Reviewer's report

Title: A web-based simulation of a longitudinal clinic used in a 4-week ambulatory rotation: a cohort study

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Reviewer: Dale Alverson

Reviewer's report:

The authors report on a web-based tool, Continuity of care online simulations (COCOS), designed for use by internal medicine residents in a one-month, postgraduate clinical rotation in endocrinology. These brief rotations may not provide the experience of managing a patient with a chronic illness. Their program is an interactive tool that simulates the continuing care of any patient with a chronic disease. They report that residents who used COCOS during the rotation had significantly higher improvements in test scores. Test score improvements were most pronounced for less commonly seen conditions. The authors report that residents rated COCOS very highly, recommending its use as a standard part of the rotation and throughout residency. They feel that the Web-based format is adaptable and allows the creation of cases for most chronic medical conditions.

Title/Abstract: Satisfactory

Introduction: Satisfactory

Methods:

A diagram algorithm of the control and intervention group analysis may be useful in better understanding the methods used for experimental design and comparison of the two groups. For example, the control group was recruited during 9 months prior to enrolling residents for the intervention groups and it would be useful to see the differences in the approach in comparing the two groups.

Related to the Power Analysis, the authors calculated a sample size of 16 resident participants. If this is the sample size needed for an alpha error of .05 and power of .80, was the relatively small ultimate sample size of 10 in the control group and 13 in the intervention group (23 total participants) sufficient and did the sample size differences (43% vs. 57%) influence the outcomes?

Results:

Change “patients” to “residents” in first paragraph of the results section on page 11.

Inter-group differences in post-rotation scores and changes in scores are in the figure.
Figure shows a negative change in post-rotation scores for the control group in Graves Disease, Managing treatment, and Thyroid nodules. For what reason to the authors speculate that scores worsened after the rotation in the control group? For example, the drop in scores post-rotation related to Thyroid Nodules was significant in the control group *(.008) which should raise concerns. Also, what was the p value for the drop in scores for “Managing Treatment” in the control group?

Table 3 rows are shifted down between Type II Diabetes and Thyroid nodules and Polycystic Ovarian Syndrome and need to be readjusted. Table 3 only shows the drop in scores for Graves disease and Thyroid nodules and there is no notation for the “B” components of the Figure in Table 3. It would be useful if those components were included in Table 3 for completeness and to aid the reader in comparing Table 3 to the Figure.

How many questions related to COCOS were given to intervention group and are they all reflected in Table 4 or only selected ones that show high Likert scores?

Discussion and Conclusion:
It would be helpful if the authors would indicate the reasons for non-participation or completion of the post-rotation test and questionnaire in the control and intervention groups. Why did the one resident in the intervention group not use the program? Otherwise the discussion and conclusion sections are satisfactory.

In summary, the article is well written and organized and presents a unique and innovative method of providing residents in training with complimentary simulated scenarios for longitudinal care of patients with chronic endocrine diseases about which they may not have the opportunity to experience related to their short rotations and variable probability of being exposed to those conditions. This approach may be adaptable to other disciplines. The manuscript will need some revision before it would be acceptable for publication in the Journal.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:
I declare that I have no competing interests