

Integrating Precision Medicine in an Interprofessional Health and Humanities Curriculum to address sex and gender issues in medical school education.

Marrero, E. MSII; Reyes, N. MSII; Ramirez, G. MSIII; Ostolaza, K. MSII; Jimenez, S. MSII; Espinosa, J. MSII Garcia, M. MD,MS;
San Juan Bautista School of Medicine, Caguas, PR



Background

The Challenges: Health professions education institutions confront the challenge of preparing learners for the complex societies of the XXI century.

The Opportunities: Understanding Sex and Gender topics are key for providing up-to-date, precise, and unique care for patients.

- San Juan Bautista School of Medicine (SJBSM) Interprofessional Curriculum in Sex and Gender through Arts and Humanities, was developed using design thinking tools to address the required competencies in diversity and inclusion.
- This committee integrates four academic health programs and their interest group.
- Implementing curricular innovation to address competencies in diversity and inclusion, through activities and in-class references, has shown to enhance the participation of students at our institution.
- SJBSM Precision Medicine Interest Group (SJBPMG) was inscribed on 06/2021.
- Precision Medicine is a new dynamic model of health care that takes into account individual differences in people's genes, environments and lifestyles.

Specific Aim

- Develop a curricular innovation alongside SJBPMG to address competencies in diversity and inclusion.
- Evaluate the effectiveness of integrating SJBPMG with the interprofessional curriculum.
- Analyze the impact of infographics, case discussion and Precision Medicine Round for educational purposes.

Methods

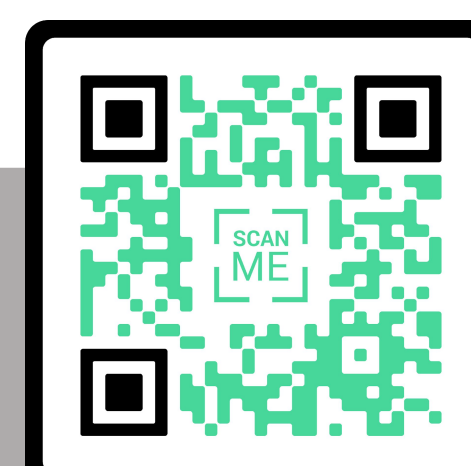
Identification of teaching / learning opportunities and instructional design.

SJBPMG Branch of Sex and Gender.

Alignment of the activities (Journal Clubs, Case Discussion, Infographic) with second year curriculum.

Sex and Gender Infographic and Precision Medicine Round.

Google form Survey.



Results

In which program are you currently enrolled?

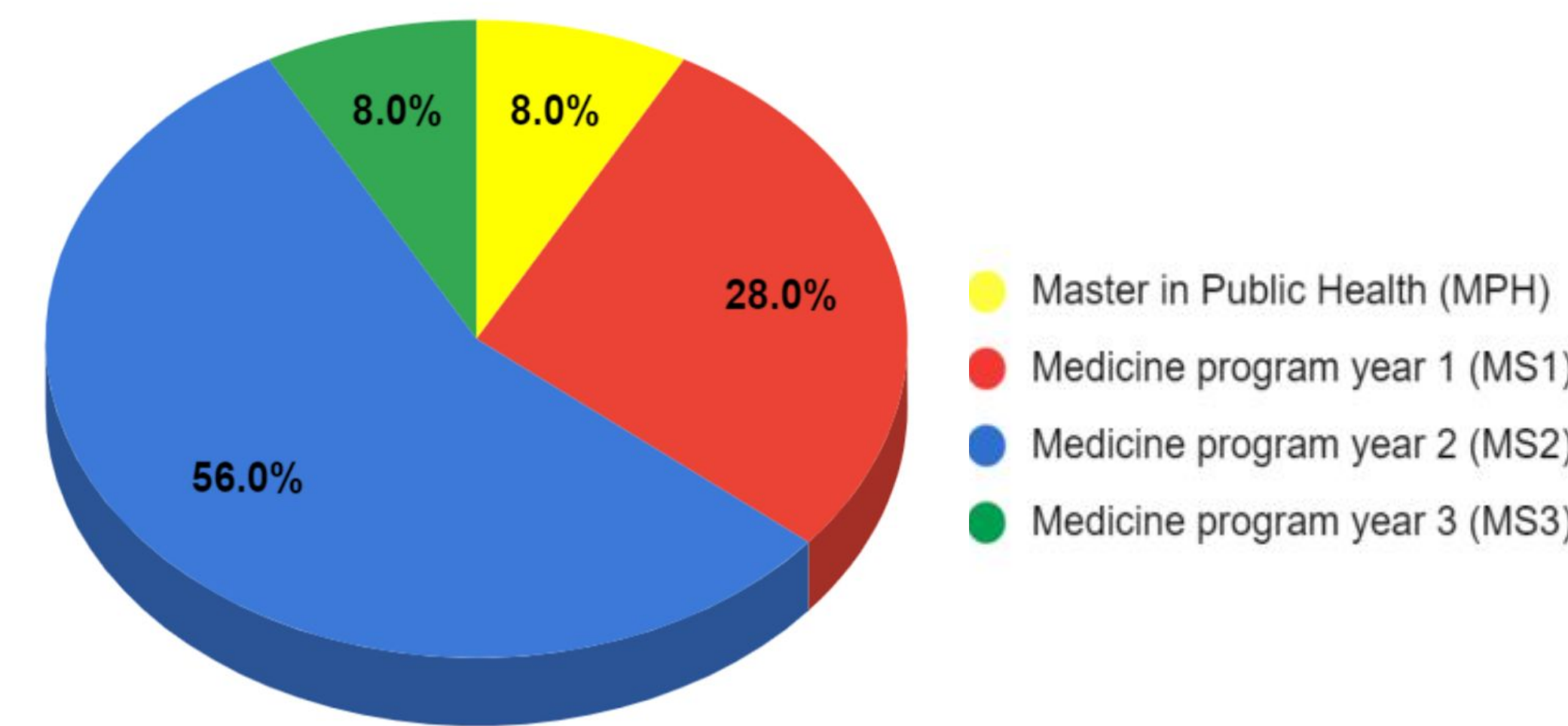


Figure 1. Distribution of Academic Programs of participating students.

Were you aware of this difference by sex and gender before reading the infographic?

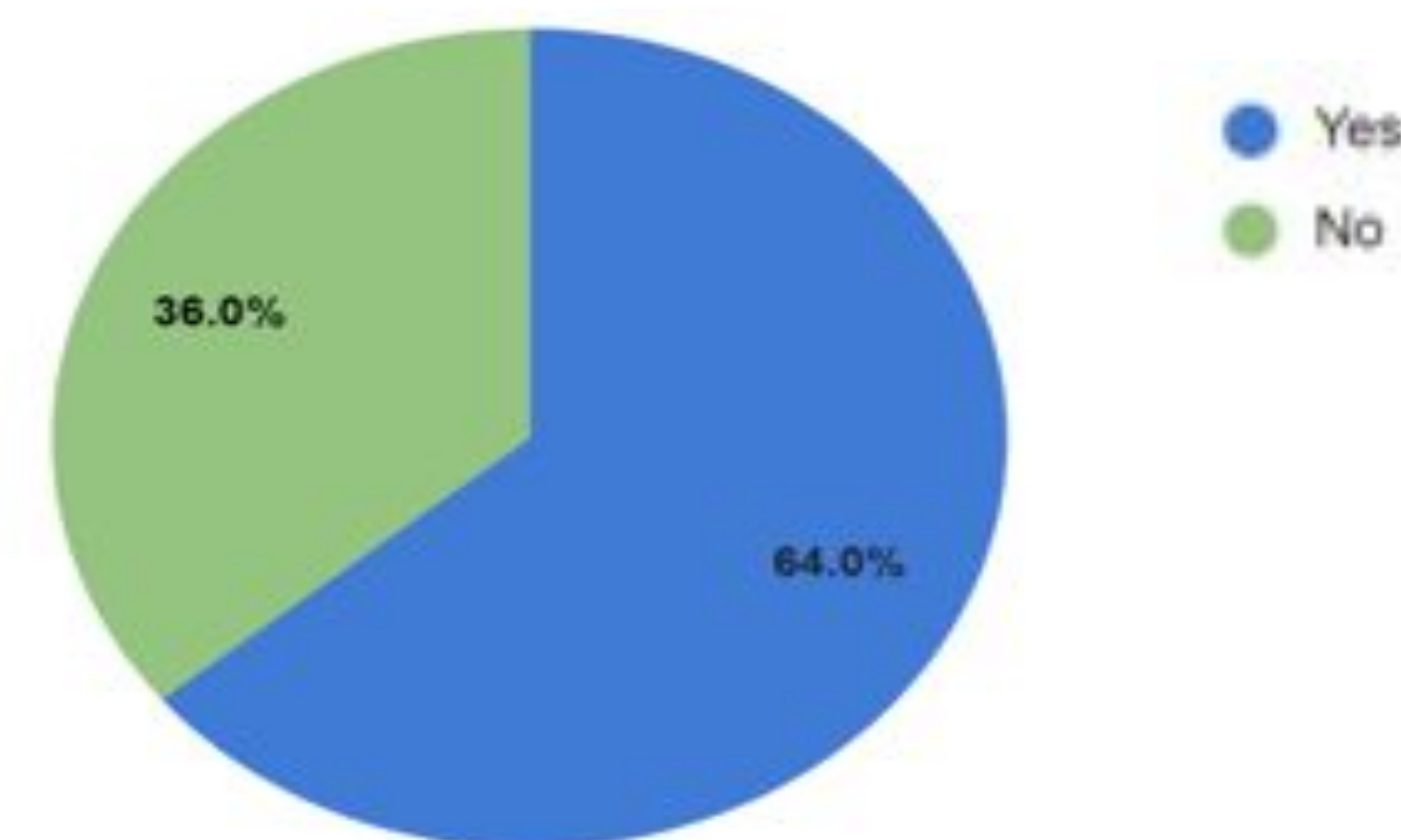


Figure 2. Distribution of Academic Programs of participating students.

The topics discussed in this activity are covered in class or in your academic curriculum?

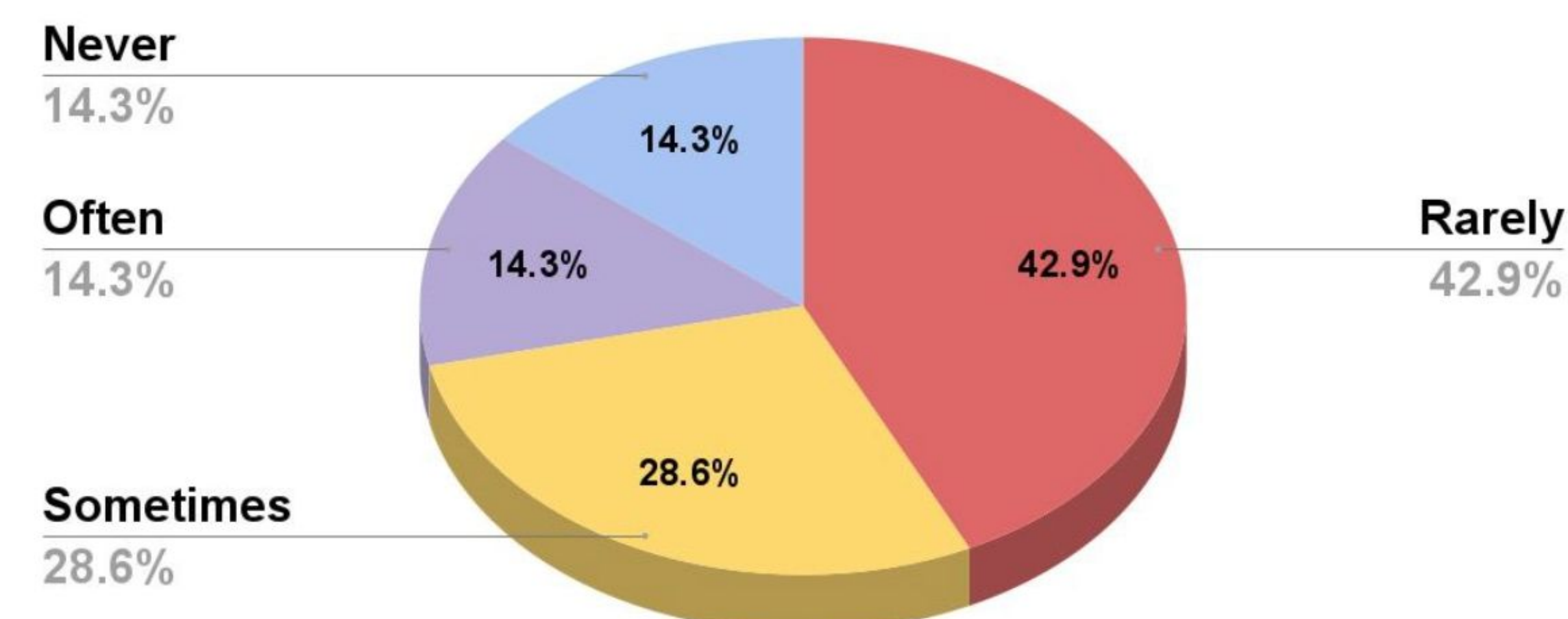


Figure 3. Distribution of unconscious biases topics being discussed in class or academic curriculum.

Knowing sex and gender differences improves one's ability to manage patients?

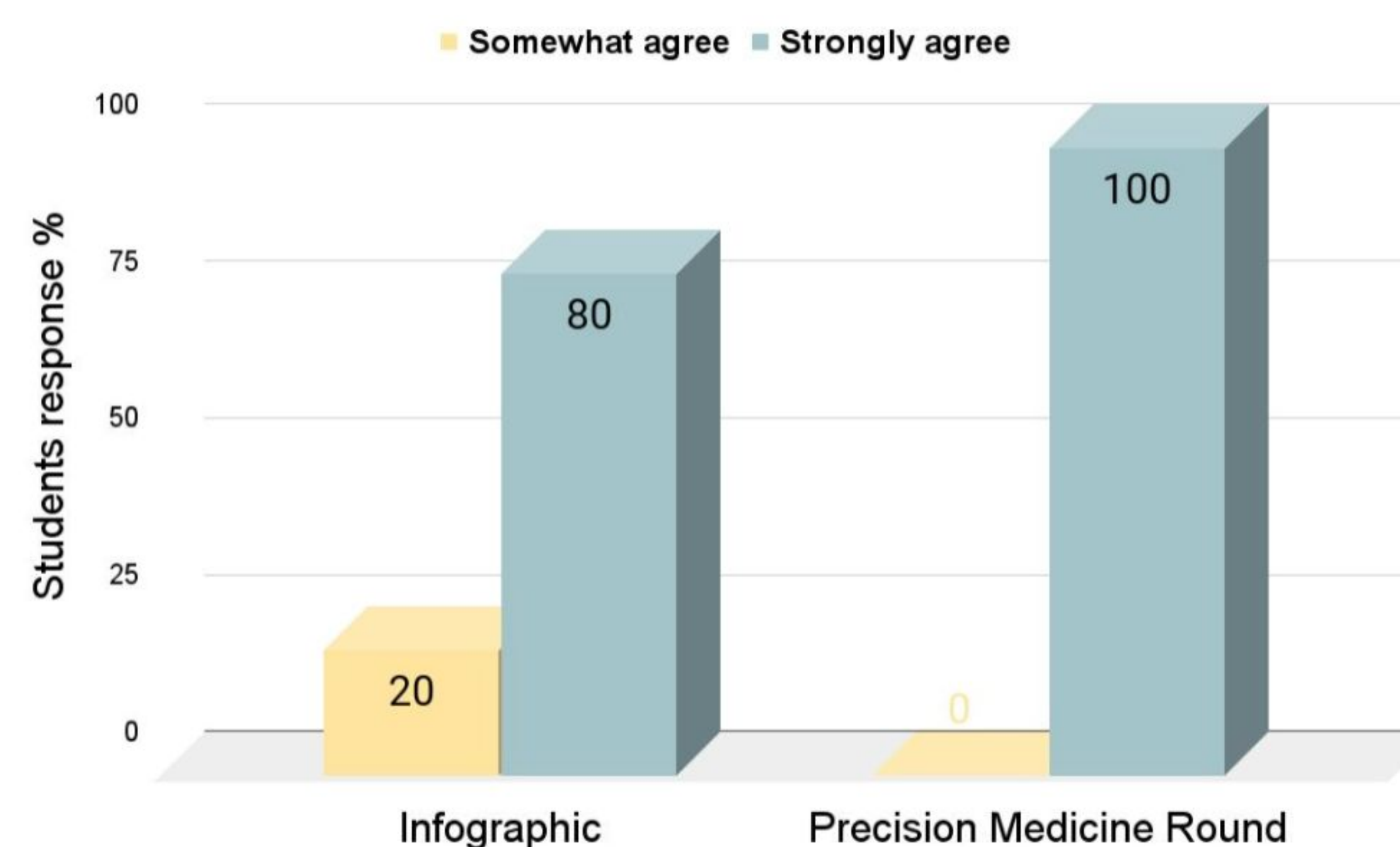


Figure 4 Distribution of sex and gender knowledge and patient management.

Conclusion

- The SJBPMG already has 42 active members which demonstrates the student's interest in integrating topics of sex and gender with the proposed model.
- The infographic about sex-related differences in markers of immune activation in virologically suppressed HIV- infected patients has 105 impressions on our social media platform.
- From our preliminary data, 64% of the participants knew about this difference before responding to the survey which suggests the engagement of this topic in our medical school.
- 80% of the students strongly agree that knowing sex and gender difference improves one's ability to manage patients.
- From our **Precision Medicine Round** about "Unconscious Biases in Healthcare", 42.9% of the students reported that the topics discussed in this activity are rarely cover in class or in their academic curriculum.

Future Works

- Long term implementation and continuous outcomes assessment.
- Use REDCap software to validate the questionnaire and collect data on this academic year's scheduled activities.
- Establish collaborations with other health professional educational institutions and other programs at our institution.
- Student development opportunities in sex and gender issues.

References

- The National Academies of Sciences, Engineering and Medicine. (2018). Improving Health professional Education and Practice Through Technology. Proceedings of a Workshop (pp. 35-40). Washington DC: National Academy Press.
- Meyer, S. (2016). Sustainability science graduate students as boundary spanners. *Journal of Environmental Studies and Sciences*, 6(2), 344-353.
- National Academies of Sciences, Engineering, and Medicine. (2018). Integration of the Humanities and Arts with Sciences, Engineering, and Medicine in Higher Education: Branches from the Same Tree. Washington, DC: The National Academies Press.
- Hart Research Associates. (2016). Recent Trends in General Education Design, Learning Outcomes, and Teaching Approaches. Association of American Colleges and Universities.
- Gurmon, D. (2013). Integrating art and science in undergraduate education. *PLOS Biology*, 11(2), e1001491.
- Jenkins MR, Herrmann A, Tashjian A, et al. Sex and gender in medical education: a national student survey. *Biol Sex Differ*. 2016;7(Suppl 1):45. Published 2016 Oct 14. doi:10.1186/s13293-016-0094-

Acknowledgments

SJBSM for sponsoring the project.
Dr. Alvaro Perez, MD, MS, Med for his advice and contribution to the definition of this project and to Dra. Linda Pérez for her help with REDCap.