>68</td>
<td>54</td>
<td>A group of people with a named gene mutation, such as BRCA1, are likely to have identical mutations (23% chose this response) are likely to vary based on dominant or recessive form of the gene (23% chose this response)</td>
</tr>
<tr>
<td>2</td>
<td>57</td>
<td>42</td>
<td>The most common way for a mutation to contribute to disease is by increasing the rate of DNA replication (39% chose this response)</td>
</tr>
<tr>
<td>3</td>
<td>36</td>
<td>31</td>
<td>In an individual with a named gene mutation, such as BRCA1, in which cells would the mutation be found? her breast cells (15% chose this response)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>A group of people with a named gene mutation such as BRCA1 are likely to have unique mutations</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>The most common way for a mutation to contribute to disease is by directing the formation of altered proteins or unexpected amounts of proteins</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>In an individual with a named gene mutation, such as BRCA1, in which cells would the mutation be found? all her cells that contain a nucleus</td>
</tr>
</tbody>
</table>

IMPLICATIONS

When addressing graduate nursing students, educators should not assume incoming students have a strong foundation regarding genetic mutations. Educators should examine the current curriculum for opportunities to begin with the basics and develop teaching strategies to address the common persistent misconceptions.

CONCLUSIONS

Identified ongoing misconceptions among graduate nursing students regarding basic knowledge of genetic mutations for every GNCI mutations item.
Given the lack of a statistically significant change in entry and exit scores and the high percentage of incorrect exit scores, the curriculum needs revision.

REFERENCES