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Question Formulation Skills Building among Dental Hygiene Students: Randomized Controlled Trial

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Question Formulation Skills Building Among Dental Hygiene Students

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Above: Professor and Director Christine Nathe
Left: Jon Eldredge, Professor and Evidence Based
Practice Librarian

Background

- Dental Hygiene students learn Evidence Based Dentistry skills during their second year in a competency based curriculum
- Growing dissatisfaction with PICO question formulation approach
- Dissatisfaction with PICO reflected in the literature [1-4]
- Students improved question formulation skills using new approach
- We decided to test more rigorously

Hypothesis

Dental Hygiene students oriented to the rubric and trained for 25 minutes on the FAC Question Formulation approach will score better by a statistically significant margin than students only oriented for 5 minutes on the rubric.

Methods

- Randomized Controlled Trial
- All 24 Dental Hygiene (DH) students randomized
- Students' identities concealed with 4 digit numbers
- All 24 students took pre-test on first day of class
- No statistical differences between two groups beforehand

Table One

	Control	Intervention
Males	1	0
Females	12	11
Average Age	24	24
Final Course Grade	A	A

Methods, continued

- All students introduced to FAC Question Formulation Rubric
- Intervention Group students received question formulation training and search training
- Control group received only search training
- Administered post-tests
- The instructors scored the post-tests with students' identities concealed

Results

- Maximum possible score was 50 points
- Average scores on post-test surprised us
 - Control = 41.75
 - Intervention = 43.67
- Paired t-test confirmed no statistical difference

Why did we fail to confirm
the hypothesis?

Results, continued

- Six (6) students in the Control Group scored far better compared to others in the Control Group
- We interviewed these six students
- Four (4) studied with student friends in the Intervention Group
- Intervention Group classmates taught them the FAC approach

Analysis

- Removed four (4) students who interacted with the Intervention Group
- New analysis showed:
 - Control =27.6
 - Intervention =43.67

Limitations

- Contamination in RCTs like this one always a threat [5]
- Other explanations?

Conclusion

- Dental Hygiene students oriented to the rubric and trained for 25 minutes on the FAC Question Formulation approach scored better by a statistically significant margin than students only oriented on the rubric.
- Presence of contamination requires further study to confirm hypothesis

Acknowledgement

- We appreciate our Dental Hygiene students participating in our study
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Questions?

References

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