

# Patients Prefer Blood-Based Screening Test Over Colonoscopy

## INTRODUCTION:

-Previous studies have analyzed patient and physician preferences toward colonoscopies as well as other screening methods in an attempt to better understand why screening rates remain low.<sup>1,2,3</sup>

-Few studies have analyzed patient preferences towards experimental blood-based screening tests (BBSTs). These BBSTs are appealing because they are non-invasive tests that could address some of the negative attitudes associated with colorectal cancer (CRC) screening. This could lead to increased screening rates in the near future.

-The purpose of the current study is to analyze patients' and Gastroenterologists' attitudes and preferences towards current screening modalities and BBSTs.

## METHODS:

-This is a prospective, cross-sectional IRB-approved study conducted in Northeast Florida.

-Patients and Gastroenterologists were invited to participate in a confidential online survey.

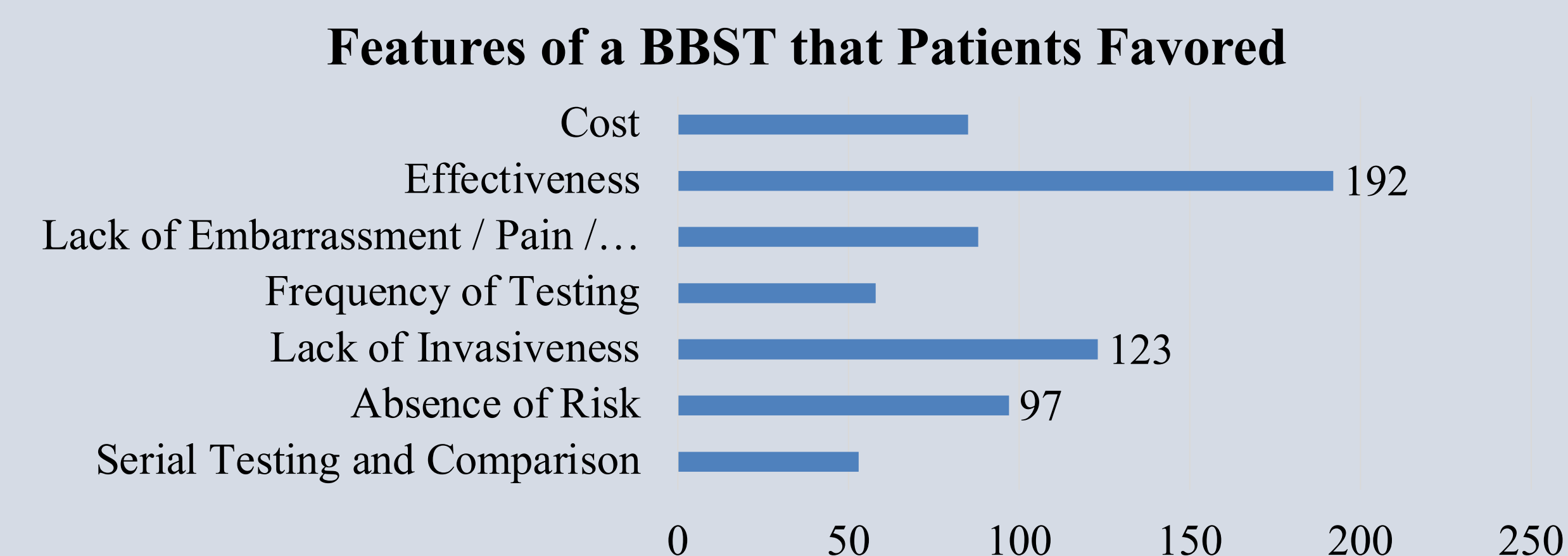
-Three cohorts were studied: gastroenterology (GI) patients at Borland Groover, primary care (PC) patients, and Gastroenterologists at Borland Groover.

-Borland Groover is a large single-specialty GI practice in Florida.

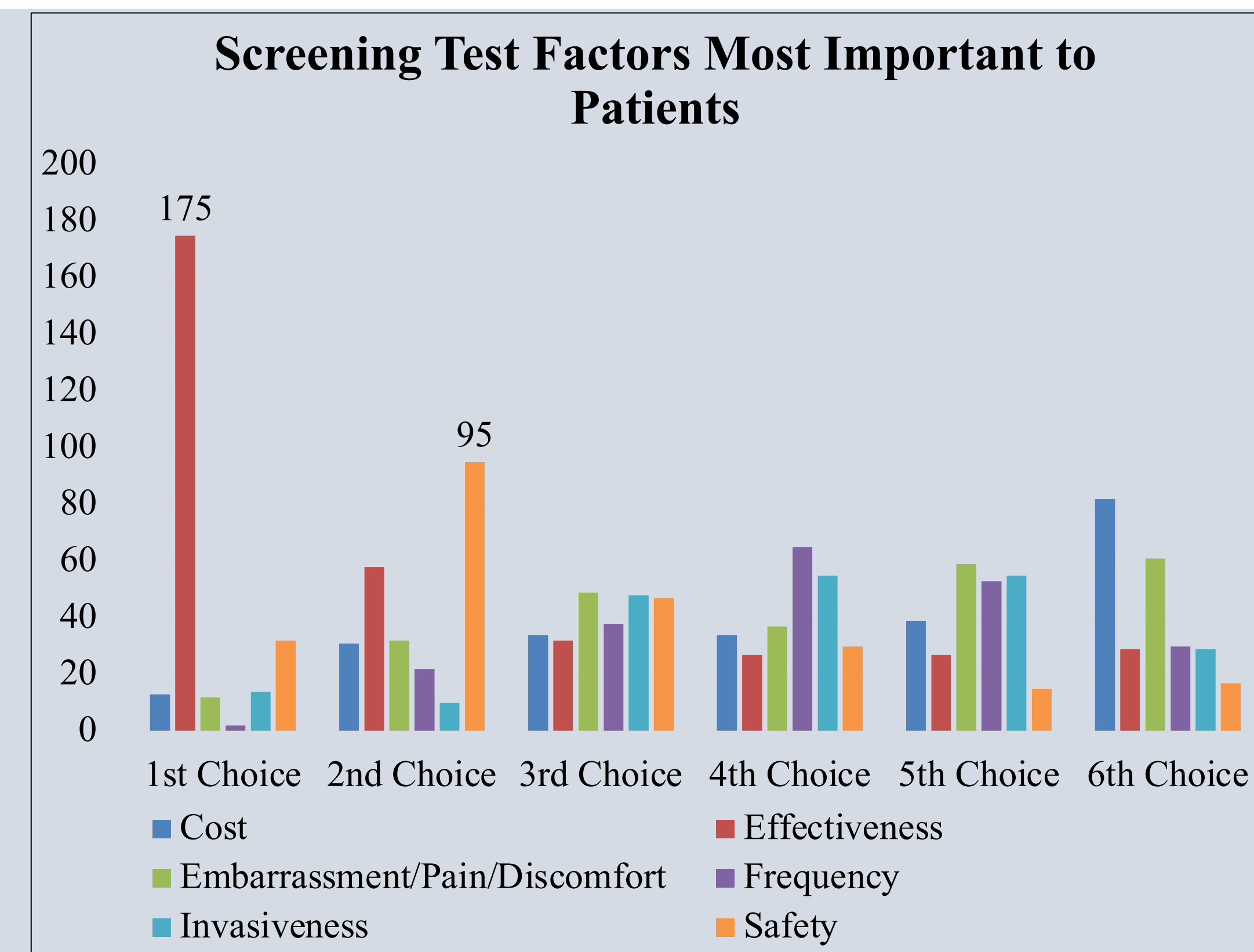
-Only patients that were average-risk for CRC were included in the survey.

-The patient survey had 19 questions, and the Gastroenterologists' survey had 15 questions.

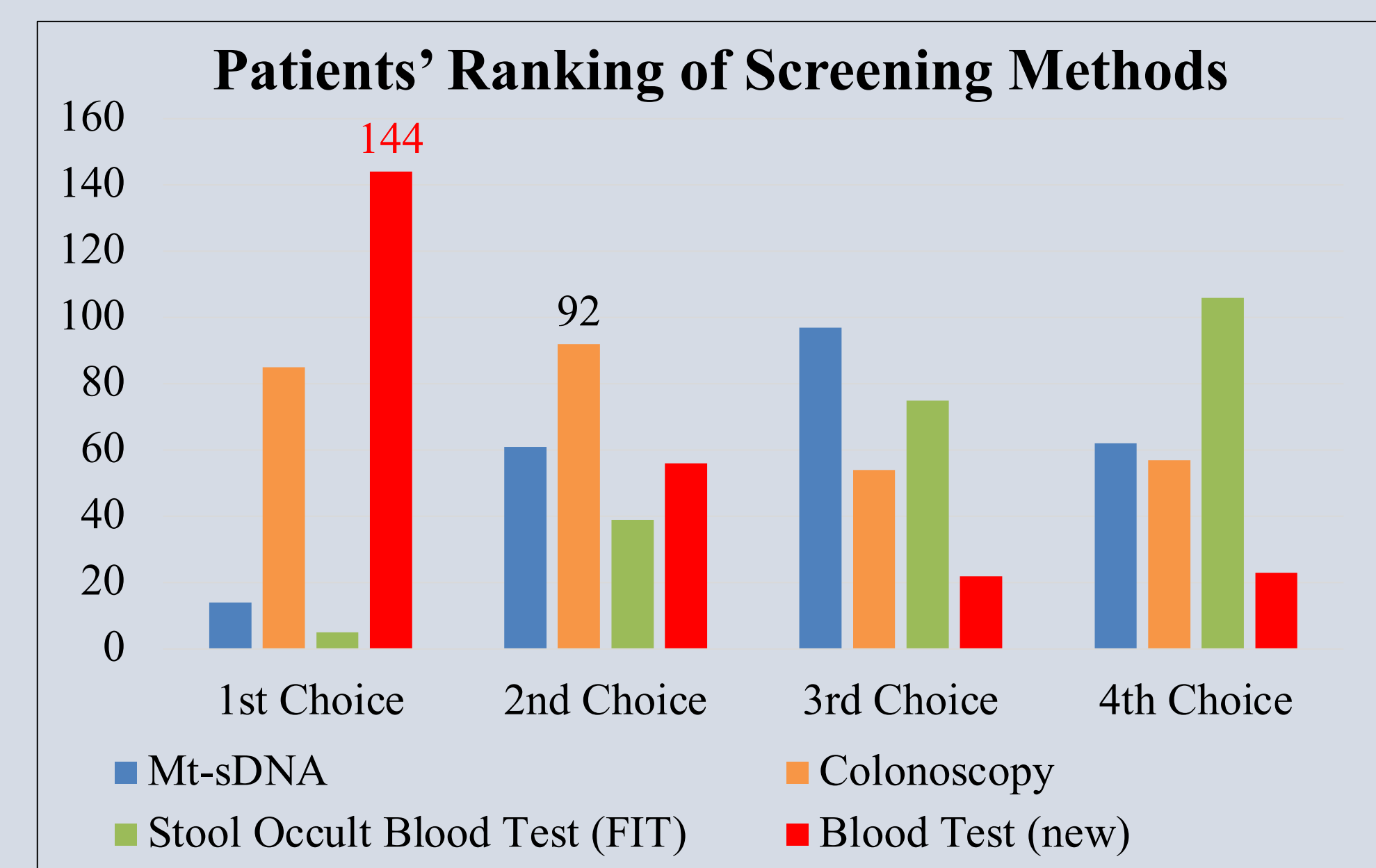
-Standard statistical methods and Google Forms analytics were used to analyze the data.



**Figure 3.** Factors of the Blood Test that GI and PC patients found appealing (Patients selected one or more responses.)



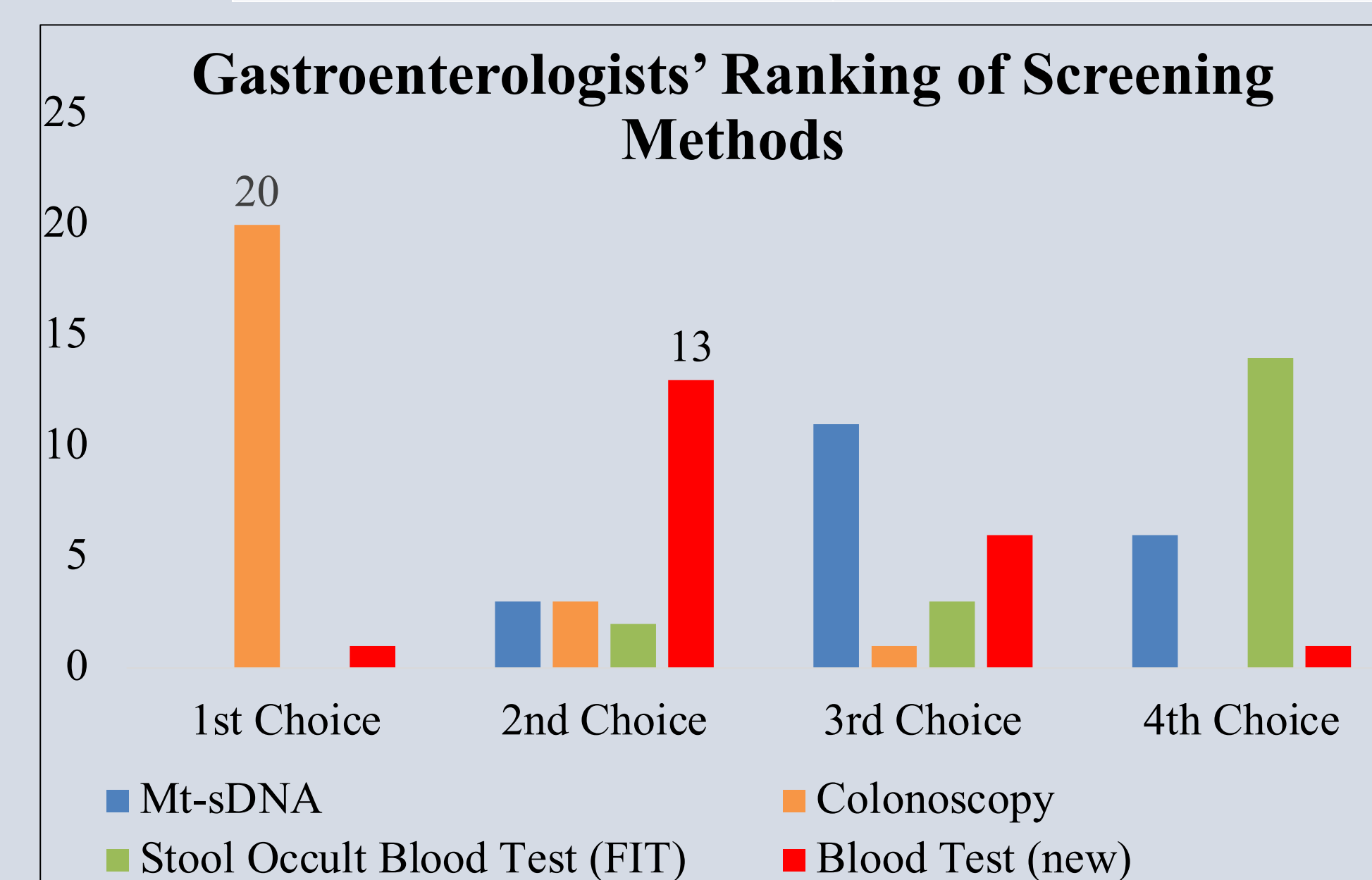
**Figure 1.** Factors of a CRC screening test important to GI and PC patients ("Effectiveness" ranked most important, followed by "Safety")



**Figure 2.** GI and PC patients' ranking of CRC screening tests

**Table 1.** GI and PC patient background information

Variable for Patients	Number of Participants (n=248)
<b>Participant Location</b>	
Borland Groover	186 (75.0%)
Primary Care (Jacksonville)	62 (25.0%)
<b>Sex</b>	
Male	86 (34.7%)
Female	162 (65.3%)
<b>Previously Screened for CRC</b>	
Yes	195 (78.6%)
No	53 (21.4%)
<b>Awareness of Existing Screening Methods</b>	
Barium Enema	72 (29.0%)
Mt-sDNA	156 (62.9%)
Colonoscopy	244 (98.4%)
Flexible Sigmoidoscopy	71 (28.6%)
Stool Occult Blood Test (FIT)	114 (46.0%)



**Figure 4.** Gastroenterologists' ranking of CRC screening tests

## RESULTS:

-The responses of 186 GI patients, 62 PC patients, and 21 Gastroenterologists were included in the survey (Table 1).

-Patients from both cohorts rated "Effectiveness" and "Safety" as the most important criteria for a CRC screening test (Figure 1).

-Prior to introducing the experimental BBST, patients from both cohorts preferred colonoscopy (69%) over both multi-target stool DNA tests (MT-sDNA) and fecal immunochemical tests (FIT). After introducing the BBST, patients from both cohorts ranked BBST (58%) as their top choice over colonoscopy, Mt-sDNA, and FIT (Figure 2).

-In both patient cohorts, "Effectiveness," "Lack of Invasiveness," and "Absence of Risk" were the main features of the BBST that made it appealing (Figure 3).

-Prior to introducing the BBST, Gastroenterologists (M<sub>age</sub> = 51, Male=77%) preferred colonoscopy over Mt-sDNA and FIT. After the BBST was introduced, colonoscopy remained the preferred choice of Gastroenterologists over BBST, Mt-sDNA, and FIT (Figure 4).

-Most of the Gastroenterologists (91%) had previously undergone a colonoscopy, and 14% had previously had a Mt-sDNA test.

-All of the Gastroenterologists discussed colonoscopy with their patients, but only 59% discussed Mt-sDNA.

-Patients from both cohorts felt positively about the usefulness of CRC screening (76% "Strongly Positive").

-186 patients (75%) said they had "No Preference" for the gender of their Gastroenterologist.

## Conclusions:

1. Our study highlights the appeal of a Blood-Based Screening Test over current CRC screening tests amongst patients in both gastroenterology and primary care settings.
2. Blood-Based Screening Tests have the potential to improve currently low screening rates.
3. Increasing the frequency of Blood-Based Screening Tests from every 5 to every 3 to every 1 years did not reduce its appeal across all three cohorts.
4. There was a clear divergence in preference between patients and Gastroenterologists. Patients preferred BBST over colonoscopy, and Gastroenterologists preferred colonoscopy over BBST. Shared decision making may help narrow this gap.

## References:

1. Adler, A., Geiger, S., Keil, A., Bias, H., Schatz, P., deVos, T., ... & Wiedenmann, B. (2014). Improving compliance to colorectal cancer screening using blood and stool based tests in patients refusing screening colonoscopy in Germany. *BMC gastroenterology*, 14(1), 1-8.
2. Nian, J., Sun, X., Ming, S., Yan, C., Ma, Y., Feng, Y., ... & Wang, X. (2017). Diagnostic accuracy of methylated SEPT9 for blood-based colorectal cancer detection: a systematic review and meta-analysis. *Clinical and translational gastroenterology*, 8(1), e216.
3. Ling, B. S., Moskowitz, M. A., Wachs, D., Pearson, B., & Schroy III, P. C. (2001). Attitudes toward colorectal cancer screening tests: a survey of patients and physicians. *Journal of general internal medicine*, 16(12), 822-830.