

The Impact of Concise, Whiteboard-style Educational Videos on Patient Understanding of Cardiovascular Disease, Testing, and Procedures

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Introduction

- Understanding cardiovascular conditions can be challenging for patients, especially those for those with low health literacy.^{1,2,5,6,7,10}
- Prior studies in dermatology and oncology have demonstrated the utility of educational videos to boost patient understanding of their health.^{4,8}
- Whiteboard-style educational videos have improved understanding in students.³
- Videos under 5 minutes are more effective compared to longer videos.¹¹
- In cardiology, a whiteboard video to educate patients about dual antiplatelet medications (DAPT) was made as a practice-brief.⁹
- The quantitative impact of concise, whiteboard-style educational video (cWEV) use for patients with cardiovascular problems has not been investigated.

Aims and Objectives

To determine the impact of cWEV created from physician encounters on patient understanding about their cardiovascular disease, test, or procedure.

Methods

- As a quality improvement initiative, a compendium of 35 videos (median length: 2 minutes 41 seconds) was developed based on patient centric education given by the cardiologists who authored this study.
- Text in the videos was written at or below a 5th grade reading level.
- Videos were made on a variety of topics to include
- common cardiovascular diseases (n=15), tests (n=6), and procedures (n=14).
- Control group patients' baseline understanding was assessed after the physician encounter (scale from 1 to 5).
- In the intervention group, the patients were then shown the cWEV, and the questionnaire was repeated shortly after.
- After the initial phase of administering cWEV and questionnaires, QR codes were generated for each video for easy distribution to patients.
- The number of times each QR code was used was also monitored to assist in determining the impact of the project.

cWEV Examples

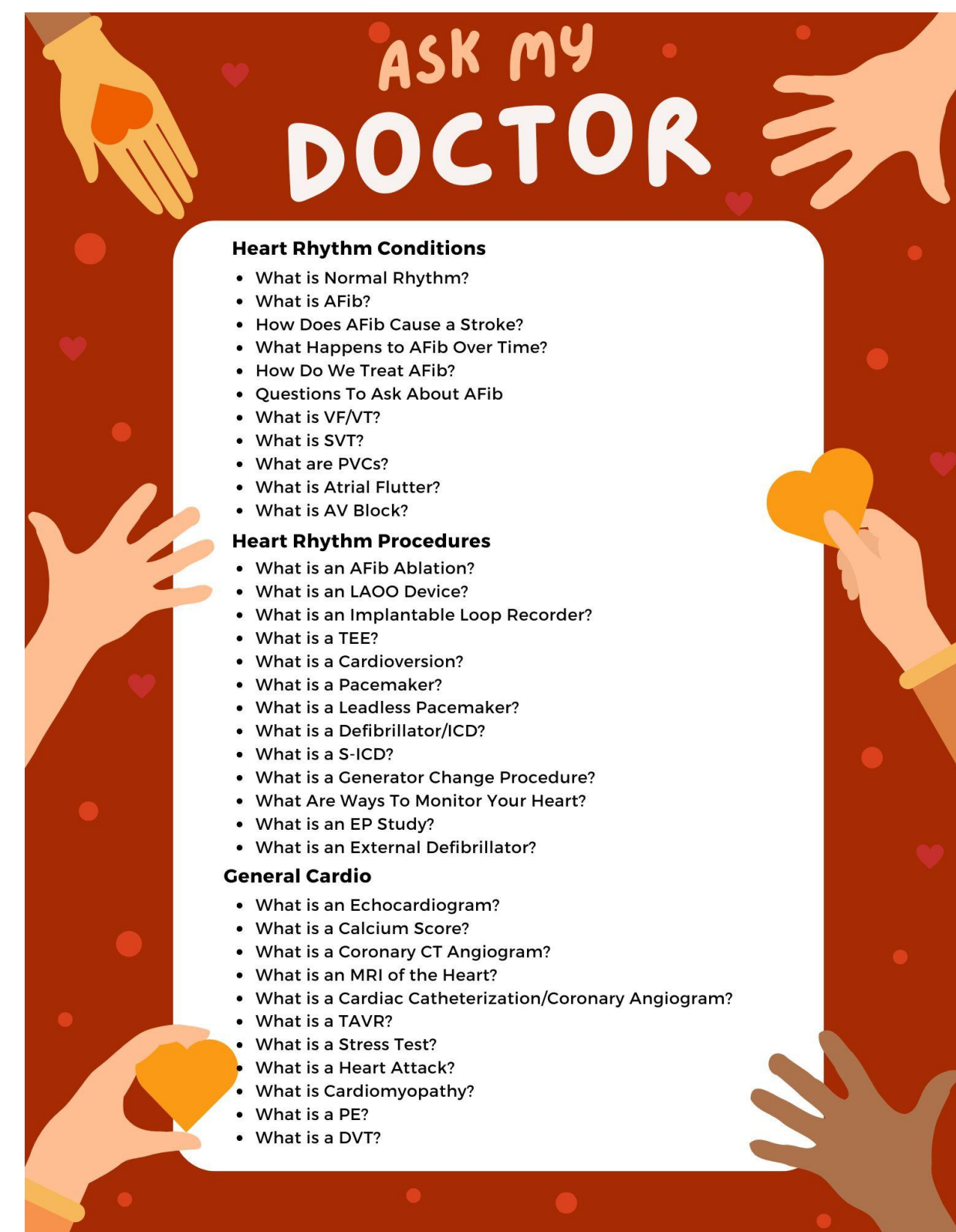


Figure 1: cWEV Library

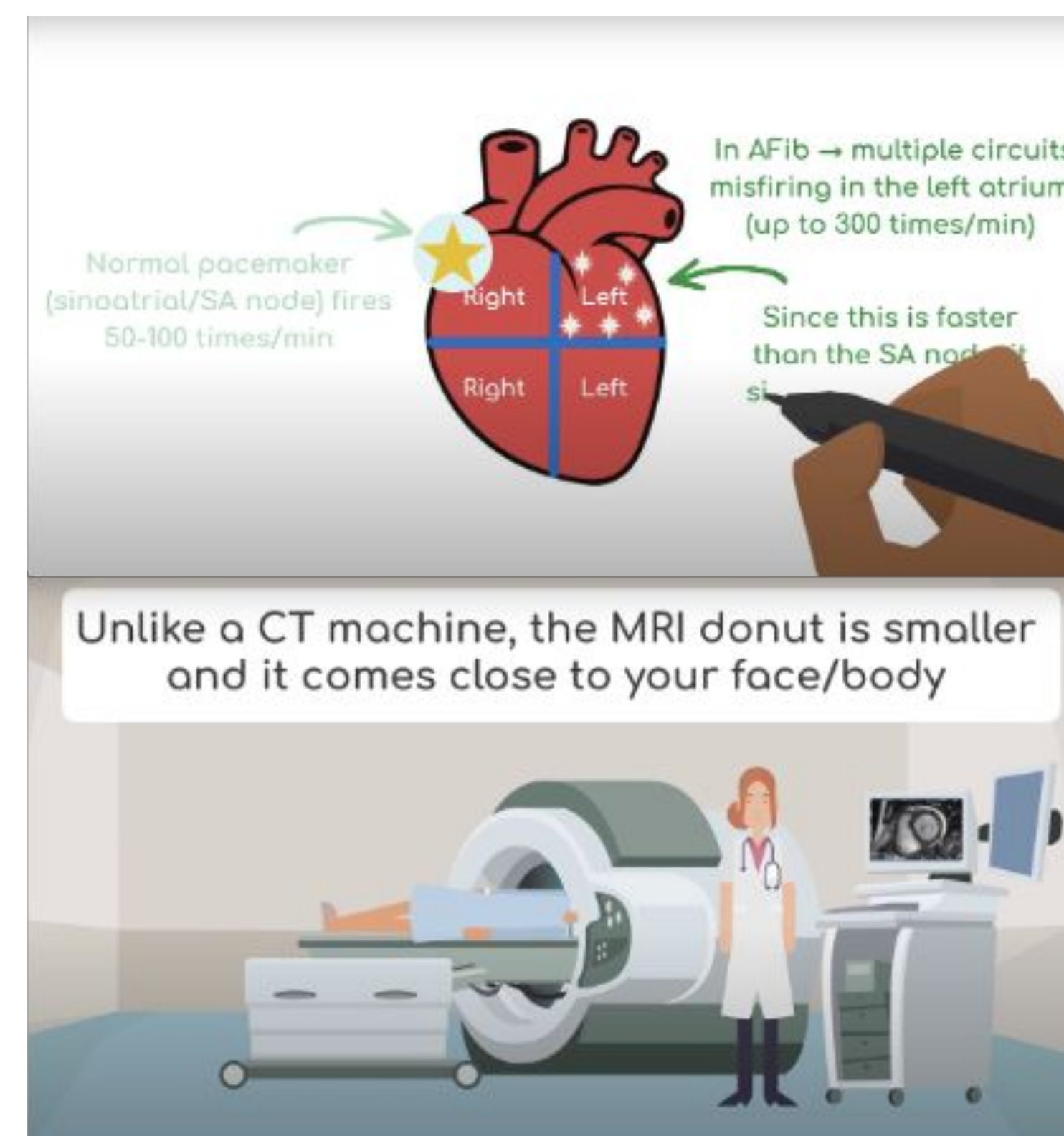


Figure 2: Example scenes from cWEVs



Figure 3: QR Code for "What is Atrial Fibrillation" cWEV

Results

- One hundred and forty-eight patients participated in the trial.
- Twenty-three out of the 35 videos made were used in this trial. These 23 videos were shown 93 times to 78 patients (followed by 16 physicians).
- In the intervention group, videos on disease were shown 13 times, videos on testing were shown 13 times, and videos on procedures were shown 67 times.
- The mean baseline level of patient understanding was similar for the control and intervention groups (4.09 vs 4.02, p= 0.5969).
- This difference was driven by procedural videos (pre-video: 3.84, post-video: 4.57, p <0.001, n=67) compared to videos on disease (pre-video: 4.46, post-video: 4.62, p= 0.1654, n=13) and testing (pre-video: 4.54, post-video: 4.92, p= 0.0544, n=13) (Figure 4).
- The improved understanding from videos was similar in patients seen by invasive and non-invasive physicians (p= 0.1337).

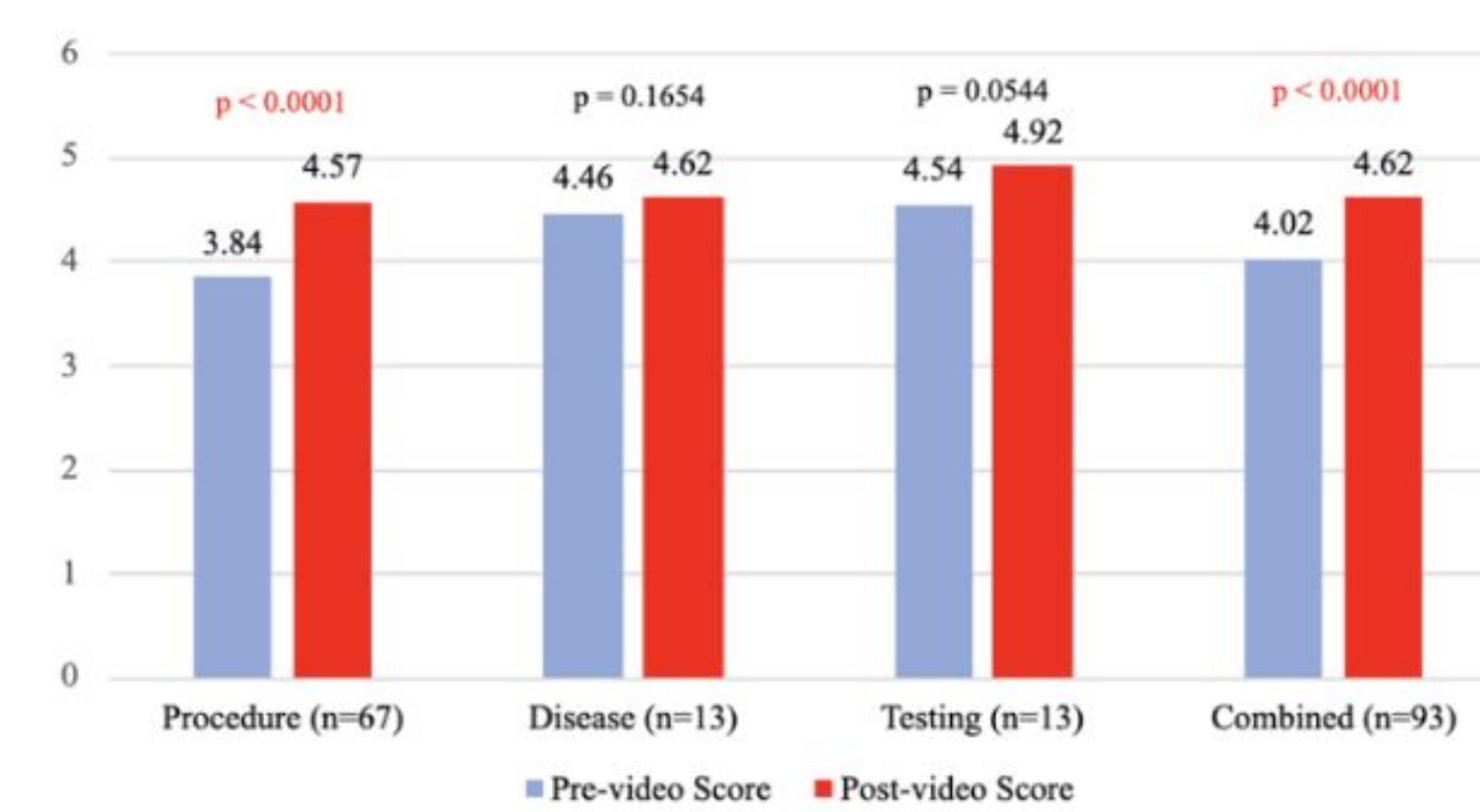


Figure 4: Patient understanding pre- and post-cWEV intervention.

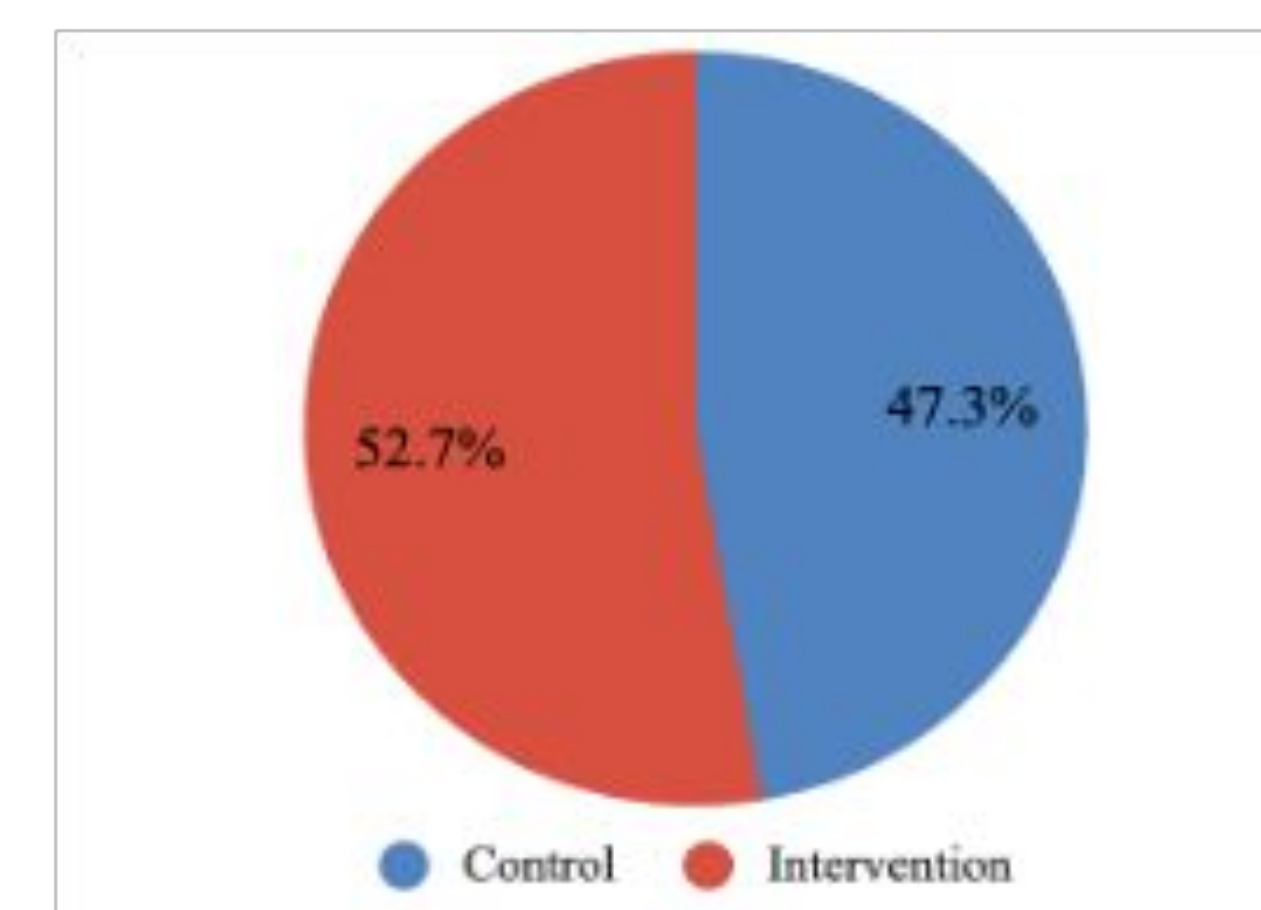


Figure 5: Percentage of patients in control and intervention group

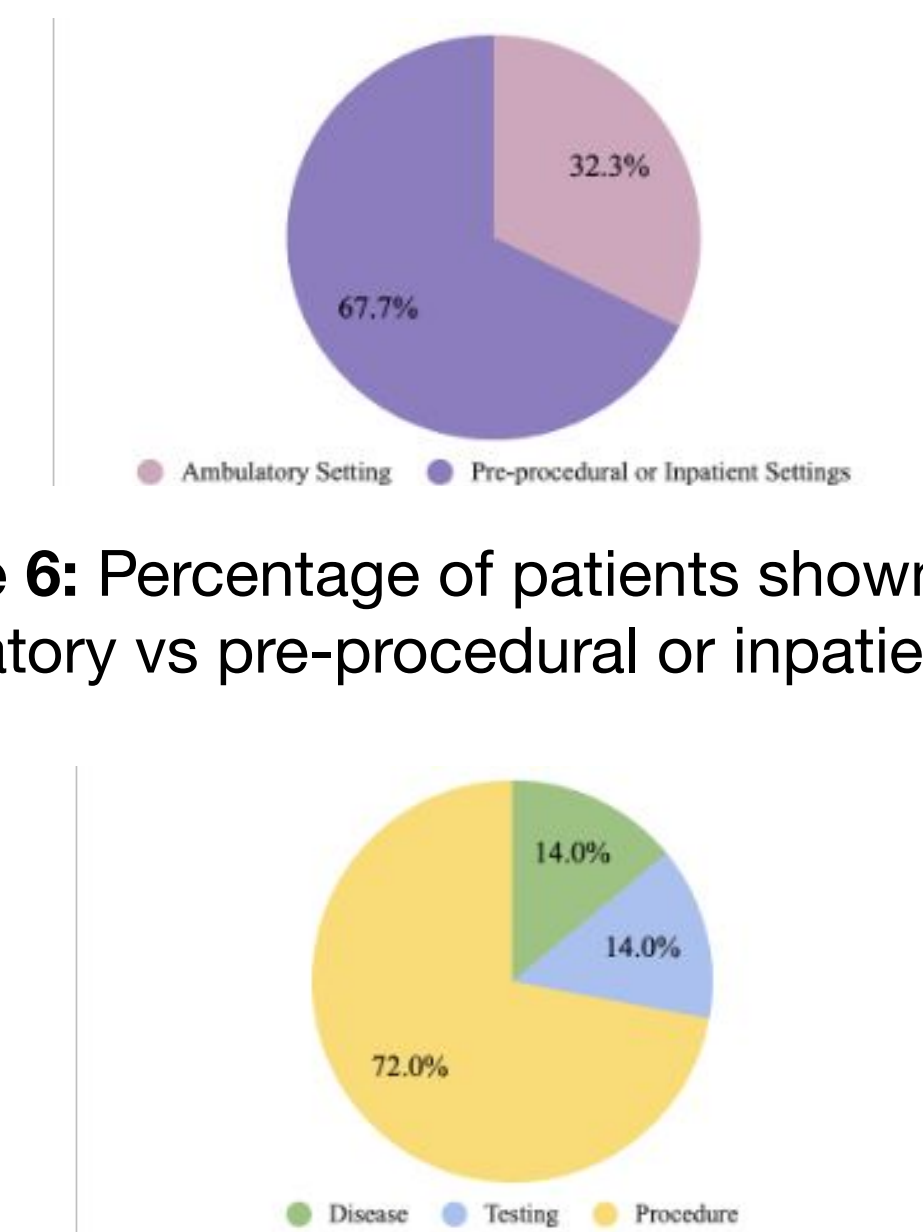


Figure 6: Percentage of patients shown cWEV in ambulatory vs pre-procedural or inpatient settings

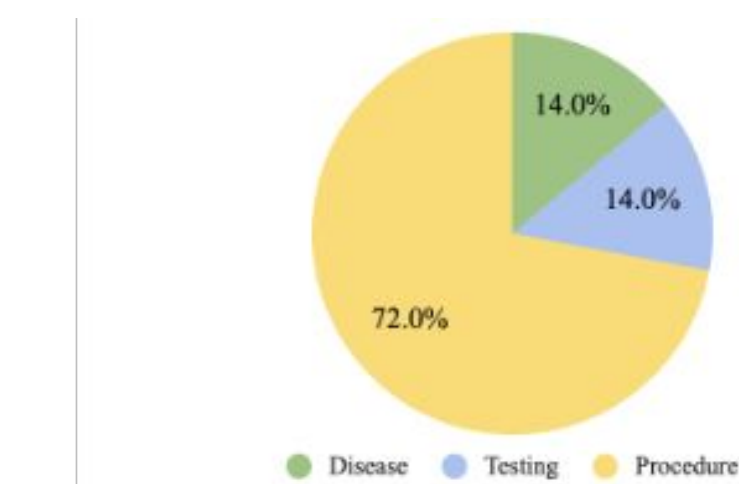


Figure 7: Percentage of cWEV categories shown to intervention group patients

Conclusions

- The findings of this study provide insight into the possible efficacy of this type of novel education for patients.
- cWEV incrementally augmented patient understanding. Notably, this was true immediately after the physician encounter which further emphasizes the importance of augmented education without jeopardizing efficiency.
- This difference was driven by patients undergoing procedures and was independent of whether education was done by an invasive or non-invasive cardiologist.

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