

INTRODUCTION

Hypertension affects 35% of the adult population worldwide¹

- Many face healthcare disparities
- High blood pressure readings can create barriers to care for other healthcare procedures

Healthcare Disparities among low-income patients:

- Cost of medications
- Access to medications
- Medication non-adherence
 - 1/3 of these patients take no medications^{1,2}
 - Evidence shows these patients on medications may still have uncontrolled BP^{1,2}
- Mindfulness is the observation of both present moment cognitive and physical experiences³
- By increasing attention and awareness, mindfulness has been shown to decrease blood pressure.⁴
- Reducing blood pressure begins a positive cascade of events by decreasing the likelihood of developing hypertension and cardiovascular disease.⁵

Benefits of mindfulness:

- Easily accessible
- No known negative side effects
- Can be done in the clinic

The purpose of this study was to evaluate the effectiveness of mindful breathing on blood pressure

METHODS

- Step 1: Patient completes 12th St. HWC check in
- Step 2: Researchers take patient to private room for vitals
- Step 3: Patients given details of project and asked to participate
- Step 4: Vitals and demographic questionnaire recorded
- Step 5: Intervention completed- Brochure and or Breathing Butterfly video
- Step 6: Post intervention blood pressure recorded
- Step 7: Post intervention satisfaction survey completed
- Step 8: Patient escorted to waiting room for their appointment

PATIENT DATA

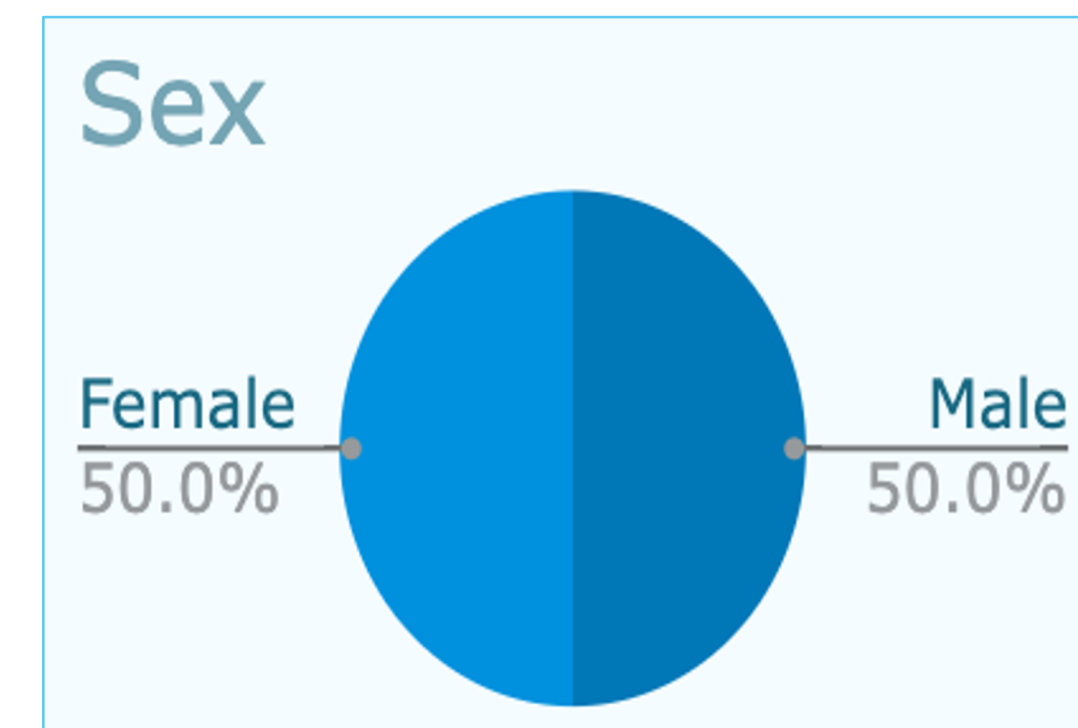


Chart 1. Participant sex was split equally

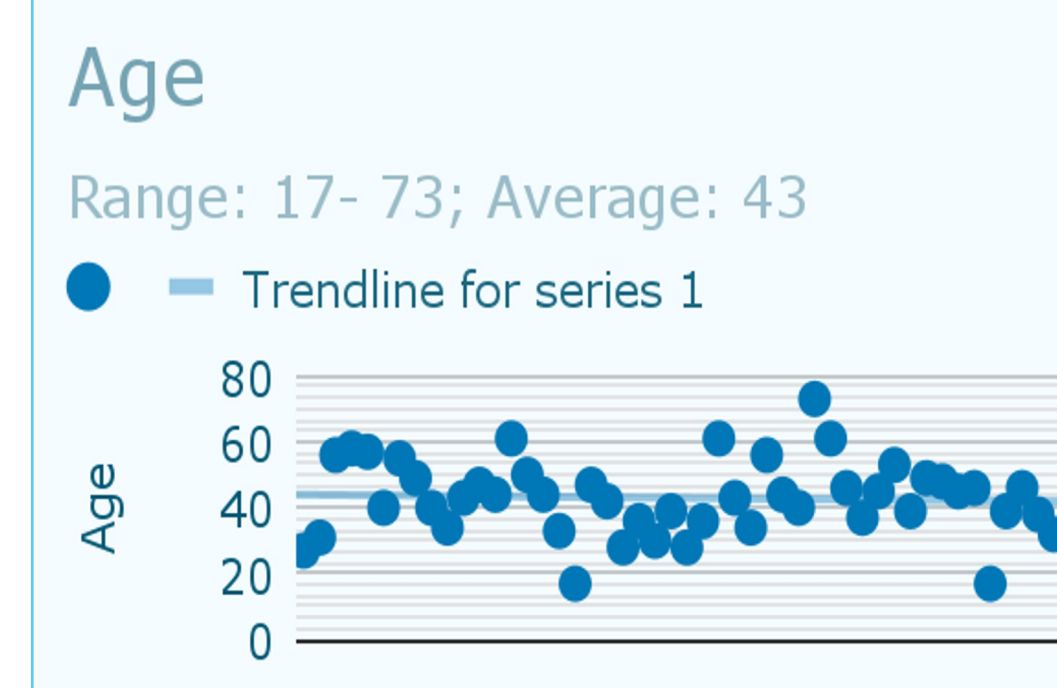


Chart 2. The average age of participants was 43 years old

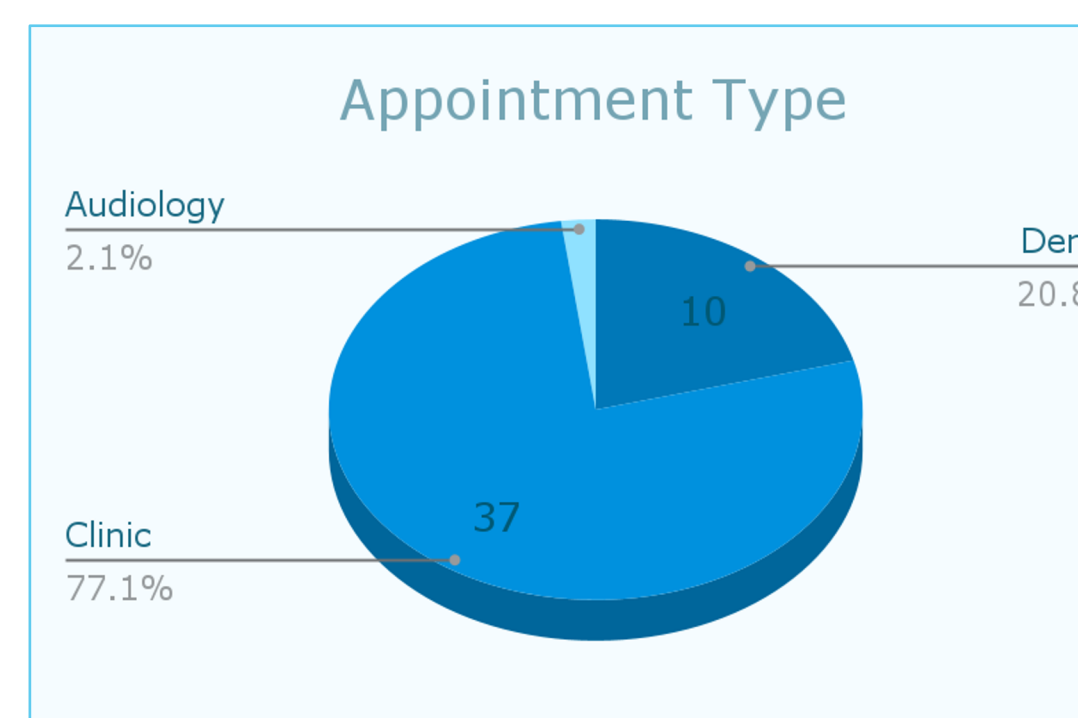


Chart 3. The majority of participants presented for a clinic appointment

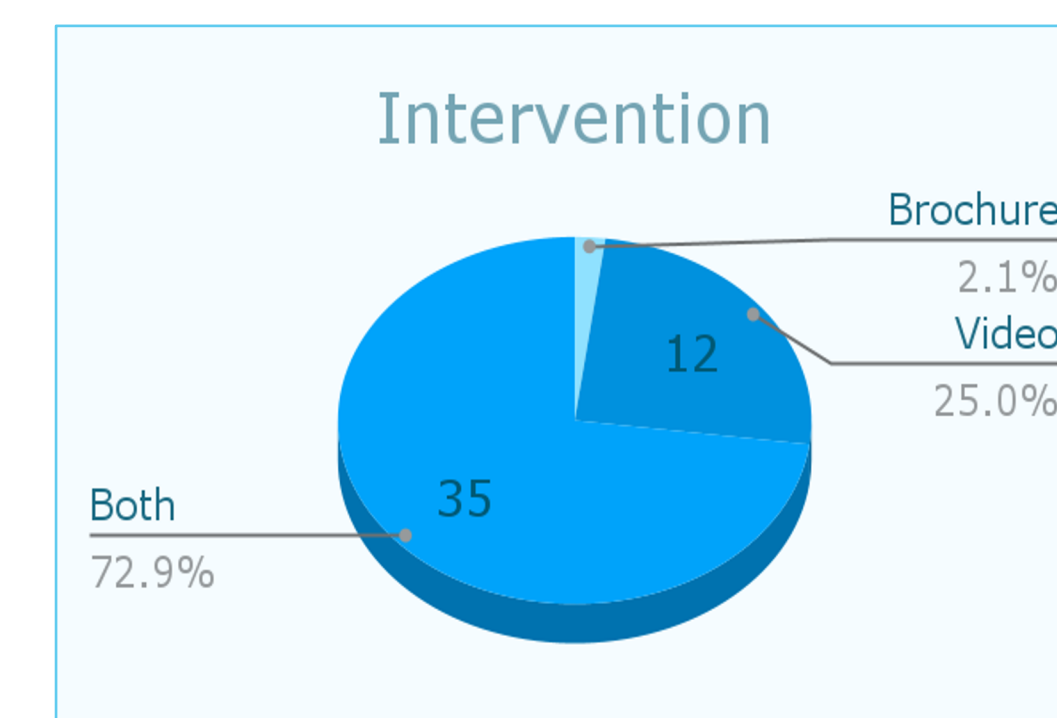


Chart 4. The majority of our patients both read the brochure and watched the video

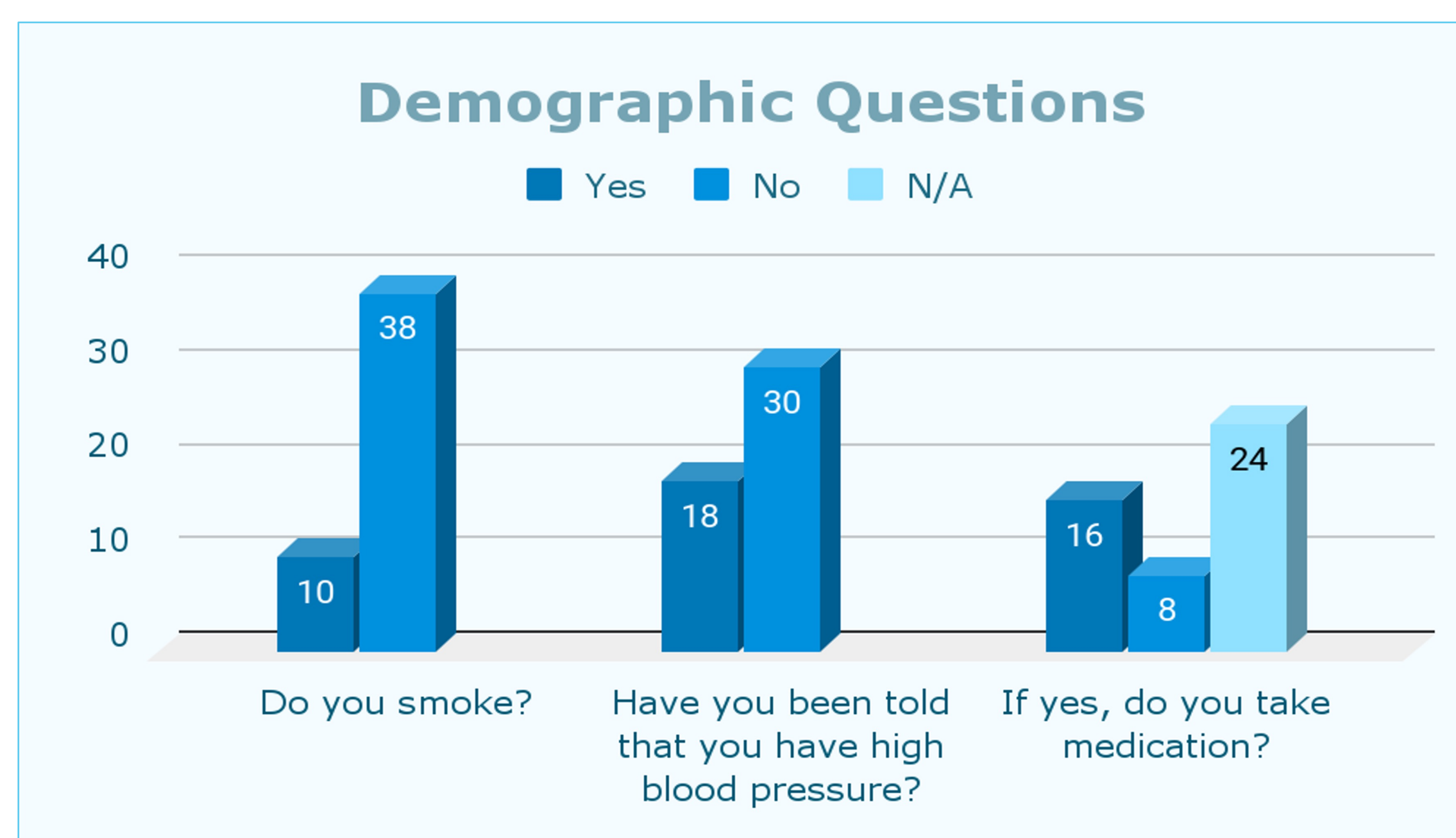
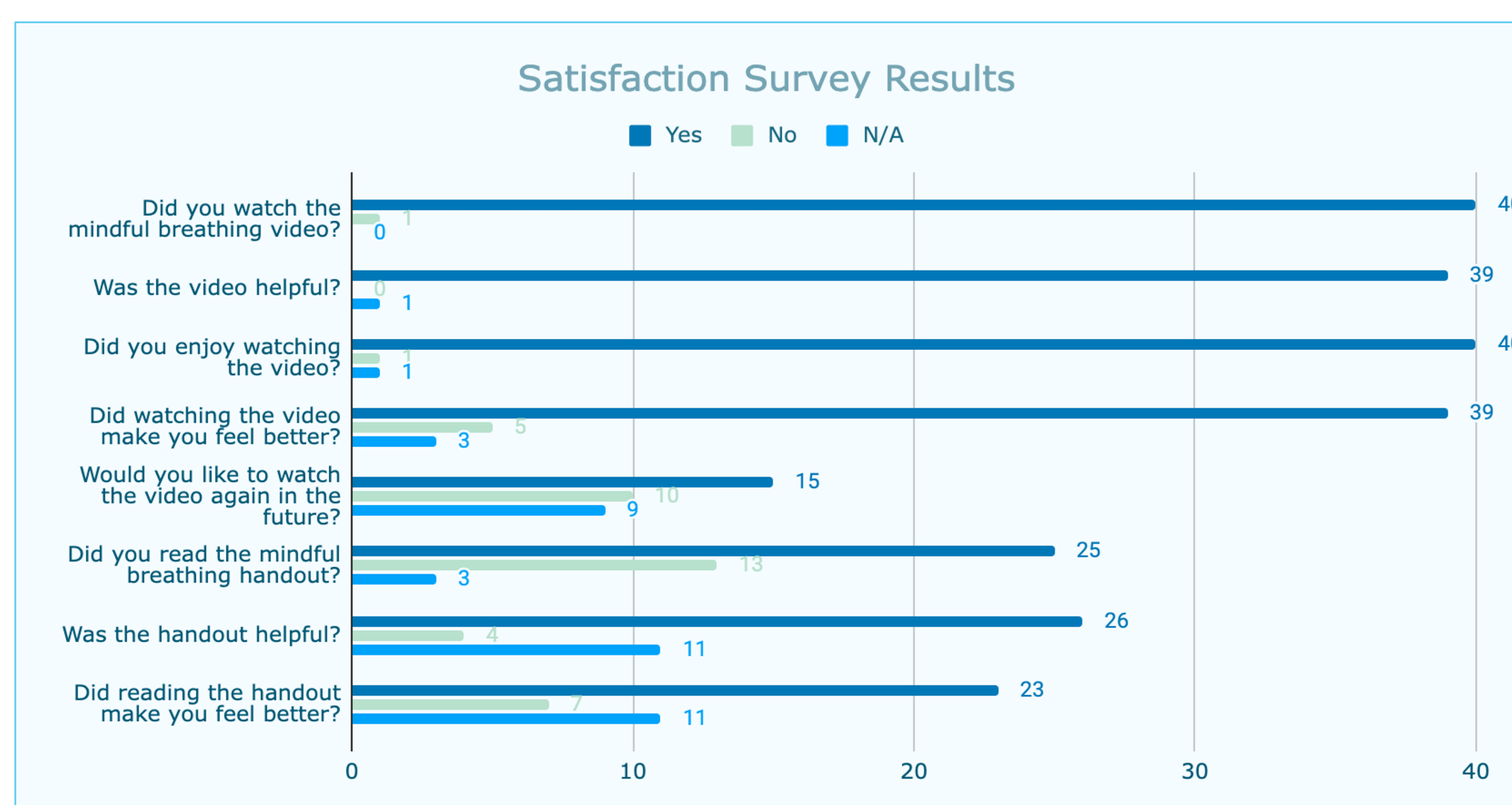


Chart 5. Demographics among participants.

POST INTERVENTION SURVEY



Over 97% of our patients found the mindfulness video helpful and over 86% of our patients found the mindfulness brochure helpful.

RESULTS

Of the 48 participants who participated, **83.3%** (40) had a decrease in blood pressure.

	N	Pre systolic BP[JJ1]	Post systolic BP[JJ2]	Average difference (Pre-Post)	p-value
Brochure or video, Mean (SD)	47	135.38 (15.27)	129.17 (15.11)	6.21 (9.78)	<.0001
Brochure and video, Mean (SD)	35	135.91 (15.96)	129.43 (14.42)	6.49 (9.84)	0.0004

Table 1. Changes in systolic blood pressure among project participants.

There was a **significant difference** in the average pre systolic blood pressure and post systolic blood pressure for those who watched the video and/or read the brochure.

Patients who both read the brochure and watched the video had the greatest drop in systolic Blood pressure

	N	Pre diastolic BP[JJ1]	Post diastolic BP[JJ2]	Average difference (Pre-Post)	p-value
Brochure or video, Mean (SD)	48	83.58 (10.41)	82.65 (10.74)	0.94 (9.12)	0.480
Brochure and video, Mean (SD)	35	84.49 (10.66)	84.00 (10.28)	0.49 (9.33)	0.760

Table 2. Changes in diastolic blood pressure among project participants.

There was **no significant difference** in the average pre diastolic blood pressure and post diastolic blood pressure for those who watched video and/or read the brochure.

Patients who either read the brochure or watched the video had the greatest decrease in diastolic blood pressure

Watching a short mindfulness video prior to a medical or dental appointment is shown to **significantly lower BP**, specifically SBP

Research shows that the mindfulness brochure and video are both beneficial education tools, an effective alternative to traditional hypertension treatment, and are popular among participants.

CONCLUSIONS

- The mindfulness brochure and video should
 - Be an educational tool at 12th Street Health and Wellness Center
 - Be offered to all patients
- Patients should be encouraged to read the brochure and watch the video while waiting during their appointment.
- Continued research should be done at 12th Street Health and Wellness Center should include
 - Longer period of time
 - Larger sample size
 - Attention focused on dental patients
- Having reliable educational tools is crucial for the health and wellbeing of the 12th Street Health and Wellness Center patient population.
- With a better understanding of the effect that the mindfulness intervention has on patient blood pressure, we can provide more beneficial educational tools that can be used at the clinic and at home.

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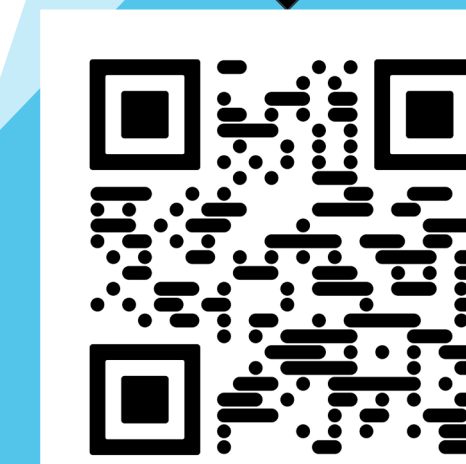
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REFERENCES

- Ponte Márquez PH, Feliu-Soler A, Solé-Villa MJ, et al. Benefits of mindfulness meditation in reducing blood pressure and stress in patients with arterial hypertension. *J Hum Hypertens.* 2019;33(3):237-247. doi: 10.1038/s41371-018-0130-6 [doi].
- Blom K, Baker B, How M, et al. Hypertension analysis of stress reduction using mindfulness meditation and yoga: Results from the HARMONY randomized controlled trial. *Am J Hypertens.* 2014;27(11):122-129. doi: 10.1093/ajh/hpt134 [doi].
- Brandmeyer T, Delorme A, Wahbeh H. The neuroscience of meditation: Classification, phenomenology, correlates, and mechanisms. *Prog Brain Res.* 2019;244:1-29. doi: S0079-6123(18)30159-6 [pii].
- Wright R, Roberson K, Onsomu EO, et al. Examining the relationship between mindfulness, perceived stress, and blood pressure in african-american college students. *J BEST PRACT HEALTH PROF DIVERSITY EDUC RES POLICY.* 2018;11(1):13-30.
- Solano López AL. Effectiveness of the Mindfulness-Based stress reduction program on blood pressure: A systematic review of literature. *WORLDVIEWS EVID BASED NURS.* 2018;15(5):344-352. http://libproxy.uams.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=cem&AN=132248915&site=ehost-live&scope=site. doi:10.1111/wvn.12319.



Scan for The Breathing Butterfly Video!



Scan for the mindfulness brochure!

