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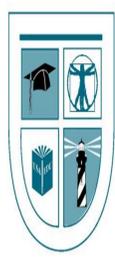
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Persistent Misconceptions About Mutations Among Graduate Nursing Students

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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

- Participants
 - 28 students program entry
 - 26 students program exit
- All three of the items categorized as Mutations were missed by more than 30% of the students.
- Of the three items, exit scores improved on average for all three items; none were statistically significant.
- Overall, knowledge of Mutations increased from 46% to 58%, ($t_{52} = 1.29, p = .20$).

RESULTS

Table 1. Persistent Misconceptions vs Correct Response

| Rank | Incorrect | | Misconception | Correct Response |
|------|-----------|------|---|---|
| | Pre | Post | | |
| 1 | 68 | 54 | 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) | A group of people with a named gene mutation such as BRCA1 are likely to have unique mutations |
| 2 | 57 | 42 | The most common way for a mutation to contribute to disease is by increasing the rate of DNA replication (39% chose this response) | The most common way for a mutation to contribute to disease is by directing the formation of altered proteins or unexpected amounts of proteins |
| 3 | 36 | 31 | 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) | 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 |

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.

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