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Facilitators and Hindrances of Implementing Colorectal Cancer Screening Intervention among Vietnamese Americans

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Abstract

Background—Little is published about the factors that facilitate and hinder the intervention implementation process.

Objective—to examine factors that facilitated and hindered the implementation of a culturally-appropriate colorectal cancer screening intervention targeting Vietnamese Americans in a Federally Qualified Health Center located in the Puget Sound area of Washington.

Methods—Three focus group discussions (two during the implementation phase and one during the maintenance phase) with the Medical Assistants (n=13) who were the intervention implementation agents were conducted at the Federally Qualified Health Center. Three research team members independently analyzed the data using content analysis and then compared for agreement. We re-read and re-coded the transcripts until consensus was reached. The themes were clustered by similar codes and categorized into four groups, each including facilitators and hindrances of implementation: identification of implementation agents, implementation environment, intervention recipients, and the colorectal cancer screening intervention.

Results—Facilitators included Medical Assistants' high motivation with a positive attitude toward the intervention, team approach, and simplicity of the intervention, whereas hindrances included lack of time, forgetfulness, staff turnover, and language barriers.

Conclusion—The findings emphasized the importance of supporting implementation agents to ensure effective intervention program implementation.

Implications for practice—Oncology nurses need to particularly take into consideration the evidence-based findings when planning any intervention programs.

Keywords

colorectal cancer screening; implementation agents; intervention recipients; Vietnamese Americans

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Colorectal cancer (CRC) is one of the leading causes of cancer mortality for both genders in the U.S., with an estimated 132,700 new cases and 49,700 deaths in 2015.[1] Compelling evidence indicates that screening with any of the tests recommended by the U.S. Preventive Services Task Force-fecal occult blood test (FOBT) every year, sigmoidoscopy every 5 years with high sensitivity FOBT every 3 years, or colonoscopy every 10 years in persons aged 50-75 years-reduces CRC mortality at least 50-60%.[2,3] Despite the availability of these modalities, CRC screening remains underused. According to the 2010 National Health Interview Survey, CRC screening rates were 58.6% in the overall population, well below the Healthy People targeted goal of 70.5% for 2020.[4] The 2013 CDC Vital Signs reported that about one in three adults aged 50 to 75 years have not been tested for colorectal cancer as recommended by the U.S. Preventive Services Task Force.[5]

The poor and uninsured are less likely to undergo CRC screening of any type.[6] Among racial groups, levels of cancer screening have consistently been shown to be lowest in Asian Americans.[4] For example, in California, 24.4% of Vietnamese, aged 50-75 years, was reported never to have had a sigmoidoscopy, colonoscopy, or FOBT in 2009, in comparison with 18.9% in non-Latino Whites.[7]

Vietnamese Americans are the fourth largest Asian ethnic group in the United States and the third largest Asian ethnic group in Washington State as well as in metropolitan Seattle.[8,9] Compared to the overall U.S. Asian American population, Vietnamese Americans are economically disadvantaged, linguistically isolated, and especially unfamiliar with Western culture.[10] According to 2007-2011 California cancer incidence data, CRC is the 2nd and 4th most common cancer in Vietnamese women and men respectively.[11]

Considering the health disparities in underserved and minority populations, culturally-appropriate interventions to promote cancer screening in this underserved minority group are imperative. In this study, we explored factors that facilitated and hindered the implementation of a culturally-appropriate CRC screening intervention (CRC intervention) in a Federally Qualified Health Center (FQHC). This FQHC was originally established to serve low-income Asian immigrants in the State of Washington, and has been in operation for about 18 years. The multi-faceted intervention designed by members of our team was previously shown in a randomized trial to be effective in increasing CRC screening among Chinese Americans[12] was adapted for Vietnamese adults-the FQHC's second largest patient population.

Most published intervention evaluation studies to date have examined the components of the intervention itself and/or the characteristics of the intervention recipients to explain levels of goal achievement, but not much is known about the implementation process.[13,14] Understanding the implementation process might be beneficial for oncology nurses planning to develop intervention programs targeting underserved populations. In an attempt to better understand the implementation process and subsequently support improved CRC screening in this population, we conducted focus groups with the implementation agents-Medical Assistants- at the FQHC to examine factors that facilitated and hindered implementation of the adapted intervention.

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The CRC Intervention

The core elements of the adapted CRC intervention included educational materials (video and pamphlet) in Vietnamese, a series of brief in-service presentations, each about 10-15 minutes long, for implementation agents (Medical Assistants). During the in-service presentations, Medical Assistants were asked to distribute the intervention (educational materials) to Vietnamese patients who appeared to be age eligible (50-75 years old) and specifically informed that they were not expected to provide health education. We conducted 12 presentations with Medical Assistants bi-weekly for six months into the intervention, three additional presentations after six months, and two presentations to all the staff at the intervention clinic. All Medical Assistants at the intervention clinic were invited to attend the presentations. The adapted intervention period lasted two years, from March 1, 2009 to February 28, 2011.

Since Medical Assistants are integral members of the health care team providing direct care in an ambulatory clinic setting, they were assigned by the research team to the role of implementation agents. To minimize the burden on Medical Assistants and to reflect practice in the real world, they had been encouraged only to distribute the educational DVD and pamphlet to Vietnamese patients. The Medical Assistants were not expected to know whether a patient had already been given the materials or follow up on the next visit for any CRC screening.

Conceptual Framework

Glasgow et al.'s RE-AIM (Reach, Efficacy/Effectiveness, Adoption, Implementation, and Maintenance) guided this study.[15,16] The RE-AIM framework was originally developed to evaluate interventions aimed at changing health behaviors and has been applied to evaluate implementation and dissemination efforts, including challenges experienced by the implementers.[16] The RE-AIM framework has been applied to dissemination studies of various behavioral modification interventions such as a smokeless tobacco intervention and diabetes self-management programs.[17-19]

On the individual level, Reach refers to the percentage of potential participants who are exposed to an intervention and how representative they are. Efficacy and Effectiveness concern both the intended or positive impacts of an intervention and its possible negative or unintended consequences. Adoption and Implementation operate mainly at the setting or context level. Adoption refers to the participation rate and representativeness of both the setting in which an intervention is conducted and the intervention agents who deliver the intervention. Implementation refers to the extent to which various components of an intervention are delivered as intended in real-world evaluations. The final dimension, Maintenance, applies to both the individual and setting levels. Individual patient level (Reach and Effectiveness) was evaluated quantitatively and published else.[20] Process clinic setting level (Adoption, Implementation, Maintenance) was evaluated qualitatively and presented in this study.

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Methods

Focus group discussions with Medical Assistants (n=13) were conducted at the FQHC to elicit and assess factors that facilitated and hindered implementation of the CRC intervention. Focus group methodology can generate deep and rich data as well as a range of ideas and feelings of participants about certain issues.[21] Two focus groups were conducted (November, 2009 (n=5) and July, 2011 (n=9) during the implementation phase of the CRC intervention. The last focus group was conducted in February, 2012 (n=7), during the maintenance phase. We looked at both implementation and maintenance phases to capture and identify any differences in facilitators and hindrances experienced not only during startup but also longer term. All Medical Assistants at the FQHC were invited to participate in one or more focus group meetings in order to see if there were any different challenges. These meetings were held during work hours at the FQHC. The FQHC leadership was supportive and provided an hour off to enable Medical Assistants to participate. Institutional Review Boards at both the University of Washington and Seattle University approved the research. Written informed consent was obtained from each participant at the beginning of the session. Medical Assistants who participated more than once were asked to sign a consent form each time.

Following greetings and verbal explanations about the study purpose, procedures and ethics (e.g., protocols for maintaining confidentiality, the need for tape-recording, human rights as a research participant), discussions were facilitated by co-authors (S.P.T, M.P.Y) in English using a series of semi-structured interviews that evolved iteratively. The guiding questions were developed based on the RE-AIM framework[13] and included key items on facilitators and hindrances experienced by Medical Assistants in implementing and maintaining the program.

Each focus group lasted about one hour and was audio recorded. Discussions were then transcribed verbatim. To increase trustworthiness, three of the research team members, each representing a different discipline-nursing, medicine, and health services-independently analyzed the data using content analysis.[22] Transcripts were read carefully line-by-line to capture themes per paragraph, and consensus on the themes was subsequently reached in dialogue. For coding, research team read the transcripts line by line to capture meaningful texts reoccurring over time and then those were coded into a category. Similar categories were linked together to make major categories (themes). All collected themes were compared and contrasted to check their relevance. Representative participant statements were extracted and categorized into the related categories.

Results

Most of the Medical Assistants were female and, while of Asian descent, did not speak Vietnamese (Table 1). We identified themes among the facilitators or hindrances to implementation as identified by the Medical Assistants. The themes were clustered by similar codes and categorized into four groups, each including facilitators and hindrances: implementation agents, environment, intervention recipients, and the CRC intervention. We

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did not observe any differences in facilitators and hindrances themes between implementation and maintenance phases.

Implementation agents (Medical Assistants)

Medical Assistants' high level of motivation with a positive attitude toward the intervention and adaptation skills promoted the CRC intervention's implementation process.

> ...even though you give this manual to the person [patient], [if] he's not willing to read [it], then it [patient not knowing about CRC screening] happens and you, you know, it will not help you [to promote CRC screening]. So the thing is, you just encourage yourself and give to read through this book and manual [read through this book and manual to patient]...

> I think this is beneficial for us... We also learn from your presentation and now we are more knowledgeable about colorectal cancer. You know we then can bring this knowledge to the patient and then, in return, the patient will have more confidence about getting a colonoscopy.

In addition, quality care (e.g., good communication and relationships with peers and other health care providers) facilitated implementation and maintenance of the CRC intervention.

> ...We do something called huddling in the morning. We go talk to our doctors about every patient what they need...If they need a fecal occult blood test... we write it down in our paper...so it's always there [in our paper], we see and we have whatever to give.

On the other hand, confusing the CRC intervention with other cancer screening program (state-run breast cancer screening program) along with lack of awareness or understanding of the CRC intervention inhibited its implementation. Lack of time (to implement the CRC intervention in their busy work schedule), forgetfulness, language barriers (some Medical Assistants did not speak Vietnamese) and the learning curve (some Medical Assistants learn faster than others) were other factors hindering the process.

> I have heard of it [CRC intervention] but I am not that familiar with it, to be honest.

> If patient qualify, we just hand out the buyer card [a state-run breast cancer program] to the patient. If somehow the buyer card had a problem, then we will forward to the cancer program.

> We don't have much time to go in [to detail about] what you're doing [CRC intervention]...We focus only on requirement in our work. ...now it's like everybody needs shots [flu shots]. So it's busier when people get sick.

> There is so much information that we have to gather about with just one patient [for a certain procedure] we can forget sometimes [CRC intervention].

> We have the limit...one of the obstacles I find is that sometimes we do not have an interpreter. And so, you know, if I have a minute or two to give out [educational package] but I cannot find (an) interpreter ... I miss the opportunity.

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Implementation environment

Facilitators included team approach, reminders, and resources (e.g., infrastructure, training). Supporting each other and giving a reminder, integral characteristics of effective teamwork to facilitate implementation, were mentioned by a Medical Assistant.

> ...I think the other thing that we can do is also to remind each other as a team. Like I have been doing that sometimes like if I see, for example, if M. checks in [a] Vietnamese patient that's age appropriate--like 50 and older, then, you know, if they are close to the packet I just hand her one. Or I see somebody like J. whomever, that, you know, just remind your co-worker and that, I think that helps.

Along with a team approach and reminders, available resources (e.g., accessibility and visibility of the materials), supportive infrastructure (e.g., posted notes in the room saying to give the materials to Vietnamese age ≥ 50), and training (from colleagues and staff in-service) also facilitated intervention implementation.

> It is a new part of your work, so most of the time you will forget to do it...Maybe the tape and the package should be placed in a convenient location for, like, ...the counter or in the hallway, so we just grab and give it to the patient and it's easy. It will sink in my mind, too. It's part of my life now, part of my job.

> We basically learn from our people who have been here longer than us and we just ask them...I actually don't know many things so I always ask for help from people who have been here before me...

Hindrances included disruption to the workflow routine from technology upgrades and staff turnover. For some, technology upgrades, which distracted from intervention implementation by the need to learn new information technology (IT) systems, was a significant hindrance.

> ...I have been here for a year and since I have been here, we upgraded two times on Electronic Health Record system...after the upgrading, we always got fewer patients than we usually do, so you know, we get more time to adjust to the new whatever... now they try to make it more electronic than paper so we get training for that...we are charting patient[s] electronic [ally] and we have to accept whatever we [have] done.

Two Medical Assistants who were new in the FQHC were not quite sure about the intervention (e.g., “I have no one [to] explain me [about the intervention]...I am still too busy learning my work mix [work routine]”)

Intervention recipients

Some hindrances Medical Assistants noticed included a lack of knowledge about colonoscopy and a fear of the procedure.

> ...Some of them [patients] are a little bit scared because they don't have enough knowledge about that [colonoscopy]. Then they hear a rumor that it is very painful and they are scared about that [colonoscopy]. Sometime when we offer [the CRC intervention] they refuse.

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The CRC intervention

Packing of the linguistically-appropriate materials together helped the Medical Assistants to distribute the intervention materials. No hindrances were identified regarding the intervention itself.

> Like two weeks ago, there were new patients from Vietnam. When I offered that [educational material]...I think they really appreciate because of the package [in a bag] and they take... and they came [in a follow-up appointment] and brought it back [in one package]... I know they watched it. They commented [on it].

> It is very helpful, the package. It's all in their language...the information or resource is very helpful for the patients, Vietnamese patients.

Discussion

This study focuses on the intervention implementation process. To our knowledge, this is the first study to look at Medical Assistants' perspectives on their intervention implementation. Medical Assistants' awareness of the intervention is important to successfully implement the intervention at the clinic. Consistent with other studies on motivation and behavioral changes, when Medical Assistants were highly motivated about the intervention, they were more likely to implement and maintain it.[23,24] In addition, Medical Assistants' positive attitude toward the intervention seemed to augment their motivation. Although the FQHC staff and patients identified as Asian, languages served in the clinic remained an issue. Staffing changes that occurred during the implementation and maintenance phases of the intervention decreased the cultural and linguistic congruence between Medical Assistants and patients. Although the FQHC made available an interpreter service, its use was perceived by Medical Assistants to delay their workflow when incorporating the CRC intervention. We surmise that greater congruence between the languages spoken by the Medical Assistants and the patients with whom they worked may have better facilitated their implementation process. The workload of the implementation agents also needs to be considered when implementing any similar intervention.

Implementation environment

Features of an organization and environment play a significant role for implementation agents to implement the intervention. System-wide barriers to embedding a 'new' intervention into their routine as expressed by Medical Assistants at the FQHC included disruption to the workflow routines from technology updates and staff turnover.

Technology can be an important mechanism for intervention implementation. Some Medical Assistants, however, found frequent changes to electronic health record to be challenging. One of the newly employed Medical Assistants had experienced two upgrades and a change of electronic charting system during his/her first year at the clinic, which influenced his/her routine workflow. The learning curve related to mastering new features, usage, and incorporation for patient care disrupted Medical Assistants' routine workflow and deterred the CRC intervention implementation. Of interest, no participants mentioned the possibility

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that incorporating alerts or documentation into the electronic record might help facilitate intervention implementation.

Although training about the CRC intervention was given to all Medical Assistants at the beginning of intervention implementation, those who were hired after the intervention initiation were confused about following the intervention protocols. We offered additional in-service trainings during the implementation period, but Medical Assistants, including the newly hired ones who were not scheduled to work, or were busy, would not be able to attend the presentations. It might be possible that those who were new to the facility did not know much about the intervention and thus perceived the implementation of the CRC intervention to be complicated and disruptive to their workflow. This is an important aspect to consider when implementing any interventions.

Medical Assistants' consistency in incorporating this component into their routine workflow could be enhanced by placing the education materials in a central FQHC area. The Theory of Innovation Implementation and other studies have also reported the importance of access to materials for an intervention.[25,26]

A team approach that includes supporting each other, giving reminders, and having good communications and relationships with other colleagues and health care providers creates a good climate for implementation of the CRC intervention. In a health care setting like the FQHC, several disciplines and roles (including physicians, nurses, Medical Assistants, health assistants [interpreters], and front desk receptionists) are represented. The multiple layers of professional groups in a health care setting may slow down the implementation process; conversely, good team work and communication among those roles facilitate the implementation process.

Intervention recipients

Lack of knowledge about the cancer screening procedure and fear hindered implementation of the intervention. Other studies also reported lack of knowledge and fear as barriers to colorectal cancer screening among Korean and Vietnamese Americans.[27,28] Education interventions have been shown effective in improving knowledge level and fear resulting in high colorectal cancer screening uptake.[29,30] It would be beneficial for intervention delivery agents to provide a quick overview for those who are fearful about cancer screening, in order to facilitate the CRC intervention implementation.

The CRC intervention

Language compatibility and simplicity of the intervention (packaging CRC education pamphlets and DVD in Vietnamese in a bag for patients to take home) were essential to intervention implementation by Medical Assistants and recipients in this study. Although small sample size is common in qualitative study, study participants from one location imit the transferability of the findings. Findings from this study are limited to health clinics similar to this study. Caution needs to be taken when interpreting the data. However, this study does provide insight regarding how new ideas and skills required for launching and sustaining an intervention might best be facilitated. Regardless of effectiveness of the intervention materials, they will be useless if Medical Assistants cannot deliver them to

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patients in a timely manner. Any new intervention needs to be simple and easily implemented by the implementation agents while considering their existing work load. More studies on the overall aspect of the process evaluation are needed to obtain the best outcomes.

Some Medical Assistants in this study were motivated to implement the intervention early on, whereas, some were hired later and had not yet been provided the information necessary to implement the intervention effectively. Regular follow-up training of the implementation agents, especially for the newly hired, should be considered in a future intervention.

When we asked the Medical Assistants for suggestions for future programs, they suggested inclusion of all workers in the FQHC setting (health providers, health interpreters, and front desk receptionists) as the implementation agents in the CRC intervention. Such inclusion might facilitate a more speedy and effective implementation process. Future programs can consider expanding implementation agents to include more health care team members as well as patients. Finally, while our evaluation focused on intervention implementation processes and not outcomes, i.e., future CRC screening, successful distribution of CRC educational materials to the patients is a first and essential step in influencing awareness and health behavior of patients and also others in their family, at work, and in the community.

Implications for practice

Oncology nurses are well positioned to develop cancer screening interventions. They need to take into consideration the evidence-based findings as well as the intervention itself and the recipients when planning any interventions in order to ensure effective intervention program implementation. This study emphasizes the importance of intervention delivery agents for the successful implementation of the intervention. We asked the Medical Assistants to only give the intervention package (video and pamphlet) to Vietnamese patients who are 50-79 years old, and then to ask the patients to mail back the video in the stamped and addressed envelope. They were not asked to do follow-ups in order to minimize burdens for their workflow. A brief education on cancer screening by the intervention delivery agents can be beneficial for patients with fear secondary to a lack of knowledge. This is also true in health care settings, as even some brief education about cancer screening by health care providers may have a significant influence on patients' decision to seek cancer screening. In addition, since staff turnover is a significant factor for intervention implementation, future intervention developers may consider incorporating the intervention education training for their new staff orientation program.

Conclusion

Our study provides important information useful for health promotion intervention implementation. A great deal of failure in innovation implementation is from ineffective implementation. Intervention implementation agents are critical to the success of any intervention programs. This study provides oncology nurses with insights for future intervention development and implementation.

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Table 1

Demographic Characteristics of the Medical Assistants (N=13)

Variables	N (%)
Age (in years)	
20-29	6 (46.1%)
30-39	3 (23.1%)
40-49	2 (15.4%)
50-59	2 (15.4%)
Gender	
Male (%)	3(23.1%)
Female (%)	10 (76.9%)
Education	
Vocational	12 (92.3%)
Bachelor	1 (7.7%)
Race/ethnicity	
African	1 (7.7%)
Chinese	3 (23.1%)
Cambodian	1 (7.7%)
Filipino	4 (30.8%)
Japanese	1 (7.7%)
Laotian	1 (7.7%)
Samoan	1 (7.7%)
Vietnamese	1 (7.7%)
Fluent in Vietnamese (yes)	1 (7.7%)

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Table 2

Facilitators and Hindrances for the CRC Intervention Implementation among Vietnamese Americans

Facilitators	**Hindrances**
Implementation agents (Medical Assistants) • Knowledge/awareness • Adaptation • Motivation/positivism • Quality care: good communication between staff/ Relationship (with providers)	Implementation agents (Medical Assistants) • Confusion: Lack of program awareness/ knowledge/ understanding • Lack of time/workload burden • Language barrier • Forgetting task • Learning curve
Implementation environment • Reminders • Team approach (among MAs and with providers) • Resources/Source of information - Accessibility (easy access) and visibility of intervention materials - Training (from colleagues, staff in-service) - Infrastructure	Implementation environment • Disruption to the workflow routine: Technology upgrades • Staff turnover (internal change)
Intervention recipient None identified	Intervention recipient • Lack of knowledge • Fear
CRC intervention • Relevant language • Simplicity	CRC intervention None identified