

# Teaching Underrepresented Minority High School Students about Teaching

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## Background

- MCW and medical schools nationwide emphasize the importance of helping underrepresented minorities (URM) enter medical school as evident through the Step-Up pipeline program and similar pipeline programs at other institutions
- These pipeline programs strive to grow the interest of URM pre-med students into pursuing medical school. Nonetheless, there is a discrepancy in the diversity of physicians practicing in academic medicine.
- This project aims to teach the students enrolled in the pipeline program skills in leadership and teaching in order to encourage URM pre-med students to become leaders and improve their interest for positions in academic medicine and leadership.

## Purpose

### Question:

- Can targeted sessions about teaching improve URM high school students' interest and confidence in teaching?

### Aim:

- To analyze the students' results to a questionnaire administered before and after the three targeted sessions aimed at improving skills in teaching.

## Methods

### Education in Medicine Survey:

- A questionnaire was developed to look at several metrics that are related to URM student's interest and skill in teaching.
- The questionnaire has 19 questions that are answered on a Likert scale from 1 through 5.
- Questions were developed to correlate with six metrics that include, Interest in teaching, willingness to teach, confidence in skills in being a teacher, perception of teaching, perception of skills, and comfort in engaging in teaching.
- The same questionnaire was administered before and after the sessions and responses were anonymized.

## Methods

### Education in Medicine Sessions:

*What did the sessions focus on teaching?*

- Sessions were administered to students enrolled in the Step-Up Summer Bootcamp. These sessions were scheduled within the bootcamp.
- Three 1 hour sessions were developed. Each session focused on a central objective important to teaching and leadership.
- Objectives included working in groups to develop a presentation about a public health issue, presenting their project, and delegating roles to complete a task.

### Study Design:

- The questionnaire was administered prior to the start of the first session.
- At the conclusion of the third session, the URM students answered the questionnaire again.
- Cohort included all 14 students enrolled in the Step-Up Bootcamp.
- Students that missed a session were excluded from the data analysis.
- Data analysis conducted on student responses was done.
- A one-way MANOVA was conducted, Likert Scores were aggregated and the pre and post averages were compared.

## Results

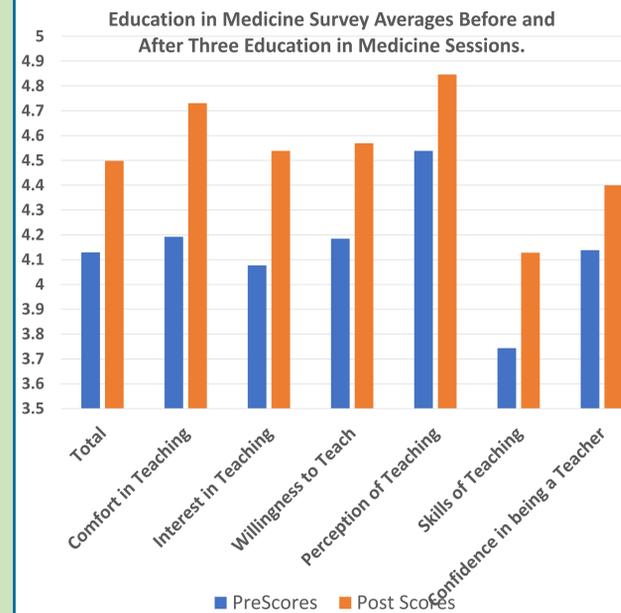
- One-way MANOVA of responses showed significant differences between pre and post response.  $P \leq 0.05$ .  $P = 0.040$
- Individual categorical responses were further sub-analyzed through paired T-test analysis with each metric having significant results ( $P \leq 0.05$ ).
- Averages in each category increased after the three sessions with the biggest increase associated with Comfort in Teaching.
- Comfort in Teaching average increased by 0.538 after the three sessions
- Perception of Teaching had the highest average after the three sessions with an average score of 4.85 the Likert Scale.

## Results

### Figures:

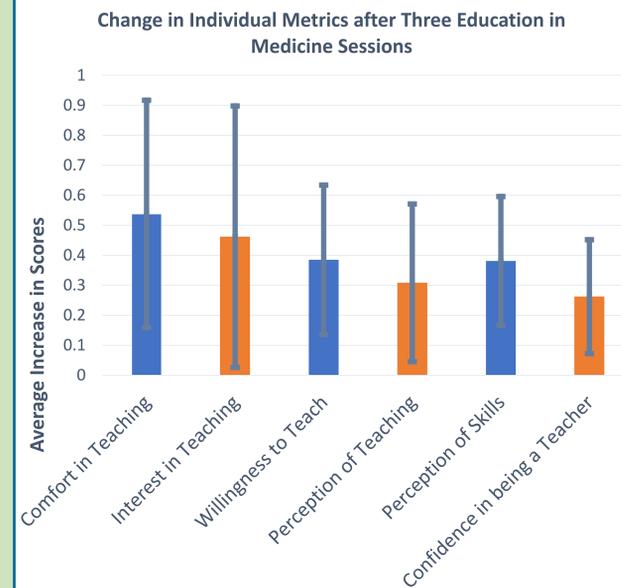
#### Figure 1: Scores Before and After Three Education in Medicine Sessions

Represents score averages in each category before and after the three sessions.



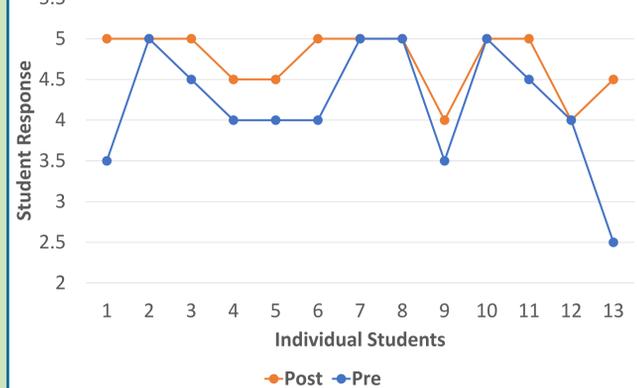
#### Figure 2: Average Change in Score After Three Education in Medicine Sessions

Represents the increase in averages in each metric following the three sessions.



## Results

### Student Responses in Comfort in Teaching Before and After Three Sessions



**Figure 3: Individualized Student Responses in Comfort in Teaching Before and After Three Education in Medicine Sessions**

## Discussion & Next Steps

- All metrics showed improvement following the three sessions
- This suggests that giving sessions to pre-med student about teaching can help URM students strive to pursue academic positions or teaching positions as they proceed through their medical training.
- Sessions about Education can help URM pre-med students pursue leadership positions and increase their interest and skills in teaching.
- A longitudinal study should be conducted to see if these sessions result in an increase in matriculation rate and if these URM pre-med students end up actually entering academic medicine compared to their counterparts.
- A limitation of this study included the small sample size. This study should be repeated with larger cohorts, possibly integrating with other Step-Up programs at MCW.

## Acknowledgements

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