Assessing the Prevalence of Computer Vision Syndrome at an Osteopathic Medical School with an Electronic Content Delivery Model

Jonathon Reynolds MBS OMS3, Joseph Bachman OMS2, Elizabeth Turner OMS3, Tipsuda Junsanto-Bahri MD
Noorda College of Osteopathic Medicine

Background

To compare the prevalence of computer vision syndrome (CVS) between students, faculty, and staff. CVS is caused by extended screen exposure that can lead to eye discomfort and vision changes which can affect quality of life and educational performance.

We are a new Osteopathic medical school that aims to create an innovative approach to medical education delivery via employment of modern technology that is already prevalent. Implementation of pre-recorded lecture materials in the curriculum requires 4-6 additional electronic screen exposure hours.

Faculty, students, and staff are potentially at increased risk for CVS stemming from the curriculum delivery style and the accelerated use of technology during the COVID-19 pandemic.

Methods

Anonymous online surveys were distributed, comprised of 21 questions related to eye conditions, use of digital devices, symptoms of computer vision syndrome, an open-end comment section, and a demographics section. Information on CVS symptoms and prevention was provided for participants to download. IRB approval: NCOMIRB#22-0003E
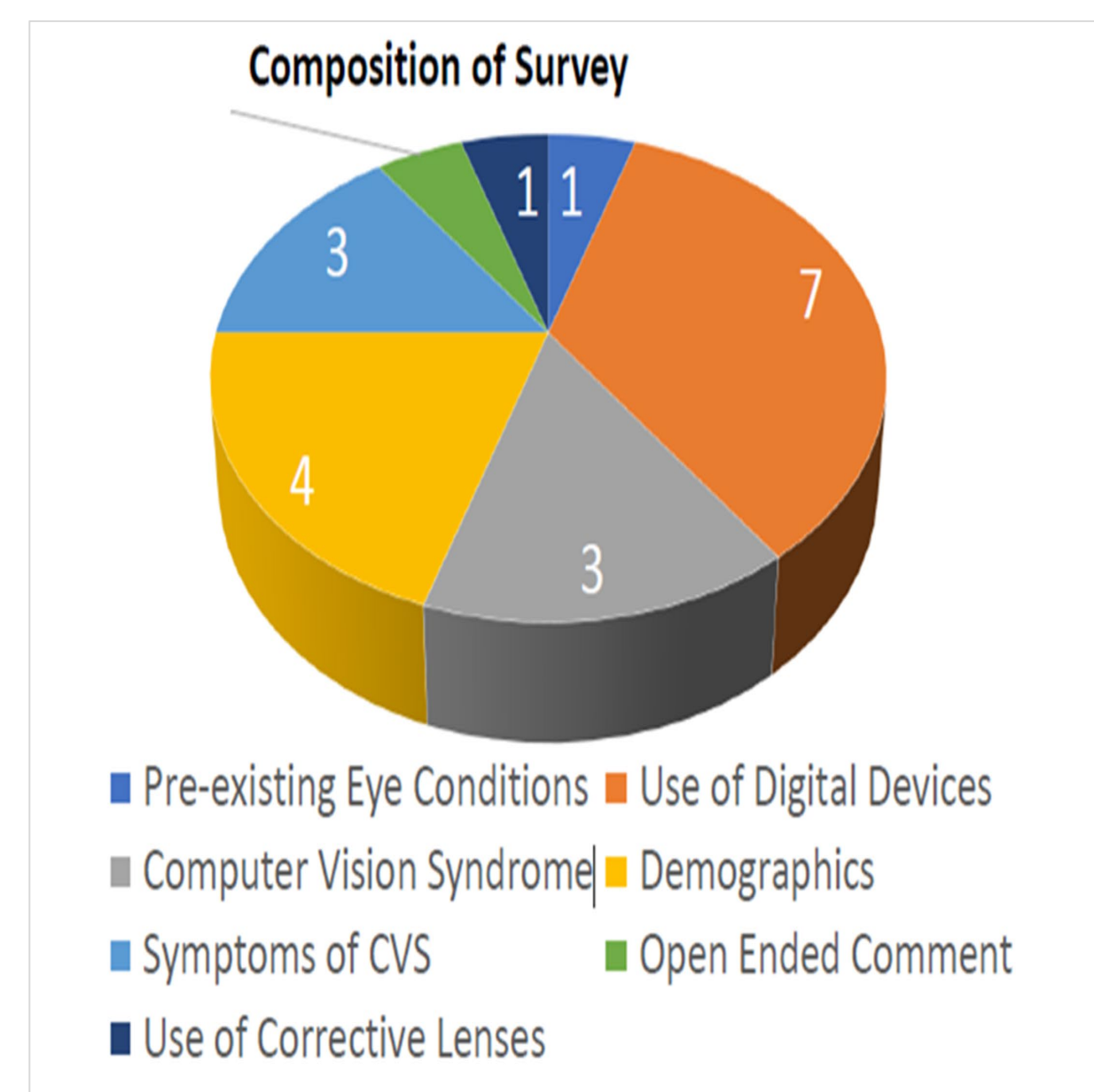
Faculty, staff, and students (Classes of 2025 and 2026) were invited to participate. Presence of CVS was defined at 6 or more symptoms related to CVS and symptoms.

P-values were calculated using a chi-squared test.

Composition of Survey

- Pre-existing Eye Conditions
- Computer Vision Syndrome
- Symptoms of CVS
- Use of Corrective Lenses
- Use of Digital Devices
- Demographics
- Open Ended Comment
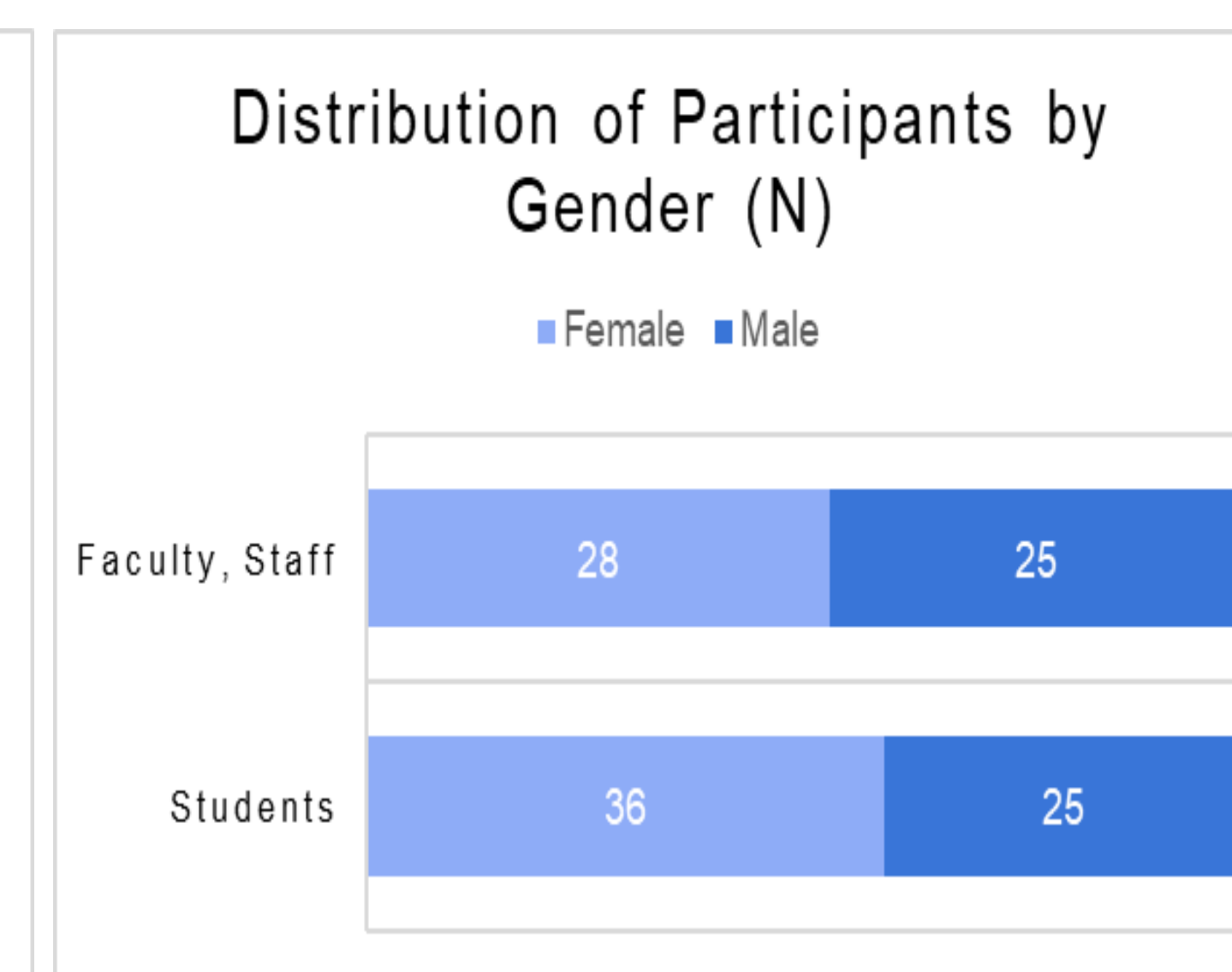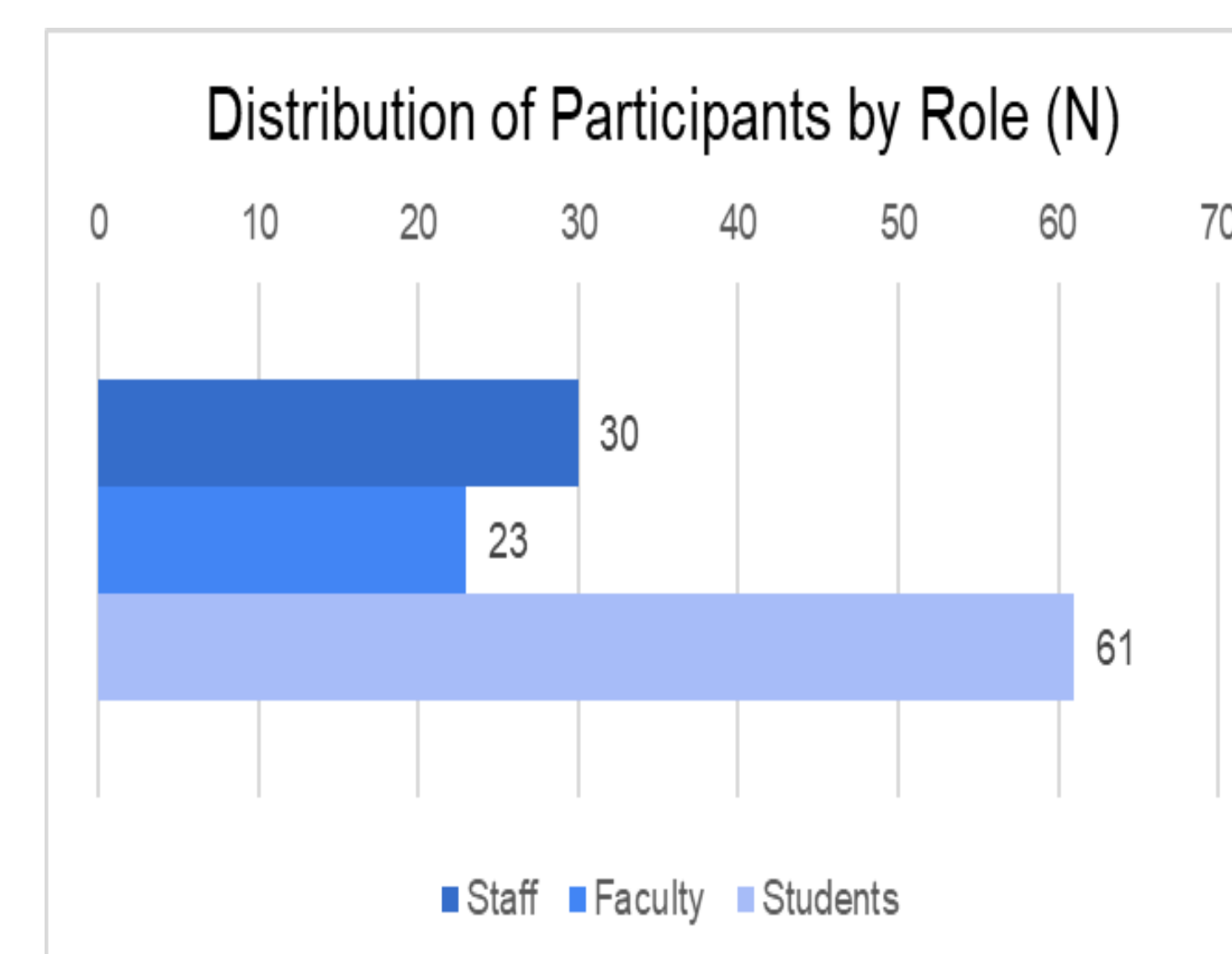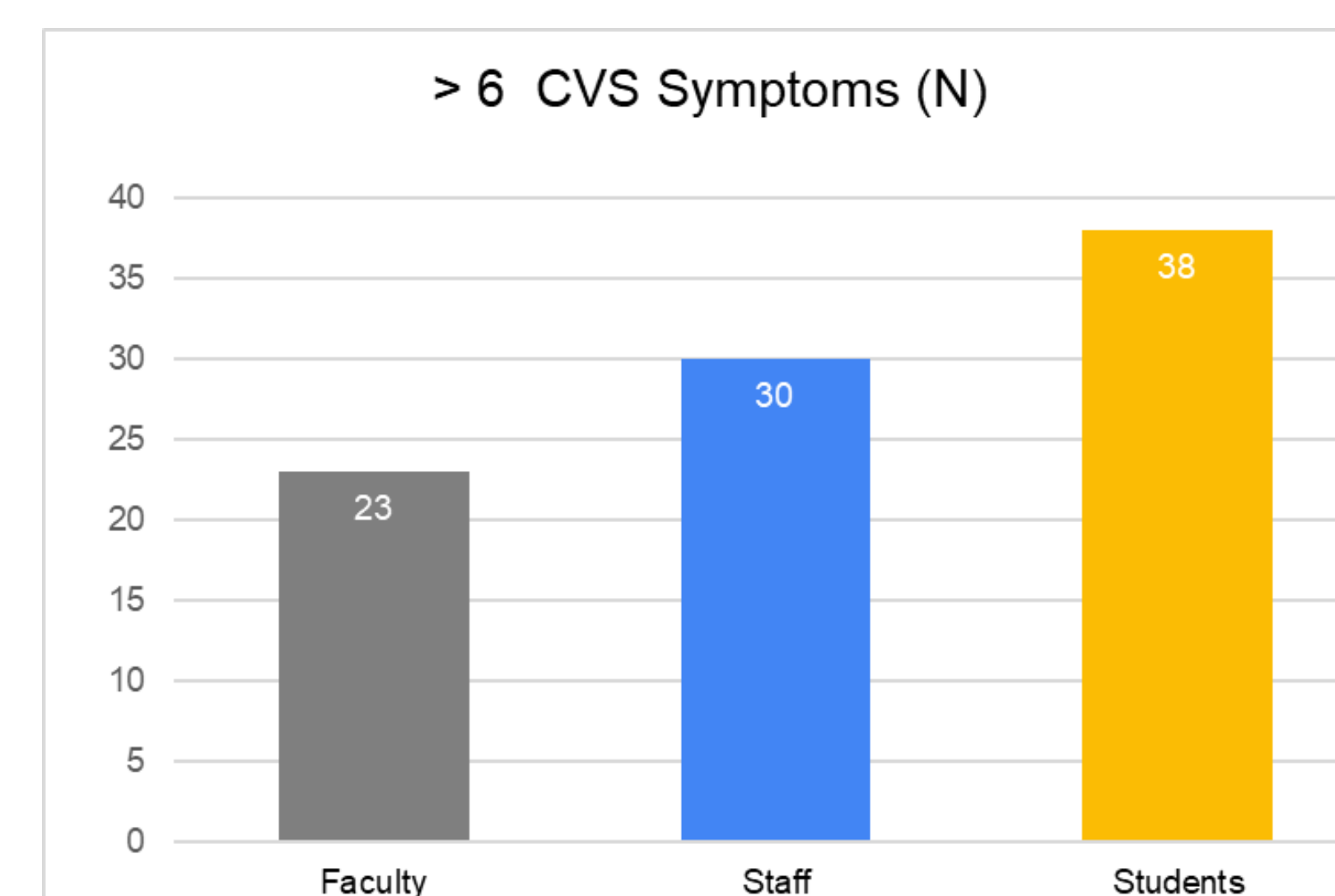
Is your vision 20-20-20?

- Every 20 minutes
- Look at something 20 feet away
- Hold your gaze for 20 seconds
- Remember to blink!

Preliminary Results

114 responses were received (32% response rate; 114/350)
- 53% medical students, 20% faculty, and 26% staff
- 53% female, 47% male
- 62% of students reported having ≥6 symptoms related to CVS.
- 71% of staff and 35% of faculty reported having ≥6 symptoms related to CVS.
- No significant difference between students and staff or students and faculty.

> 6 CVS Symptoms (N)

Distribution of Participants by Role (N)

Distribution of Participants by Gender (N)

Sample Survey Questions

Q5.   Do you have a preexisting eye condition (i.e. cataracts, glaucoma, presbyopia, myopia, etc.) that is affecting your eye health?

Q6.   What kind of corrective lenses do you most commonly wear while studying/working on your computer?

Q7.   How knowledgeable are you about Computer Vision Syndrome (CVS) or digital eye strain?

Q11.   What digital devices do you currently use to study and/or work?

Q17.   How often do you take breaks from your computer screen?

Q18.   Which of the following digital device-using habits have you adopted?

Q20.   How frequently do you experience any of these symptoms?

Conclusion

- This study highlights the prevalence of CVS among faculty, staff and students, highlighting the potential impact of outreach.
- These results suggest higher rates of vision fatigue among staff within out population.
- Further research may help identify additional causative factors and effective strategies for prevention

References

1. Kumar, S. A Study to Evaluate the Knowledge Regarding Computer Vision Syndrome Among Medical Students, Biomed & Pharmacol J. 2020 vol 13(1): 469-473
2. Hassan HAG. Computer Vision Syndrome Among Medical Students at the University of Khartoum, Sudan. Cureus. 2023 May; 15(5): e38762
3. Abdulrahman, A et al. Computer Vision Syndrome: Symptoms, Risk Factors, and PRactices. J o Fam Med and Primary Care. 2022 Sept; 11(9): 5110-5115

NOORDA COLLEGE
of OSTEOPATHIC MEDICINE