

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.^{1,2,3}

-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.

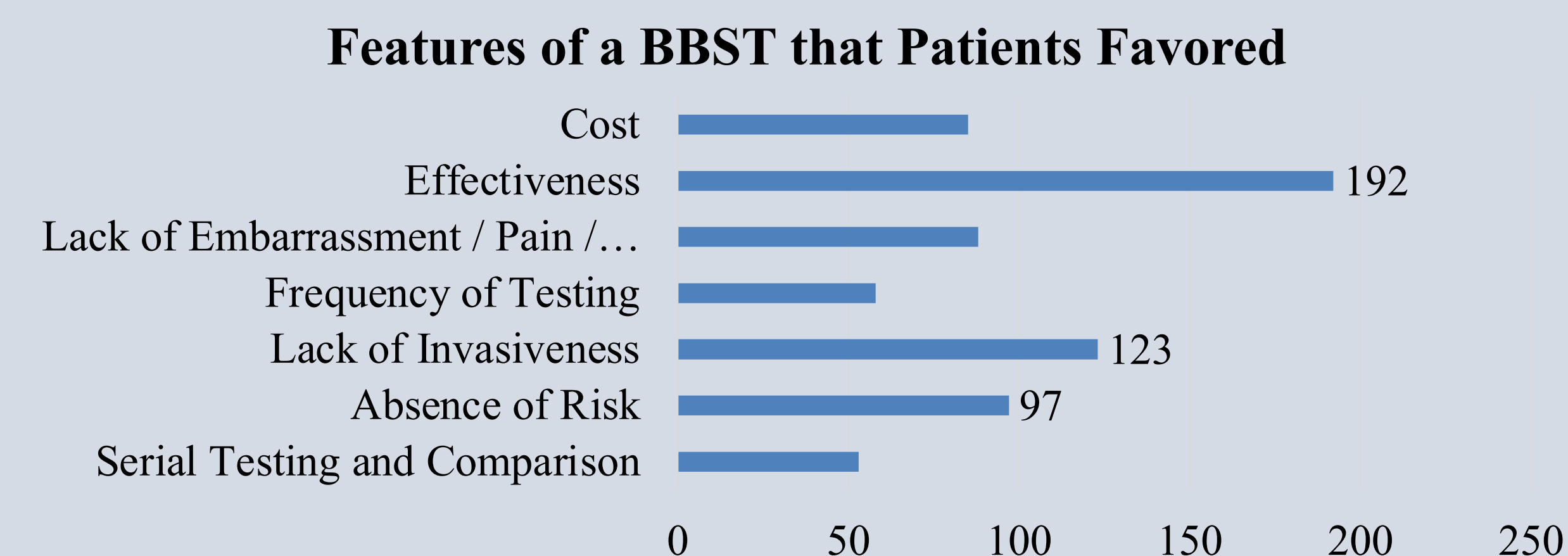


Figure 3. Factors of the Blood Test that GI and PC patients found appealing (Patients selected one or more responses.)

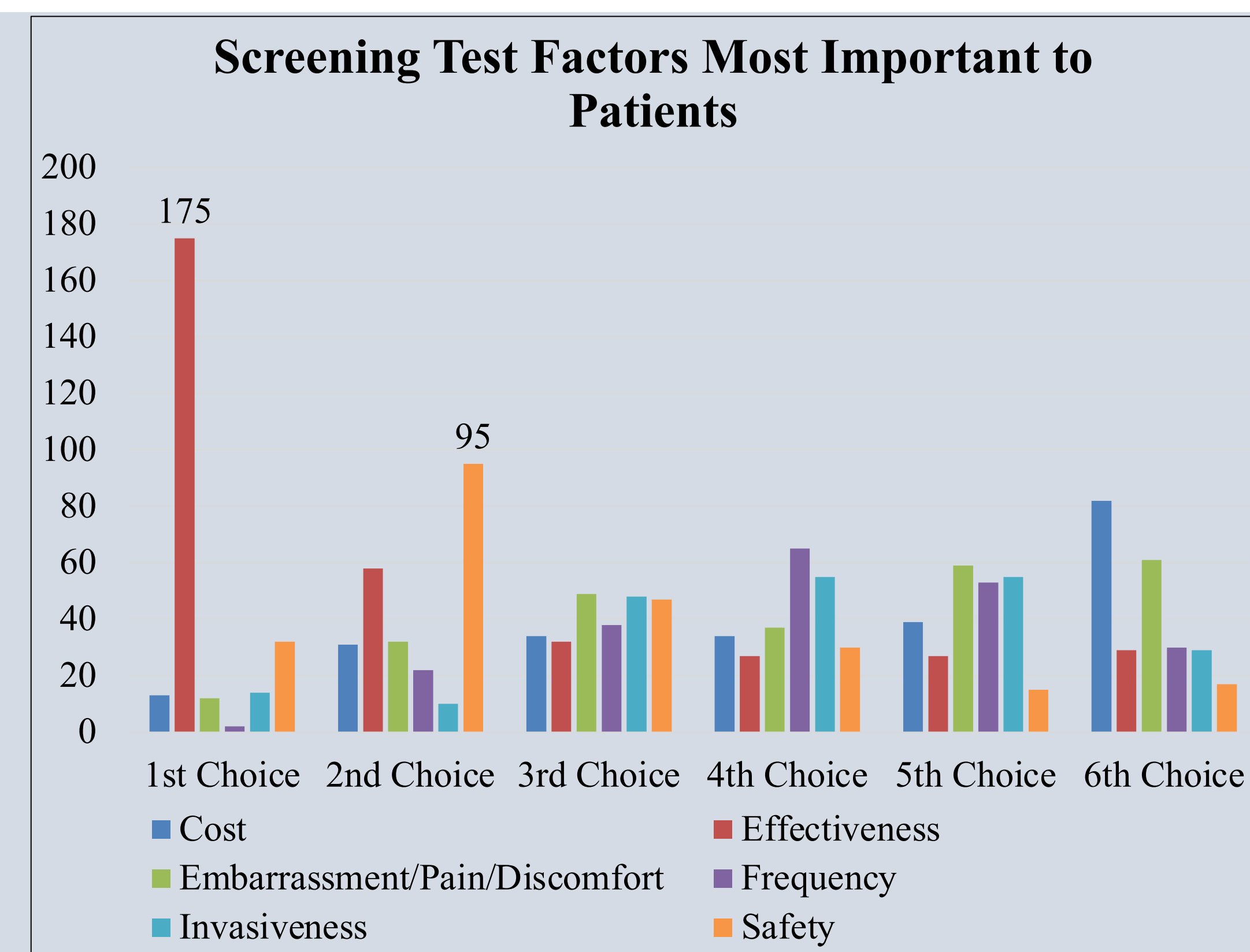


Figure 1. Factors of a CRC screening test important to GI and PC patients ("Effectiveness" ranked most important, followed by "Safety")

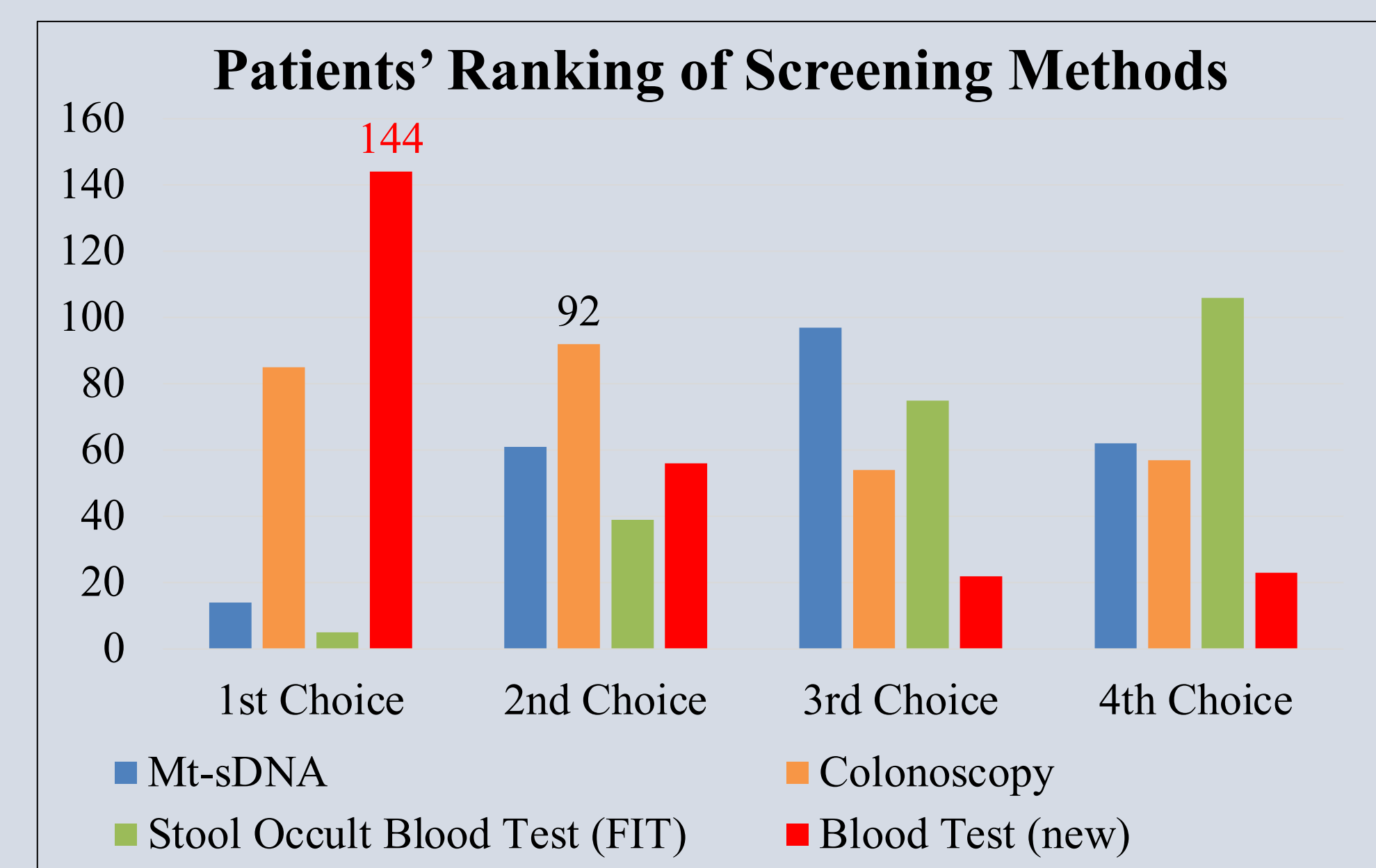


Figure 2. GI and PC patients' ranking of CRC screening tests

Table 1. GI and PC patient background information

Variable for Patients	Number of Participants (n=248)
Participant Location	
Borland Groover	186 (75.0%)
Primary Care (Jacksonville)	62 (25.0%)
Sex	
Male	86 (34.7%)
Female	162 (65.3%)
Previously Screened for CRC	
Yes	195 (78.6%)
No	53 (21.4%)
Awareness of Existing Screening Methods	
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%)

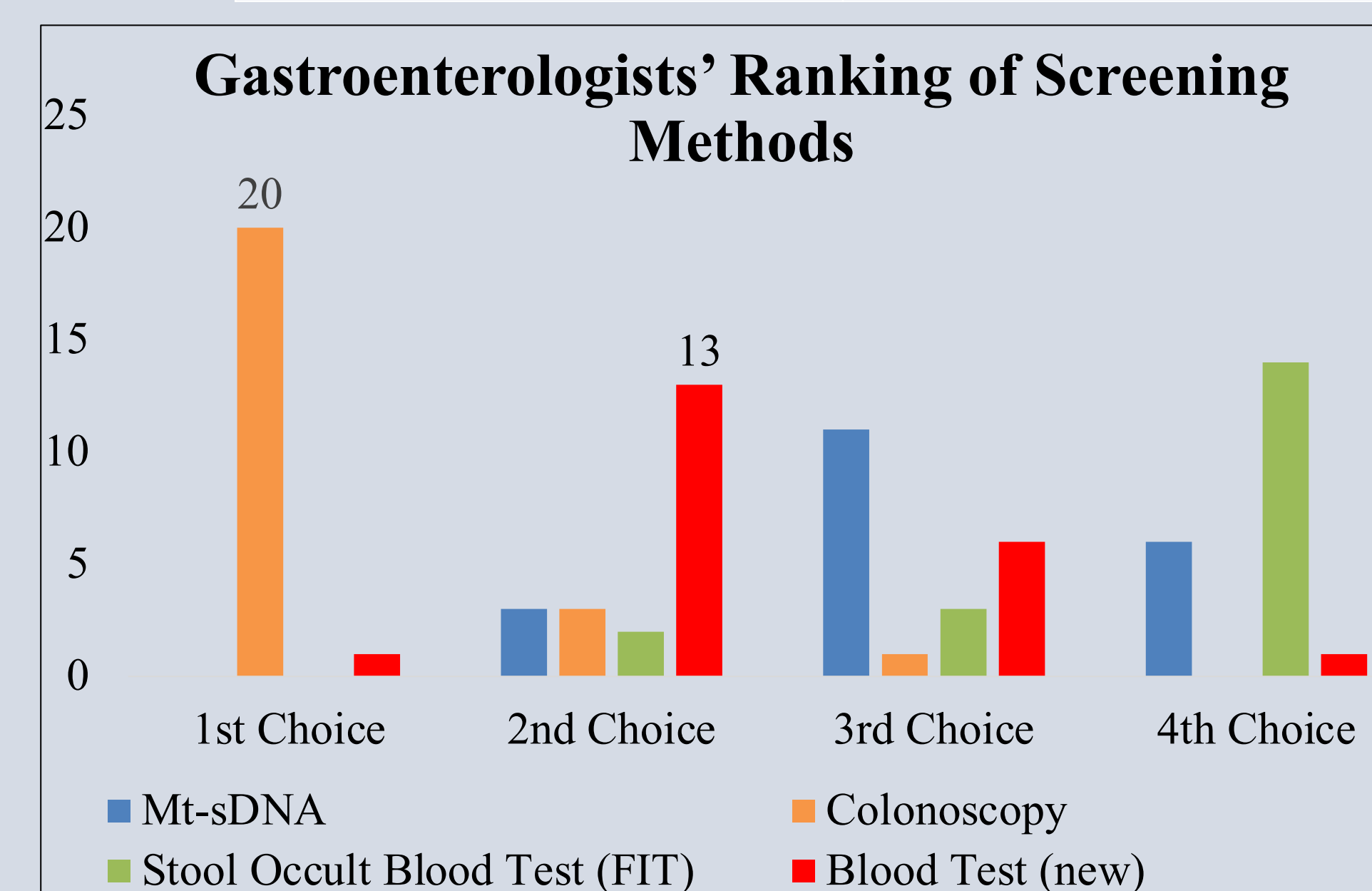


Figure 4. Gastroenterologists' ranking of CRC screening tests

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_{age} = 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.