The Effect of a Preclinical Disability Elective On Medical Student Awareness, Attitudes, and Clinical Competency

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Introduction

- ***One in four*** adults in the United States lives with some form of disability.
- People with disabilities are more likely to have unmet healthcare needs and experience greater barriers to care[1].
- Physician education has been identified as one way to improve health care for patients with disabilities[2-4].
- There is **no national educational competency regarding disability** to which medical schools must adhere.

What about OHSU?

- Educational opportunities on disability awareness are sparse in the OHSU School of Medicine curriculum (Clinical Skills Lab, Structural Competency program, and patient panels). A required curriculum designed to cultivate responsive providers for patients with disabilities does not exist.
- OHSU students are required to complete a series of Harvard Implicit Association Tests during their first year, one of which examines disability and inherent bias. According to data collected between 2014-2019, representing over 700 students, 78.2% of students demonstrated some degree of preference for able-bodied people[5].

Developing an understanding of the historical and social context of disability in medicine and working with people with disabilities during the early years of a physician's training could be instrumental in closing the care gap for this population. Here, we examine the effect of a new preclinical disability elective on medical student disability awareness, knowledge, and clinical skills.

Project Aims

1. ***Demonstrate need for disability education within the OHSU didactic curriculum***
2. ***Create a 10-week preclinical elective for OHSU MD students on disability awareness and clinical competency***
3. ***Conduct pre- and post- elective student surveys assessing the effect of the course on student self-reported comfort, attitudes, and clinical competency***

Aim 1: Needs-Based Assessment

Methods

- An 8-question survey was created to assess students' perceived inclusion of disability within the OHSU curriculum.
- Students indicated their level of agreement/disagreement to statements about the curriculum (example statements can be seen in Figure 1).
- The survey was created in Qualtrics and distributed via email to the entire student body in August 2021.

Results

- 234 OHSU medical students of all class years responded to the survey (35.5% of students).
- **When asked if the OHSU curriculum adequately covered disability, 87.4% disagreed** (Figure 1).
- **When asked if the OHSU curriculum prepared students to work with patients with disabilities in clinical rotations, 72.4% disagreed** (Figure 1).
- Over half of respondents reported that they would take an elective class on disability, if offered (data not shown).

Conclusions

- A majority of OHSU students did not feel that the curriculum sufficiently covered disability as a topic and did not feel adequately prepared when they entered a clinical setting.
- Students were supportive of the inclusion of more disability-related education within the curriculum.

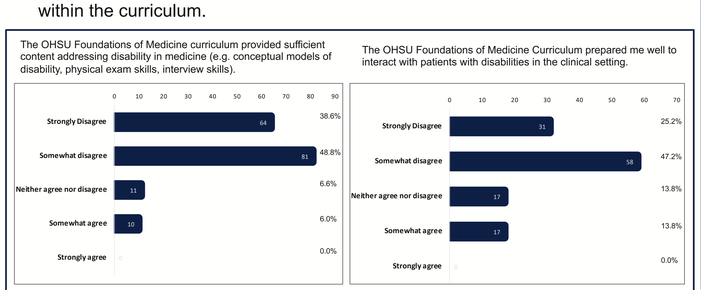
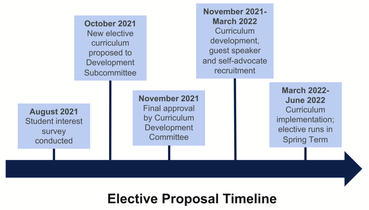


Figure 1: Student responses to a disability elective interest survey. Med25 responses and non-clinical phase students excluded.

Aim 2: Creation of the Elective

With this information, our team moved forward with a proposal for a new elective curriculum, *"Disability Awareness and Skills Development for Medical Students"*.

- **Elective structure:** Ten, 90-minute classes over a 12-week term.
- **Educators:** All class sessions taught by guest speakers, many of whom identified as persons with disabilities.
- **Elective content:** Forms of disability, social vs. medical models of disability, general disability awareness and language, clinical skills development (e.g. use of an ASL interpreter, chart notes, basic transfer training), skills practice with people with real disabilities in mock patient encounters, disability ethics, and sexual health.
- **Course assessments:** Short reflections, a final reflection, and a final creative project of the student's choosing.



Elective Proposal Timeline

Left:
A student in the elective presents her final creative project: a cross-stitched image of the iconic disability rights advocate, Judith Heumann.

Right:
Students and elective organizers gather for the final class in June 2022. Classes were a mix of virtual and in-person.

Photos used with permission and taken by OHSU Photography.

Aim 3: Evaluating the Elective

Methods

- A 16-item survey was developed using a validated tool as a template[6], and included additional statements to directly assess material covered by the course (selected statements can be seen in Figure 3).
- Students were also presented with statements related to two patient scenarios (see Figure 2 for full description).
- The survey utilized a 4-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree), with a lower score indicating a more positive attitude.
- Students completed a pre-survey during the first week of the elective, and a post-survey 12 weeks later.
- Responses were acquired through the OHSU survey platform, Qualtrics.
- Mann Whitney U non-parametric tests were performed to assess for median differences between pre- and post- survey results.

Scenario A: You enter an exam room, where you greet a middle-aged man and woman. The man tells you he is experiencing abdominal pain.

Scenario B: You enter an exam room. You greet a middle-aged man in a powerchair and a woman of similar age who stands behind him. The patient in the powerchair appears to have spasticity in all 4 limbs. He says hello, and his speech is somewhat affected, but you are able to understand him. The woman tells you that the patient is here because he is experiencing abdominal pain.

Scenario-Based Statements

1. I have had experiences similar to this scenario.
2. I would be comfortable determining how much of my questioning to direct to the man versus the woman in providing the history of the chief complaint.
3. I would be comfortable performing a physical exam on the patient.
4. I would be comfortable establishing a basic differential diagnosis for abdominal pain.

Figure 2: Scenarios and questions utilized in the student survey. Adapted from the validated survey tool created by Symons et al[6].

Results

- Nine students initially enrolled in the course, and all students completed the pre-elective survey. One student dropped the course during the approved drop period.
- All enrolled students (eight) completed the post-survey. All student survey responses were included in the final analysis.

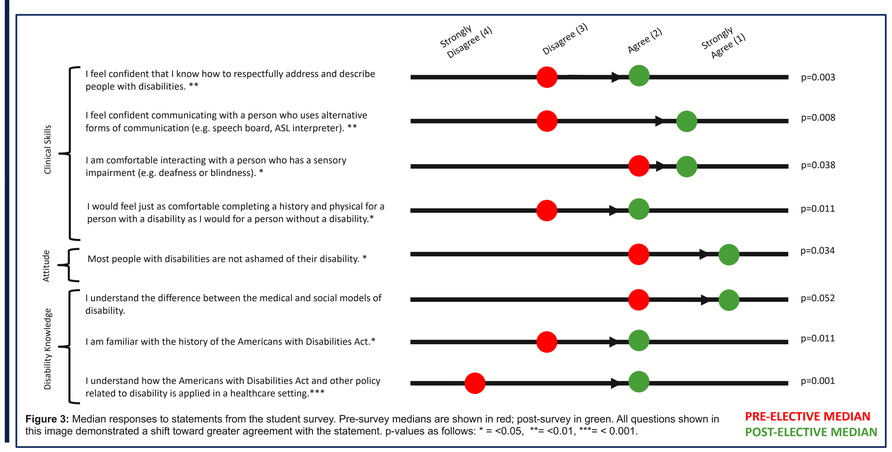


Figure 3: Median responses to statements from the student survey. Pre-survey medians are shown in red; post-survey in green. All questions shown in this image demonstrated a shift toward greater agreement with the statement. p-values as follows: * = <0.05, ** = <0.01, *** = < 0.001.

- When analyzed as a whole, there was a significant difference in median student responses between the 16-item pre- and post- surveys (pre-survey median 3 (disagree); post-survey median 2 (agree), p: 0.0001).
- The median difference illustrates a shift in student response in a direction of greater knowledge, more positive attitudes, and improved clinical skills with disability.
- When analyzed as individual questions, about half of the questions yielded significant median changes between pre- and post-surveys (Figure 3).

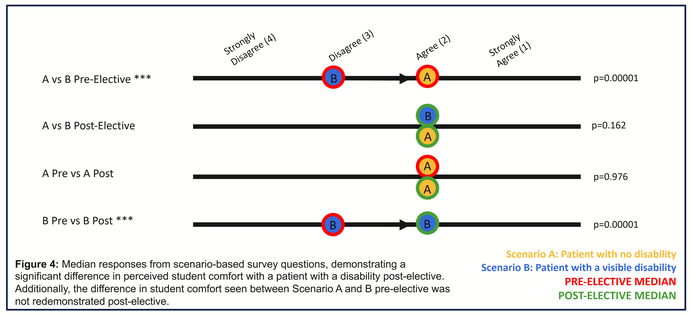


Figure 4: Median responses from scenario-based survey questions, demonstrating a significant difference in perceived student comfort with a patient with a disability post-elective. Additionally, the difference in student comfort seen between Scenario A and B pre-elective was not redemonstrated post-elective.

- Prior to taking the elective there was a significant difference in student responses between Scenario A and B. This suggested greater familiarity and comfort with performing a physical exam and establishing a differential for a patient without a visible disability (Scenario A), as compared to a patient with a visible disability (Scenario B). After taking the elective, this difference was no longer demonstrated (Figure 4).
- Student experience and comfort with Scenario B significantly increased from pre- to post-elective, while the median remained unchanged for Scenario A (Figure 4).

Discussion

Overall, our results suggest that students taking the elective "Disability Awareness and Skills Development for Medical Students" report significantly greater comfort interacting with patients with a variety of disabilities, improved confidence in their history and physical exam skills, better understanding of the ADA and its application in healthcare, and better knowledge of basic disability awareness. When presented with a scenario of a patient with a visible disability, students reported greater familiarity with the scenario, improved comfort with communicating with that patient, and improved comfort with performing a history and physical. Our results strongly support that this elective was successful in accomplishing its goals of bettering medical students' disability awareness and clinical competency.

The limitations of this study are numerous. Our sample size was small and could not adequately represent the OHSU MD student body. The sample was not random, and selection bias was introduced by nature of our course being elective. Students who chose to enroll likely demonstrated a greater degree of interest and investment in the subject than would have been the case if the course were part of a required curriculum. Additional limitations include the short-term nature of this study; we do not yet have data to support that the changes demonstrated here will persist into students' future clinical careers. Finally, this study is based entirely upon self-reported responses, which may reflect a social desirability bias.

Conclusion

Taking an elective course on disability awareness has an appreciable positive effect on medical students' self-reported comfort, attitude, and clinical competency concerning patients with disabilities. Further studies are needed to assess whether positive changes will be seen in additional cohorts and determine if such effects could last well into a students' clinical career.

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