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“Simple and Easy:” Providers’ and Latinos’ Perceptions of the Fecal Immunochemical Test (FIT) for Colorectal Cancer Screening

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Abstract

Objective: Colorectal cancer (CRC) screening efforts have effectively reduced CRC morbidity and mortality, yet screening remains relatively low among Latinos. The study’s purpose was to document the awareness/knowledge of Fecal Immunochemical Test (FIT) among Latinos, gain

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Manuscript Contribution:

- Conceptualization, study design, implementation, manuscript preparation, edits, and final approval – Aguado Loi, Martinez Tyson, Chavarria, Davis, Meade, Gwede
- Tables, recruitment, and data collection – Aguado Loi, Martinez Tyson, Gutierrez, Klasko, Gwede
- Recruitment, paper approval – Lopez, Johns

The authors have no conflict of interests to disclose and have approved the final article.

Ethical Compliance

The university’s Institutional Review Board approved the study procedures, which were performed in accordance with ethical standards as laid down in the Helsinki Declaration of 1975, as revised in 2000. Additionally, this study received cancer cancer’s Scientific Review approval.

I confirm all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

better understanding of patient and health care provider perceptions about FIT, and explore the feasibility of adoption/uptake.

Design/Methods: The study was guided by qualitative, ethnography design and methods. Eight focus groups (FG) with patients who self-identified as Hispanic/Latino between 50–75 years of age and key informant interviews with providers (N=10) were conducted followed by a brief demographic questionnaire.

Results: Awareness levels varied based on prior screening experiences among patients and providers. Both patients and providers believed the FIT is simple and easy to use; although, a minority of patients expressed doubts about the efficacy of the FIT when compared to colonoscopy.

Conclusions: Despite the increasing acceptance of the FIT among the health care community, a significant lag time still exists among our study's populations. Study findings speak to novelty of the FIT test among underserved populations and the health disparity gap between health innovations/discoveries. Increased awareness and education efforts about the efficacy coupled with information about its accessibility, ease, and user instructions may increase the adoption of FIT.

Keywords

Colorectal cancer; screening; health education; community perceptions; fecal immunochemical test

1. Introduction

Colorectal cancer (CRC) is the second leading cause of cancer-related deaths in the United States, including among Latinos (American Cancer Society 2015a, 2017). This statistic is of concern as the Latino population in the US is expected to triple its current size by 2050 (Kotkin 2010). Although CRC is one of the most detectable, preventable, and treatable cancers (Rex 2008, Winawer 2015, Siegel et al. 2015), Latinos are less likely to be diagnosed with early stage CRC than non-Hispanic Whites (Siegel, Naishadham, and Jemal 2012). Timely and consistent CRC screening and early detection efforts have effectively reduced CRC morbidity and mortality, yet CRC screening remains low among Latinos (Fernandez et al. 2008, Buscemi et al. 2017, Nagelhout et al. 2017, American Cancer Society 2015b). New scientific advancements in screening and early detecting modalities have emerged to address some of the commonly cited impediments to screening among Latinos, which in turn could greatly reduce the CRC health disparity gap. Furthermore, national goals for Healthy People 2020 call for increasing screening rates for CRC to 70% (U.S. Department of Health and Human Services 2014). Other national organizations (e.g., American Cancer Society) have set an even more laudable goal of achieving 80% screening rates by 2018 (Centers for Disease Control and Prevention 2016, Simon 2015).

The American Cancer Society and the US Preventative Task Force recommend that asymptomatic adults at average risk for CRC begin screening at 50 years of age, using myriad options which include, but are not limited, to the following: (1) colonoscopy every 10 years and (2) annual fecal occult blood test (FOBT) or high-sensitivity and high-specificity fecal immunochemical test (FIT) (American Cancer Society 2015a, Gwede et al.

2015, Pignone and Sox 2008). Despite the availability of various CRC screening options, half of all US adults aged 50 years and older are not up-to-date with the national screening guidelines (Centers for Disease Control and Prevention 2012).

Given the growing national imperative to improve CRC screening, an acute challenge is to develop effective patient-centered and clinic-based strategies to improve screening rates in federally qualified health centers (FQHCs) using tests that are accessible, acceptable, affordable and actionable. Albeit colonoscopy is considered the most thorough CRC screening modality, FIT testing offers a promising first option for patients who face barriers to colonoscopy screening. In fact, FOBT tests have shown to reduce CRC mortality by 30% and incidence by 20% (Allison 2005, Levin 2011, Mandel 2008, Quintero et al. 2012, Sanford 2009). However, at the time this study was launched, FIT testing was relatively new in FQHC settings and little was understood about its acceptability among Latino populations. The partnering FQHCs were using three-card fecal occult blood tests (FOBT) and use rates were poor. However, the clinics expressed strong desire to convert to the simpler and high specificity/high sensitivity FIT if it was shown to be more acceptable in this setting and for this population. Thus, the purpose of this study was to explore Latinos' perceptions of a relatively new CRC screening modality, FIT to (1) document the awareness/knowledge of the FIT test among Latinos, (2) gauge general perceptions of providers and patients about the FIT test, and (3) explore the feasibility of adoption/uptake to ameliorate disparities among Latinos. In the long-term, partnering FQHCs would use this information to guide future directions for implementing innovations or new screening modalities in other disease areas as well.

2. Subjects and Methods

2.1 Setting and overview

The study was conceptualized, designed and implemented within the context of a larger ongoing community-based participatory research (CBPR) program, Tampa Bay Community Cancer Network (TBCCN) (Gwede et al. 2015), a network of community partners dedicated to tackling health disparities in the Tampa Bay area. The concept for this study originated from an identified community need to address barriers to CRC screening and to reduce the unequal burden among Latinos. Given the dearth of materials or studies among these communities, Latinos CARES (Colorectal Cancer Awareness, Research, Education and Screening) was developed. As guided by ethnographic study methods, the study herein focuses on the employed use of focus groups and key-informant interviews. The results of these laid the foundation for the adaptation and transcreation of a low-literacy Spanish-language CRC educational materials (video and photonovella) for Latinos to inform patients about this new CRC screening test modality.

This study was theoretically informed by the Preventive Health Model (McQueen, Tiro, and Vernon 2008, Myers et al. 2007, Tiro et al. 2005). This model has been shown to predict CRCs intention and behavior in multi-ethnic populations (McQueen, Tiro, and Vernon 2008, Myers et al. 2007, Tiro et al. 2005). PHM constructs include salience and coherence, perceived susceptibility, self-efficacy/response efficacy, cancer worries, and social influence.

These constructs contributed to the development of the focus group guide and provided a blueprint to organize themes during interpretation and reporting.

2.2 Community advisory board

A bilingual (English and Spanish) community advisory board (CAB) informed research efforts from conceptualization through data analysis. Members from the CAB were identified from TBCCN partner organizations and represented individuals from diverse Hispanic heritage including from Caribbean, Central and South America. CAB members ensured that the study design and data collection, data analysis and interpretation and materials content were culturally, linguistic and literacy salient by offering suggestions on wording, phrasing of instruments and materials as well as providing ideas on recruitment strategies and meaning of results.

2.3 Instruments

The focus group and key informant interview guides (see table 1) were co-developed with the CAB, including representatives from FQHCs. The published literature also directed the content of the interview guides (Gwede et al. 2011, Gwede et al. 2013, Gwede et al. 2015, Kelly et al. 2007, Tarasenko et al. 2011, Walsh et al. 2010).

The focus group objectives were to identify patients' beliefs and attitudes about general CRC screening, reactions to the FIT (acceptability, overall perceptions, barriers, motivators) and elicit strategies for improving CRC screening (FIT) uptake among patients. A brief demographic survey was also used to collect basic patient demographic information.

The key informant guide objectives were to assess health care providers' perspectives on the following content areas, with an emphasis on FIT: (1) CRC information needs of patients, (2) factors that prevent or facilitate patient-provider discussion of CRC screening, (3) strategies that enhance the efficacy of educational materials to increase CRC screening, (4) factors that prevent or motivate uptake of CRC screening, and (5) communication strategies and resources to enhance follow-up with CRC screening recommendations.

2.4 Eligibility and study participants

Focus group participants (Table 2) included men and women aged 50–75 years of age who self-identified as Hispanic/Latino; are able to read, speak and understand Spanish; and prefer to receive health information in Spanish. Participants were FQHC patients recruited in clinics or community settings (herein referred to simply and collectively as patients). Regarding educational level, most 67% had a high school diploma/GED or less years of schooling. Most participants reported having health insurance, albeit their health insurance could have been county provisioned health insurance. Over a third (38.8%) of participants were not up to date on CRCs. A majority of participants (89.8%) were born outside of the U.S. representing a diverse number of counties/territories (e.g. Puerto Rico, Mexico). Most participants (59.2%) for the focus groups were recruited from among community sites that serve underrepresented populations.

Key informant (KI) participants (Table 3) were health care providers from diverse racial/ethnic backgrounds and health care professions. Eligible health care professionals included primary care physicians, nurse practitioners, and physician assistants whose usual role included identification of individuals eligible for CRC screening (herein referred to collectively as providers), included education and recommending CRC screening as per age appropriate guidelines. The median age of providers was 37 and age range 30–64. A majority of providers were female (60%) and self-identified as white (60%). Half (50%) of the providers were physicians. The majority (70%) of providers had worked in community clinics that served the medically underserved for over 5 years.

2.5 Procedures

Trained, bilingual and bicultural research staff members recruited patients and health care providers from FQHCs and other community settings. Data collection occurred in the fall of 2014 through spring of 2015. Recruitment efforts spanned different local geographic regions to ensure a diverse population of Latinos including rural and urban community settings. Non-probability, purposive and snowball sampling was employed.

A research staff member assessed eligibility for focus group participation. Eligible participants were assigned to a focus group based on previous CRC screening status (previously screened vs. never screened). Each of these groups was conducted separately according to the group's screening status. Eight focus groups (n=49) were conducted in Spanish and led by two experienced bilingual moderators. Patients were provided a description of the FIT kit in Spanish. The description included the purpose of the FIT kit, sample kit with a description of the collection steps, storage and shipping. A research staff member modeled the steps using a FIT kit as they were described. Focus groups were audio recorded and lasted between 1.5–2 hours. Completion of the demographic questionnaire and a brief question and answer session followed the focus group to address any unanswered questions about CRC screening.

Key informant interviews were held at the provider's site. Interviews were conducted by two trained research staff members, audio recorded and averaged 30–40 minutes. Providers were provided a description of the FIT kit as if they had never heard of it.

This study received the university's Institutional Review Board and cancer center's Scientific Review approval. All participants signed informed consent forms prior to engaging in any research study activities. All participants in this study received a \$30 incentive.

2.6 Data analysis

Verbatim transcripts were created for each focus group and provider interview in the primary language (Spanish or English) conducted. Both qualitative data sources were analyzed separately using applied thematic analysis using ATLAS.ti v7.0. The data were coded and analyzed by two bilingual investigators. Discrepancies were discussed until consensus was reached for all transcripts. Emergent codes centered on perceptions of FIT.

The investigators used the study's theoretical model to guide the organization of preliminary findings, allowing for the inclusion of emergent themes that did not fit within each of the theory's constructs. The investigators further looked for synergy and distinctions among the two participant groups (patient focus groups and provider interviews) in the results. The findings were summarized and shared with the CAB to ensure culturally appropriate interpretation of the results. CAB members confirmed findings and provided additional insight that further shaped final results. This iterative process was used to assess trustworthiness (validity) of findings.

3. Results

The results reflect cross cutting themes that transcend both patient and provider perspectives as well as distinct themes between these groups. Table 4 summarizes the list of themes by participant group (focus groups and key informant participants). Focus group specific themes are noted as 'FG patient' and key informants as 'KI provider'.

In exploring perceptions of the FIT test, many of the commonly known impediments to CRC screening emerged (e.g., lack of health insurance, embarrassment, fear) in both patient and provider groups. Commonly cited facilitators were also discussed (e.g., family history, peer/family support, physician reminders) among all participant groups. This paper focuses on reactions to the FIT test, thus findings reflect several themes that fall into three overarching focus areas: 1) awareness/knowledge of FIT test, 2) perceptions specific to the feasibility of adoption/uptake of the FIT test, and 3) messaging/communication of the FIT test to patients.

3.1 Awareness and knowledge about the FIT test

There were varying informational needs and awareness and knowledge levels based on FG patients' previous experiences with screening (previous screening vs. never screened). KI providers' knowledge about the FIT test also was limited as their organizations had not yet introduced the FIT test as the primary modality of screening.

3.1.1 Limited knowledge and awareness—Patients who had previous experience with CRC screening were familiar with CRC screening tests in general, but expressed none to limited familiarity with the FIT test. Instead, other examples of FOBTs such as a 3-card test or parasite tests commonly practiced in South American countries were discussed. Limited to no knowledge and awareness of CRC screening, including the FIT test, was more evident among the never screened FG group patients. Those who had some awareness were cognizant of cancer screening and existing approaches, but unfamiliar about specific screening tests/procedures, resources, or guidelines regarding CRC screening.

Patients in the never screened groups exhibited greater difficulty in understanding the questions that discussed “detección de cancer temprano” (early detection) or “exámenes para detectar el cancer temprano” (test for early detection). Awareness was more evident among the group when “CRC screening” terminology was rephrased “chequeo de cáncer” (checking for cancer) or “exámenes para el cáncer” (exams for cancer).

Overall awareness about CRC screening and the FIT test among providers was high; however, knowledge level of FIT varied. At the time of the interviews, the FIT test was not part of usual care at the respective FQHCs. Most providers and their organizations were still recommending the traditional 3-card FOBT (e.g., Guaiac based test).

3.1.2 Informational needs—Among patients, there was confusion about what a positive result meant, process for locating and returning the FIT kits, cost and follow-up if cancer is detected. Furthermore, patients in focus groups from rural areas, especially among patients who were never screened, were more likely to be unfamiliar about the anatomy of the colon. Thus, pictures and a verbal description were used to move forward with the discussion.

Informational needs among providers were specific to the newer FIT. Although most were familiar with the three- card FOBT sample collection methods, most providers were unfamiliar with the FIT collection process, its sensitivity and specificity, as well as general acceptability and reactions to FIT among their patient populations. Even though FIT is relatively inexpensive, providers generally felt that FOBT was more affordable than FIT—a feature that served to perpetuate use of FOBT in this setting (despite the poor FOBT use rates).

3.2 Perceptions of feasibility of adoption and uptake of the FIT test

3.2.1 Acceptability—During focus groups, patients were provided a description of the FIT test, shown a FIT kit, and how to collect a single sample using the kit. Overall, the reactions were favorable and encouraged further discussion among the participants who were unfamiliar to the FIT test who wanted to know, “Where can I get a test? Can I take one home?” Regardless of the FG participant’s CRC screening status, they felt it was easy and simple to use. Both patients and providers felt FIT was more acceptable than the FOBT and the colonoscopy since it required collection of only one sample. They appreciated and valued its potential to overcome barriers such as lack of transportation, and embarrassment since it could be done at home. There was general agreement among patients and providers about its ease of storage, ability to maintain privacy, and ease of return (e.g., mail or in person). However, there was concern shared among some patients about the unpleasant nature of dealing with fecal matter and challenges with passing a stool in general.

3.2.2 Motivated to stay healthy—Patients also discussed wanting to live longer and have good health for their family. They were highly motivated to talk with their health care providers about the FIT test. They also wanted information about how and where they could access the test.

3.2.3 CRC screening impediments—Main concerns expressed among both participant groups were costs related to screening tests including the FIT test itself and subsequent follow-up costs upon a positive FIT test result. Fear also was mentioned about cancer diagnosis and undergoing additional, possibly costly, follow-up tests. Commonly held beliefs and social norms (cancer as a taboo, machismo, and male resistance) were also acknowledged and discussed by both patients and providers as impediments to screening.

3.2.4 Trustworthiness of test—Although the FIT test was seen favorably due to its simplicity, a few FG participants expressed some doubts. Particularly, those who were familiar with colonoscopy were concerned about the FIT’s effectiveness as compared to colonoscopy. In contrast, those who never been screened were keen on process questions and the types of results that would be produced from the FIT test. They had questions such as: “*What does a positive result means? Do I have cancer if positive?*” Regardless of FG participants’ screening status, there was some skepticism about the reliability and accuracy of the FIT test. For example, FG participants were concerned about the reliability of the sample after being exposed to environmental elements (e.g. heat) during mailing. Some FG participants also questioned the test’s ability to discern the origin of the blood and to detect occult blood.

The majority of the providers interviewed viewed colonoscopy as the gold standard for screening. Screening through a FOBT/FIT was seen as a second best option, and described as a viable means to address access issues such as lack of health care insurance.

3.3 Messaging and Communication

Providers shared a variety of impediments to CRC discussions and screening as well as strategies to overcome them. Impediments included unavailability of educational materials for patients with low literacy levels or limited English proficiency, lack of health insurance, and fear. Patients echoed this educational material/information void. Common strategies to engage patients in a CRC screening dialogue included personalizing messages to emphasize the importance of early prevention and describing screening as life-saving. FIT was offered as an alternative solution to colonoscopy as a strategy to overcome access to costly screening or among individuals unlikely to up-take colonoscopy. Another access strategy used by providers included asking clinic staff and family to serve as the patient’s interpreter to overcome language barriers.

There was general consensus among providers that health education materials are valuable and serve as a primer to engage patients in dialogue about screening. Providers also felt that preparatory education strategies would facilitate more informative conversations about screening. Both patients and providers identified the long clinic waiting time as an optimal time for educating patients about CRC and screening.

4. Discussion and Conclusion

4.1 Discussion

Most of the current research on barriers and facilitators to CRC screening has focused on FOBT and colonoscopy. Research specific to FIT testing has recently gained attention, especially among the international scientific community (Sinnott et al. 2015, Chiu and Chen 2015). Research conducted by Coronado and colleagues (Coronado et al. 2015), suggest that English speaking individuals had more awareness of FIT testing than Spanish speaking individuals. Beyond such aspects, prior to the current study perceptions specific to the feasibility of the uptake of the FIT was unknown for Latinos who prefer to receive health information in Spanish. This study sheds further light on Latino perceptions about the FIT,

perspectives on FIT testing from health care providers, and informs findings relevant to the messaging/communication of FIT to Latinos.

4.1.1 Overall there was a lack of awareness of the FIT test—A cross-cutting theme from both patients and provider data was the lack of knowledge on the newer FIT. At the time this study was conducted, FIT was relatively new. In fact, FIT was endorsed by a body of physicians in 2008 to replace the older FOBT (Lee, Boden-Albala, et al. 2014, Lee, Liles, et al. 2014). Yet, 6 years later, many of the health care providers interviewed were from FQHC that had not yet transitioned to the FIT and were primarily using the guaiac-based FOBT, which may limit opportunities to have patient-provider discussions about the FIT. It is expected that as additional clinical institutions adopt the FIT into standard practice, awareness will increase among providers and concerns over cost of FIT may be mitigated by increased acceptance and uptake by patients.

Among focus group participants, general CRC screening awareness appeared low during initial conversations with groups who were never screened especially among those that took place in rural areas. Using additional plain language examples to describe general CRC and screening concepts mitigated this challenge. Participants, regardless of past CRC screening history, had generally low awareness and knowledge of the FIT test. These findings speak to novelty of the FIT test among underserved populations and the health disparity gap between health innovations/discoveries (Chu et al. 2008, Freeman 2004). Despite the increasing acceptance of the FIT among the health care community (Lee, Boden-Albala, et al. 2014, Lee, Liles, et al. 2014), a significant lag time still exists among our study's populations.

Our findings did support that those patients who had prior experiences with traditional 3-card FOBT testing were more familiar with the general process of collecting an annual stool specimen. This also applies to providers who generally use the older FOBT. Both segments of the study population can be viewed as the low-hanging fruit to initiate intervention efforts. Thus, intervention efforts can begin to engage this group to perform a simpler test.

Informational needs were driven by multitude of factors including knowledge and awareness level and prior experience or participation in CRC screening. Participants' questions were directed mostly on clarifying the process of FIT collection, mailing and testing, but a few participants, particularly those who were never screened, were skeptical or had doubts about effectiveness and trustworthiness of the FIT test. This is important to note as each commercially available FIT option have varying performance characteristics (e.g., differences in sensitivity/specificity) (Lee, Liles, et al. 2014). Messaging from providers or from strong marketing campaigns that emphasize one screening option (e.g., DNA test, colonoscopy) may influence Latinos' views on screening effectiveness. There are national efforts from the American Cancer Society and National Colorectal Cancer Round Table Consortium to unify messaging among various stakeholder groups (e.g., providers, patients, insurance companies).

4.1.2 Overall enthusiastic response to FIT test—Focus group participants provided enthusiastic feedback and positive reactions to the FIT test, demonstrating potential receptivity and acceptability. Although some of the commonly cited impediments to CRC

screening were mentioned, findings suggest that participants were less apprehensive about FIT [compared to colonoscopy], citing it as simple, easy to use, and private.

Latinos in this study can be viewed as late adopters to FIT, according to Rogers et al.'s (Rogers 2003) Diffusion of Innovation Theory. However, findings support that Latinos may be viewed as innovators or early adopters to FIT when provided with educational resources that are salient and reflect their situational circumstance as supported by the Preventive Health Model (McQueen, Tiro, and Vernon 2008, Myers et al. 2007, Tiro et al. 2005). Several elements are required for innovations such as FIT to become adopted widespread. However, impediments in the social system (e.g., policy), adopters (e.g., FQHC late adoption of FIT), and communication channels (e.g., lack of culturally salient material) can limit the rate of FIT adoption among underserved populations.

The U.S. Service Prevention Task Force recommends both FIT and colonoscopy as primary methods for CRC screening (U. S. Preventive Services Task Force et al. 2016). Yet, providers viewed the FIT test not as an effective primary option, but as a means to overcome access and other structural barriers related to CRC screening. However, attitudes towards FIT were favorable to achieve the goal of an up-to-date CRC screened patient. These findings support a survey conducted by Baker and colleagues (Baker et al. 2015), that examined clinicians' attitudes, practice patterns, and perceived barriers to CRC screening. Participants in the study agreed that colonoscopy is less accessible to patients than FOBT tests. A possible recommendation is to increase awareness of FIT and to educate providers about the Task Force recommendations, and emphasize the message that "the best test is one that gets done" (Gupta et al. 2014). When patients are given a choice, many patients prefer FIT to colonoscopy (Inadomi et al. 2012). Further, recent studies have seen greater up-take in CRC screening in practices that offer FIT (Khalili, Higuchi, and Ananthakrishnan 2015, Verma et al. 2015). This is an important consideration among FQHCs and community clinics aiming to meet two of the most widely used sets of health care quality performance measures for chronic disease screening in the US (e.g., Uniform Data Standards [UDS] and Healthcare Effectiveness Data and Information Set [HEDIS]) (US Department of Health and Human Services 2015, HEDIS 2016).

4.1.3 Messaging should consider literacy, and social norms, beliefs and practices—This study's findings demonstrated that there is still a need to address certain Latino cultural beliefs (e.g., cancer as taboo, machismo) and reduce fear and possible stigmatization from communities and their families. CRC screening promotion messages should be responsive to these realities and address these beliefs. This reasserts the literature on addressing the appropriateness of health information for the user (Doak, Doak, and Meade 1996).

Messages should also empower patients with the information needed to understand the saliency and relevance of CRC screening, where to access the FIT kit, how to complete the test, and follow-up procedures in plain language avoiding technical words like early detection in Spanish. Providers and other health related staff should be vigilant to the patients' awareness and knowledge level. Latinos with low awareness and knowledge on

CRC screening may need additional information on the human anatomy (e.g., Where is the colon?) before engaging them in CRC screening discussion.

Messages may also consider including general reactions garnered in this study such as the FIT test simplicity and privacy when raising awareness of the FIT test. There was also a need of Spanish education materials. The availability of these materials was seen of great benefit and would facilitate CRC screening discussion with patients. Moreover, capitalizing on long wait times to provide this education was seen as promising strategy to engage patients in CRC screening education (e.g., education video), and such a strategy is supported by other studies (Gwede et al. 2015, Davis et al. 2016). Health clinics could also empower non-clinician staff in CRC prevention/education strategies. Preparatory education would help increase patient knowledge and awareness and prime patients about CRC screening before they see their providers.

Finally, messaging about health care innovations/discoveries must also aim to reach various disadvantaged populations such as Latinos and the institutions that serve them. As evidence from this study's findings, awareness and knowledge of FIT was limited among patients and providers. As new discoveries are introduced (e.g., DNA blood testing for CRC or advances in Precision Medicine), similar research methods as employed in this study are required to evaluate acceptance and to document information needs to further disseminate innovations.

4.2 Conclusion

Our study revealed low knowledge and awareness among patient and providers about the newer FIT. Findings also support high receptivity to this mode of screening. This suggests a need for increased education to increase awareness and adoption. This might be accomplished in a variety of ways. For patients, this might include the provision of dual-language patient education materials and media. For providers, it might entail brief educational updates at staff meetings to highlight innovations in CRC screening. Overall, the positive receptivity by providers is likely to position FIT as an important primary screening option (along with colonoscopy) for average risk individuals, consistent with national guidelines (U. S. Preventive Services Task Force et al. 2016).

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Table 1.

Illustrative questions on the Focus Group (FG) and Key Informant (KI) Guide according to the Preventive Health Model (PHM)

PHM Construct	Content Areas	FG Guide (Illustrative Questions)	KI Guide (Illustrative Questions)
Perceived Susceptibility Cancer Worry Social Influence	FG - Beliefs and attitudes about general colorectal cancer (CRC) screening KI - N/A	<ul style="list-style-type: none"> • What do you believe are the benefits of screening for CRC? • What kinds of things/reasons might make you less likely to get screened for CRC? • Who else may have an influence on your decisions about getting screened for CRC? (your family, pastor, etc.) 	---
Salience and Coherence Social Influence Self-efficacy/ response- efficacy	FG - Reactions to the FIT (acceptability, overall perceptions, barriers, motivators) KI - Patient factors that prevent or motivate uptake of CRC screening Factors that prevent or facilitate patient-provider discussion of CRC screening	<ul style="list-style-type: none"> • Has anyone in the group done this test in the past? • Have you heard of this test before today? • How do you feel about the FOBT test? For example, do you think it would be easy to do? 	<ul style="list-style-type: none"> • What are some situations where your patients who are 50 to 75 years of age may not follow through with your recommendation for CRC screening using either FOBT or other screening tests (e.g., colonoscopy)? • What are reasons for not wanting to be screened? (e.g. fear or procedure, lack of knowledge, not convinced of reliability of test, financial reason)?
---	FG - Strategies for improving CRC screening (FIT) KI - CRC information needs of patients Strategies to enhance the efficacy of educational materials to increase CRC screening Communication strategies and resources to enhance follow-up with CRC screening (FIT) recommendations.	<ul style="list-style-type: none"> • What information would help you ask your doctor or other health care provider for a CRC screening test? • If you wanted to get more information about getting tested for CRC where would you go? 	<ul style="list-style-type: none"> • What are some of your communication strategies that enhance the likelihood that patients who are recommended or referred for screening (e.g., FOBT, colonoscopy) follow through with the tests? • Are there resource(s) that could be added to your practice to ensure that all eligible patients receive CRC screening? • What specific messages would motivate your patients to do I-FOBT?

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Table 2.

Patient Focus Group Demographics, N=49

	Median	Range
Age (years)	63	51–75
	n	%
Gender		
Male	19	39
Female	30	61
Race		
White	22	44.9
Other	27	55.1
Ethnicity		
Hispanic	49	100
Education		
<HS	22	44.9
HS or GED	11	22.4
HS	16	32.7
Health Insurance		
Yes	32	65.3
No	17	34.7
Screening Status		
Up to date with CRCS	30	61.2
Not up to date	19	38.8
Nativity		
Born in US	5	10.2
Outside the US*	44	89.8
*Country of Origin		
Caribbean (Cuba, Puerto Rico, Dominican Republic)	15	34.1
North America (Mexico)	9	20.5
Central America (Honduras, Nicaragua, El Salvador)	3	6.8
South American (Chile, Ecuador, Colombia, Peru, Venezuela)	17	38.6
Recruitment Location		
Clinic	20	40.8
Community	29	59.2

Table 3.

Provider Demographics, N=10

	Median	Range
Age (years)	37	30–64
	n	%
Gender		
Male	4	40
Female	6	60
Race		
White	6	60
Black	2	20
Asian	1	10
Other	1	10
Ethnicity		
Hispanic	3	30
Non-Hispanic	7	70
Specialty/Training		
Physician	5	50
DO	1	10
PA	2	20
ARNP	2	20
Years working in FQHC		
1–5 years	7	70
>5 years	3	30
Screened for CRC *		
Yes	1	10
No	9	90

* 8 respondents were under age 50.

Table 4

Key Themes by focus group (FG) and key informant (KI) interviews

PHM Construct	FG Themes	KI Themes	Illustrative Quotes
Saliency and Coherence	<ul style="list-style-type: none"> Limited awareness and knowledge Information needs (interpretation of results, locating resources, FIT data collection process, anatomy of colon) 	<ul style="list-style-type: none"> High awareness but limited knowledge on how it worked Informational needs (FIT data collection process and patient's acceptability/reaction to FIT) 	<p><i>"It's completely normal to have it [stool test] done in my country...It's normal in the medical system there... the blood test, stool test, testing of...It's intriguing, and I have been in this country X years, that a stool test is not done; I am seeing that it's new in this country."</i> [Patient, Previously screened]</p> <p><i>"You're talking about the home base one [FIT]?... I won't be able to give you much information on that because I haven't had any patients do that method. I don't, I don't have much information"</i>[Provider]</p>
Saliency and Coherence Cancer Worry Perceived Susceptibility Social Influence Self-efficacy/ response-efficacy	<ul style="list-style-type: none"> High acceptability Feasible Motivated to stay healthy CRC screening impediments (cost, social norms e.g., taboos - machismo, fear) Trustworthiness of the test <ul style="list-style-type: none"> Colonoscopy viewed as the gold standard Reliability and validity of test were questioned 	<ul style="list-style-type: none"> High acceptability Feasible CRC screening impediments (cost, social norms e.g., taboos - machismo, fear among patients) Trustworthiness of the test <ul style="list-style-type: none"> Colonoscopy viewed as the gold standard and primary option FIT viewed as a viable option to overcome impediments related to access 	<p><i>"You do not have large cups with lids and putting one on the fridge or any of those things, it's small, simple, and easy for anyone who can't read."</i>[Patient, Never screened]</p> <p><i>"It is easier, and just in case they give it to me [FIT KIT], I'm going right now and mail it back"</i>[Patient, Never Screened]</p> <p><i>"Do not discuss cancer, because people do not come. It's a bad word."</i>[Patient, Never screened]</p> <p><i>Most of patients in that demographic do not have insurance, majority of them, I'd say 75% so the only one that we have is the occult blood test (3 cards)... Obviously the colonoscopy is preferred but the current program is five hundred dollars and it may as well will be a million as far as they're concerned, so I offer it but most of them decline. "</i>[Provider]</p> <p><i>"The problem with this is that...there isn't a guarantee...I think, a colonoscopy gives you information about the inside of the colon, while this [FIT] I think doesn't."</i>[Patient, Previously screened].</p> <p><i>"We do not recommend FIT, the first choice is to send them for a colonoscopy...but then of course when they're not funded, they don't want to go for that and then, the second better is the FIT, which is available, it's free for most of our patients. "</i>[Provider]</p>
Emergent Themes	<ul style="list-style-type: none"> Limited educational materials (Spanish, low literacy) Need to capitalize on long wait time 	<ul style="list-style-type: none"> Limited educational materials (Spanish, low literacy) Tailoring messages as an effective strategy Offering FIT when encountering access impediments Use staff or family members as interpreters Educational materials are optimal when they serve as a primer to patient/provider discussion Need to capitalize on long wait time 	<p><i>"You go to the doctor and they limit themselves to seeing you for 15 minutes. The truth is that they see you in a hurry and very often do not take enough time with you."</i>[Patient Previously screened]</p>

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