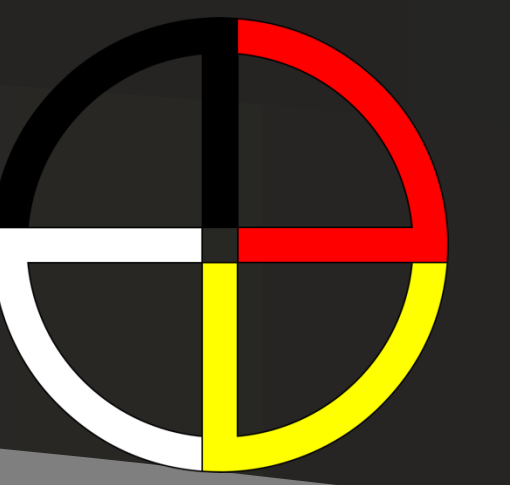


A Novel Medical School Curriculum Aimed at Discussing Indigenous Health Topics



Poster by: Mara Demuth, M.A. and Dr. Jennifer Michener

Curriculum Authors: Rita Lee, M.D., Kristin Furfari M.D., Hailey Wilson, M.D., Ryan Close, M.D., M.P.H., Christopher Jentoft, M.D., Nadia Norton, M.D., Jennifer L. Michener, M.D.

Introduction

- Native American (NA) communities experience disproportionate rates of a myriad of physical and mental health conditions including but not limited to:
 - Lower life expectancy
 - Death from heart disease
 - Diabetes mellitus
 - Lower respiratory diseases
 - Liver and kidney disease
 - Chronic pain
 - Mood disorders, PTSD, and suicidality
- It is important to consider unique risk factors and mechanisms by which some of these disparities might arise, especially considering lack of effort to do so may increase stigma and bias when working with these groups. Some of these factors include:
 - Historical trauma from shared historical experiences including forced relocation, boarding schools, loss of food sources, forced assimilation, abrupt decline in population
 - Psychosocial and economic factors including poverty, education, food insecurity, poor access to healthcare
 - Distrust of the medical community due to historical events like deliberate spread of smallpox and forced sterilizations
- This group may also have unique resilience factors that can be harnessed to mitigate disparities such as cultural connectedness which involves interest in tribe's culture, involvement in traditional activities and ceremonies, traditional spirituality, traditional language use
- The Indian Health Service (IHS) is the primary care delivery system for NAs and services approximately 2.6 million individuals across 37 states, but many medical schools neglect to discuss this health system
- Given the unique historical factors contributing to health risk in NA populations, cultural factors impacting health of NA patients, and the unique healthcare system for NA communities, there is a need for health care curriculum devoted to these topics.; however, to our knowledge, there is no published medical school curriculum dedicated to healthcare of NA populations

Study Objectives

- To develop a novel medical school curriculum for the University of Colorado School of Medicine (CUSOM) to address these gaps in knowledge
- To assess preliminary feedback from students regarding acceptability of the session and effectiveness of the curriculum in increasing perceived knowledge and attitudes/thinking aligning with the outlined learning objectives
- To use feedback for further refining and improving the curriculum

Methods

Curriculum Creation and Content

- Curriculum was created for the CUSOM Health and Society course for first-year medical students, and was written in the format of a guide for faculty small-group facilitators and designed to be a two-hour small group session
- A group of medical school faculty, NA and IHS physicians, and NA medical students worked together to create the framework and content of the sessions
- Learning objectives were written as follows:

Learning Objectives
Describe the historical trauma and structural systems that contribute to the health of NAs
Describe how generational trauma impacts health
Describe the history and current structure of the IHS
Explore ways we can begin to address social determinants of health in NA communities

- NA and IHS physician curriculum authors wrote a true, de-identified familial story through which to explore several topics including: US policy of conquest and westward expansion, treaty law and tribal sovereignty, boarding schools, Indian Child Welfare Act, IHS history and health care access, generational trauma, ACEs and health consequences, sources of resilience, and advocacy and engagement opportunities

Curriculum Implementation

- Small-group facilitators attended a one-hour training regarding the curriculum prior to the session for additional context
- Approximately 184 first-year CUSOM students attended the session and were broken into small groups of 10 students, each with a faculty facilitator and spent two-hours working through the discussion guide

Data Collection

- Data was collected as a part of a larger survey system for overall medical curriculum evaluation
- Half of students (N = 93) attending the session were randomly selected to receive three questions regarding curriculum effectiveness:
 - How effective was the session on Indigenous Health at advancing your awareness of the impact of generational trauma on health outcomes in indigenous communities? (perceived knowledge)
 - How effective was the session on Indigenous Health at broadening your thinking about strategies to address the social determinants of health for indigenous people? (perceived attitudes/thinking)
 - How effective was the session on Indigenous Health at increasing your awareness of the history and current structure of the Indian Health Service? (perceived knowledge)

- Students answered questions on a 5-point Likert scale ranging from 'not at all' to 'extremely'
- There was also an opportunity to provide free-text feedback

Analysis and Evaluation

- For Likert scale questions, number of students choosing each of the five scale options were summed and percentages of students choosing the top two responses (very or extremely effective) were calculated
- Informal content review of free-text feedback completed by one author identified common themes across the range of responses, and total number of responses fitting each theme were summed

Results

- 93 students completed the post-course questionnaire (100% response rate)
- 48% of students reported the session was very or extremely effective at advancing awareness of the impact of generational trauma on health outcomes of indigenous communities
- 50% of students reported the session was very or extremely effective at both broadening thinking about strategies to address the social determinants of health for NAs and increasing awareness of the history and current structure of the IHS

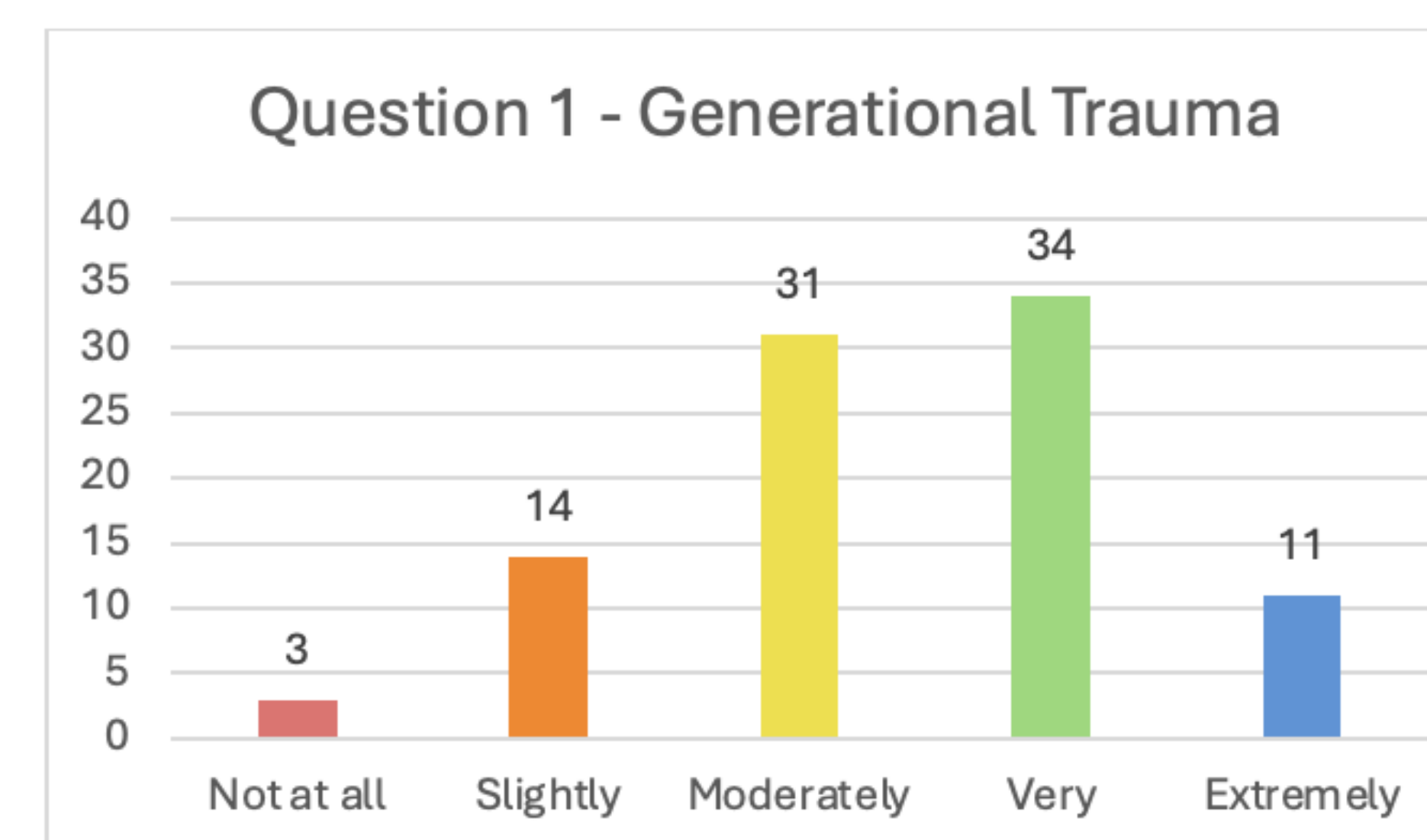


Figure 1. Total number of students responding to each option for question 1.

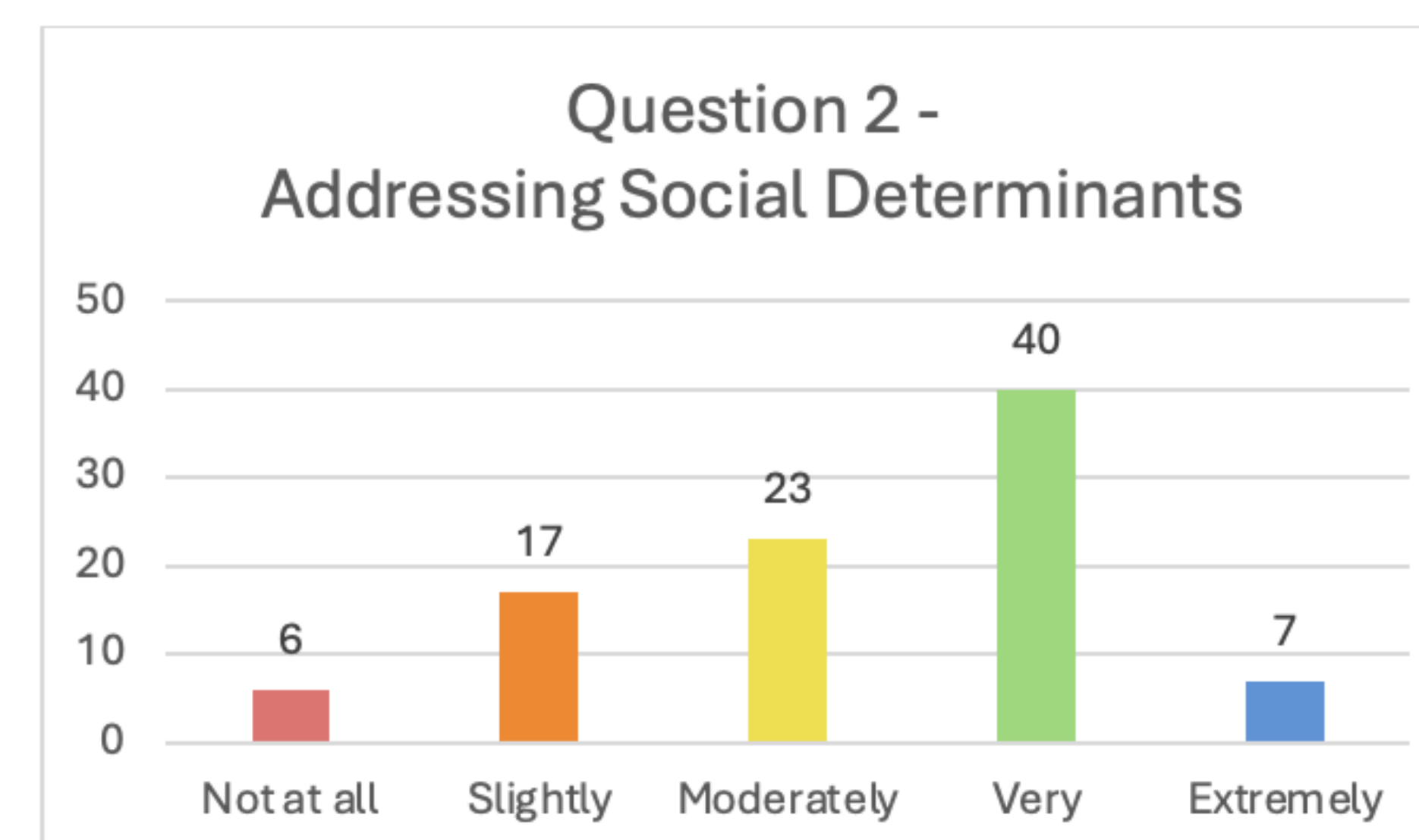


Figure 2. Total number of students responding to each option for question 2.

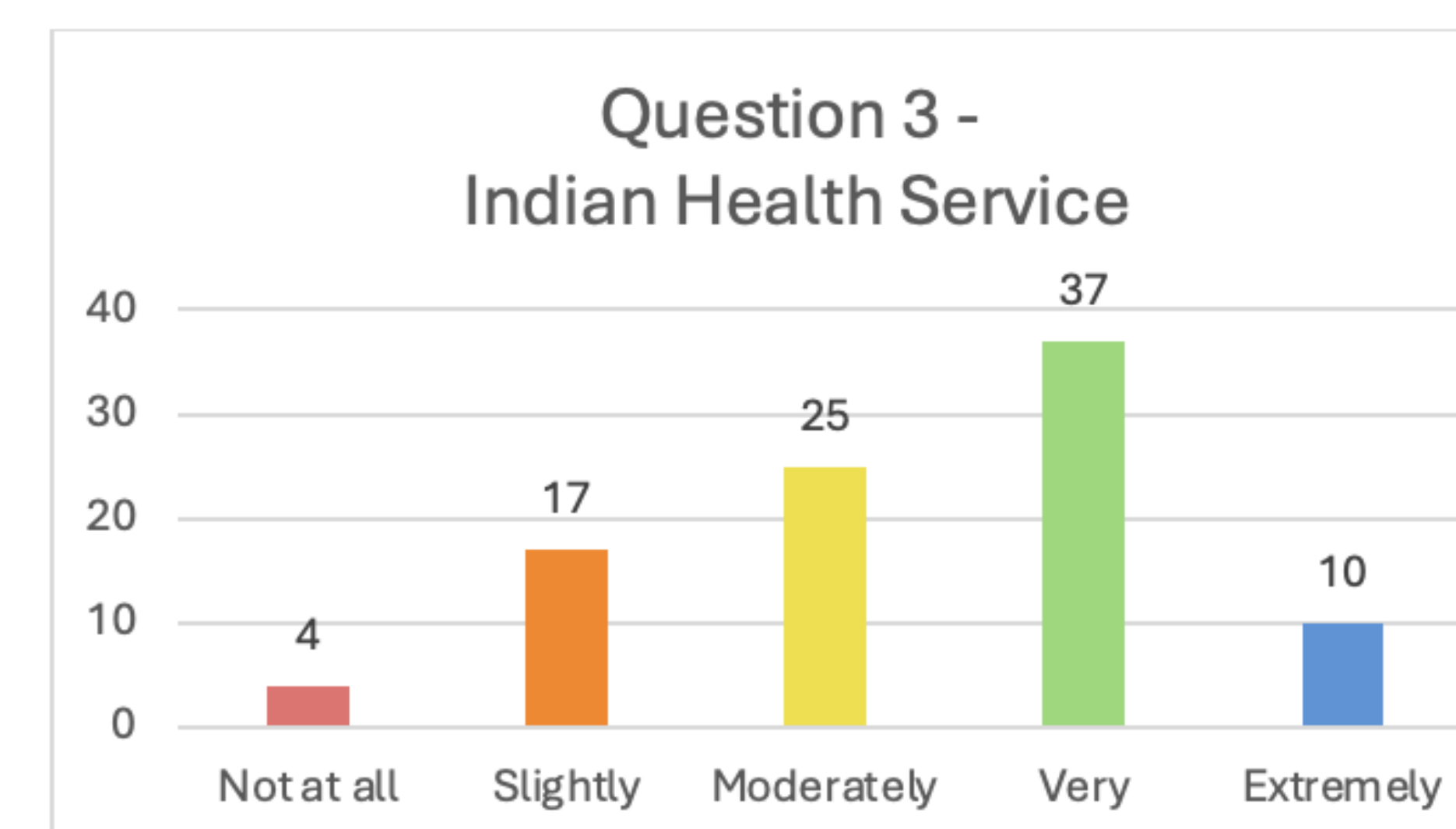


Figure 3. Total number of students responding to each option for question 3.

Results

- 50 students provided qualitative responses (53.7% response rate)
- Six common themes were identified:
 - request for addition of a patient or physician panel
 - desire for more time dedicated to the topic
 - appreciation for inclusion of the session
 - request for lecture-type format
 - desire for inclusion of more current or positive initiatives aimed at mitigating disparities
 - appreciation of the pre-reading content

Theme	N (%)
Patient/Physician Panel	30 (60)
More Time	15 (30)
Appreciation of Session	14 (28)
Lecture Format	13 (26)
Positive Initiatives	7 (14)
Pre-work Quality	3 (6)

Table 1. Total number and percentage of students including comments under each theme in qualitative feedback.

Discussion

- Outcomes suggest that approximately half of students perceived the curriculum to be effective at meeting learning objectives
- While outcomes suggest the session is a positive addition to the pre-existing Health and Society curriculum generally accepted by students, there are avenues by which the session can be improved including implementation of physician/patient panel, lecture format, and more time allotted to the subject

Limitations

- No pre-session questions assessed baseline knowledge and attitudes about the topics limiting ability to fully assess impact of the session
- Surveys were delivered retrospectively and combined with questions about several curricular components which could bias student responses
- No formal qualitative analysis is complete to date

Future Directions

- With 60% of students indicating a desire for a patient/physician panel, this should be a priority moving forward
- 14% of respondents indicated the desire to hear more about current, positive initiatives taking place to address the disparities discussed and future iterations could include more topics such as: heritage sed banks, language and culture restoration programs, sweat lodges, Native American Church, tribal run substance use and re-integration programs
- This brings up a larger issue that often arises in these discussions: moving the discussion from disparities and risk to strengths and resilience. Future work with the curriculum and with community research should include more time for discussion of strengths and ways to harness these strengths in healthcare

Key References

- Henson, M., Sabo, S., Trujillo, A., & Teufel-Shone, N. (2017). Identifying Protective Factors to Promote Health in American Indian and Alaska Native Adolescents: A Literature Review. *The Journal of Primary Prevention*, 38(1), 5–26. <https://doi.org/10.1007/s10935-016-0455-2>
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