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Feasibility of implementing project Buhay: the first colorectal cancer screening promotion programme for Filipinos in Alaska

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ABSTRACT

This study assessed the feasibility of implementing Project Buhay (PB), the first colorectal cancer (CRC) screening promotion programme for Filipinos in Alaska and developed through university-community partnership. PB involved piloting two interventions: a group health education intervention and (GHEI) a video-
based intervention (VBI) showing a mini-documentary of a Filipina from Alaska with CRC. Participants included self-identified Filipinos, aged 50 to 75 years who were not current in CRC screening. Data collected include recruitment, reach, implementation process, short-term outcomes, and implementation barriers. Results show that PB reached a total of three Alaskan communities and exposed almost 50 participants. GHEI and VBI participants were followed-up at three-month post-intervention, with 80% reporting their intention to get CRC screening within a year. The main barrier in implementing PB was its lack of funding and time, which lessened effectiveness and reduced community and participant reach. However, PB team's ability to make adjustments in implementation and leverage existing university and community assets led to the successful implementation of theinterventions. At the project's conclusion, there were positive implications for both the Filipino community in Alaska and project team, affirming the importance of university-community partnership.

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Introduction

Colorectal cancer is the second leading cause of cancer deaths in the U.S [1] and Alaska [2]. The 3,recommends colorectal cancer (CRC) screening for adults 45 to 75 years via faecal occult blood test (FOBT), sigmoidoscopy, and/or colonoscopy. Based on the national Behavioural Risk Factor Surveillance System (BRFSS) data, Asians and Pacific Islanders (APIs) have the lowest CRC screening rates compared to other ethnic groups [4]. In Alaska, the only U.S. state in the circumpolar region, APIs are the third largest ethnocultural group [5]. Among APIs in state, Filipinos are the largest and one of the fastest growing populations; they are also the largest immigrant group [5]. Among Alaskan communities, the greatest concentrations of Filipinos are in Unalaska (34.7%), Kodiak (18.9%), Anchorage (4.3%), and Utqiagvik (formerly Barrow) (3.5%) [6]. Despite the significant presence of Filipinos in Alaska, their CRC screening rates are not available due to the small sample size of APIs in Alaska's BRFSS. Elsewhere, published population-based studies reporting CRC screening rates of Filipinos are available; however, they are few and date more than a decade ago. In a population-based study conducted in California in 2005, investigators found that Filipinos had the lowest colorectal cancer screening rates among some API groups and non-Hispanic whites [7]. In terms of survival rates, the only population-based data available were from a study conducted almost two decades ago by [8]. They found that Filipinos in the U.S. have the poorest five-year survival rate once diagnosed for CRC [8].

In 2008, an evidence-based CRC screening health education intervention for Filipino Americans in Los Angeles, California was developed [9]. The intervention involved small group educational sessions at community-based organisations and churches, facilitated by a health educator, discussing topics such as risks and symptoms of CRC and benefits of early detection, distribution of free faecal occult blood test (FOBT) kits, distribution of CRC brochures, reminder calls to participants, and reminder letters

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to participants' physicians [9]. 9Intervention was guided by the Health Belief Model, which views health behaviour (such as cancer screening) as a function of the individuals' perception of harm and susceptibility to the disease (i.e. cancer) and their ability and confidence in performing this health behaviour. The Task Force on Community Preventive Services has recommended several components from Maxwell et al.'s intervention for dissemination, highlighting them in the National Cancer Institute's Research Tested Intervention Programs and the Reach Effectiveness Adoption Implementation Maintenance (RE-AIM) website [National Cancer Institute [10].

Given this intervention showed evidence of effectiveness, a follow-up study was conducted to test the feasibility of implementation using community health aides (CHAs), most of whom were nurses, chosen within Filipino organisations or faith-based organisations to promote and teach about CRC screening and evaluate the effectiveness of getting leaders of these organisations involved in the process [11]. This study showed that the strategy is feasible and involvement of organisational leaders led to increased reach and participation.

Another promising intervention in promoting CRC screening is the use of media. According to CDC's Community Preventive Services Task Force, there is strong evidence that small media interventions can be effective in increasing colorectal cancer screening (see: http://www.thecommunityguide.org/cancer/screening/client-oriented/RRsmallmedia.html).
However, one particular type of media intervention for CRC screening that has not been empirically tested, particularly among Filipino Americans, is the use of mini-documentary. Having a powerful story presented in a mini-documentary can potentially change emotions and behaviours. According to Patterson, stories presented on video can function as vicarious experiences, allowing audiences "to feel empathy and experience the behavior themselves" [12, p. 72]. The notion of vicarious experiences is based on Bandura's work on social cognitive theory [13], which extended into many disciplines, including communication and media effects. Television, documentaries, and video in particular are potent channels for story [14–18]. In the area of health, stories can serve as interventions themselves. In addition to providing vicarious experiences, stories also foster parasocial relationships, where the audience member feels a connection to the person or character presented in the narrative [19,20]. In March 2000, for example, NBC *Today* show host Katie Couric produced a weeklong television series on colon cancer, which included a live colonoscopy [21,22]. Couric's husband Jay Monahan died of colon cancer at age 42. Couric's personal story and connection with the audience, along with the vicarious experience she provided for millions of TV viewers, resulted in what researchers have dubbed "The Katie Couric Effect". Following the broadcast, colonoscopy rates around the country increased more than 20% and the higher rate of colonoscopies was sustained for almost a year after the original broadcast [23].

Given the need for effective CRC screening promotion for Filipinos in Alaska, the project team's aim was to assess the feasibility of implementing two different strategies of colorectal cancer screening promotion among Filipinos in Alaska – one was a group health education intervention (GHEI) based on Maxwell and colleagues' research [9], and the other was a video-based intervention (VBI) that involved dissemination of DVDs to individuals containing a mini-documentary designed to evoke vicarious experience through presentation of an emotional story of an individual experiencing colorectal cancer. Based on the work of Bowen et al. (2009) and Tickle-Degnen (2013), the focus of a feasibility study is to document how it is implemented and determine its strengths and limitations to guide future implementation. In assessing the feasibility of this current project, the following questions were addressed:

Q1.Describe the resources and process involved in implementing the two interventions.

Q2.What are the short-term outcomes of the interventions on a limited number of participants?

Q3.What are the strengths and barriers of implementing these interventions?

The significance in reporting the feasibility of this project is that implementing a CRC program for Filipinos in Alaska has never been done before. In a state where an ethnocultural group makes up such a significant portion of the population in the circumpolar north, addressing this disparity is imperative.

Methods

Community engagement and partnership

The principal investigator (PI) of this study is a Filipino immigrant who grew up and has familial ties in Anchorage, Alaska. For two decades, he has been actively involved in Filipino organisations as a member and leader, establishing trust and relationship with the community. In 2008, he began working with the Filipino

community in Anchorage as a public health researcher, conducting the first ever health needs assessment among Filipinos in Anchorage. In 2012, the PI led another Filipino health needs assessment that extended beyond Anchorage to Utqiagvik and Kodiak. Throughout the course of these activities, the PI would hear personal stories and anecdotes from community members about diagnosis, survivorship, and death from cancer. These events and experiences became the impetus for the community and the research team to pilot a CRC screening promotion program for Filipinos in Alaska. As such, when a mini-grant funding opportunity for faculty and students to pursue community-engaged research became available, the team [with letters of support from various Filipino organisations in Alaska) decided to apply, proposing to pilot an in-person group education session modelled after [9], Filipino American Health Study and to pilot an innovative video-based intervention guided by media and communications theory to promote colorectal cancer screening promotion among Filipinos in Alaska.

The team was awarded the mini grant in January 2016, and the pilot CRC screening promotion program was named, "Project Buhay" ("buhay" is the Filipino word for "life"]. The program was set up – preparing curriculum, assembling a team, training, and obtaining Institutional Review Board approval (UAA IRB#: 859,571–8) – between January 2016 and August 2016, and implementation began in September 2016.

Data collection

In assessing the feasibility of implementing Project Buhay, both quantitative and qualitative data were collected. The following describes how data were collected for each of the questions addressed in this project.

In addressing Q1, data on recruitment, program reach, and the activities involved in the implementation of both GHEI and VBI were collected. For recruitment, the team collected information on types of recruitment strategies used and the number of participants obtained in each strategy. In terms of program reach, the number of communities and participants were collected, as well as demographic information. Regarding implementation of the two pilot interventions, the team documented activities throughout and noted any adjustments made to the original plan.

In addressing Q2, the team collected information on CRC screening status among participants via surveys at baseline (prior to the intervention) and at three-month post-intervention. At three-month follow-up, data assessing intent to get CRC screening were collected. Baseline surveys were conducted by the student research assistants (unless participants requested on completing it on their own), while follow-up surveys were conducted solely by the student research assistants or the principal investigator by phone. The baseline survey was significantly shorter than the follow-up survey; it mainly asked questions on CRC screening and a few demographic questions to determine eligibility to participate in the interventions, while the follow-up survey included questions on intentions to get CRC screening, their intervention experience, and actual CRC screening (if they did). Survey instruments had both English and Filipino (Tagalog) version, and participants chose which version they preferred. Project Buhay's survey questions were mainly adapted from the survey instruments that Maxwell and colleagues used in evaluating their study [9]. Since the PI is bilingual in both English and Filipino, he translated all English survey questionnaires into Filipino. Then, a volunteer Filipino community member who is a certified Filipino translator reviewed the investigator's translations for accuracy.

For Q3, team members took field notes, then the project coordinator collated all the notes and identified items in the notes that were related to implementation barriers and strengths, which were then shared with the project co-investigators. Additionally, part of identifying strengths and limitations involved assessing the quality of both the group health education session and video intervention. For participants of GHEI, they were given a self-administered survey at the end of session on how much of the content they understood in the educational session, how much new information they learned, and how well the instructor explained the educational materials. Additionally, they were asked the most important lesson they learned. For the VBI participants, they were asked how much of the video they watched and the degree to which they could relate to the main character during the three-month follow-up survey. Finally, part of identifying the strengths and limitations of Project Buhay, particularly regarding the GHEI, was to compare the activities implemented in this project with the activities implemented in the program it was modelled after [i.e. [9],,Filipino American Health Study].

Analysis

All quantitative data were entered in MS Excel file and analysed using SPSS Version 25. Analysis of quantitative data involved assessing frequencies and percentages for all nominal variables and assessing means and standard deviations of continuous variables. For the qualitative data, they were collected in MS Word file and analysed manually. All qualitative data obtained in the evaluation were coded and categorised based on

emerging themes and cross-checked with team members to assure inter-rater reliability.

Results

Recruitment and reach

Community Outreach

Initially, the project team planned outreach to four Alaskan communities with large Filipino presence, namely Anchorage, Utqiagvik, Kodiak, and Unalaska. Given the research team and particularly the health educator was based in Anchorage, the GHEI would be designated in that community. With Kodiak and Unalaska being distant and inaccessible by land travel, the team would assign them to receive the VBI. The team would then designate the remaining community, Utqiagvik, as the control community.

At some point during project implementation, the research team was unsuccessful in finding a research assistant and liaison who could assist the team in collecting data in Utqiagvik. As a result, the team decided to not include a control group in the study design. With the exclusion of Utqiagvik, the extra funds designated for that community were instead used to include an additional GHEI session in Kodiak.

Participant Recruitment

Both indirect and direct type of recruitment were employed in this study. Indirect recruitment involved handing out Project Buhay fliers to Filipino organisations (i.e. Alaska Federation of Filipino Americans, Filipino Community in Kodiak, Filipino Community in Unalaska, Philippine Nurses Association in Alaska) and leaders to send out to their members and colleagues, posting fliers at businesses frequented by Filipinos (i.e. Asian markets), or sending electronic fliers via email Listserv of community organisations mentioned above. Direct recruitment involved going to Filipino community events and meetings to discuss the project, directly talking with individuals during those events, and directly contacting individuals that were referred to by community members and leaders.

Participant Reach

Self-identified Filipinos aged 50 to 75 years old, who have not had any CRC screening or who were not current in their CRC screening (based on the baseline survey) were eligible to participate in Project Buhay in either the GHEI or VBI, depending on their location. Note that at the time of program implementation, the 29, recommended colorectal cancer (CRC) screening for adults 50 to 75 years.

A total of 107 self-identified Filipinos between the ages of 50 to 75 years old participated in the recruitment baseline survey. The majority were from Anchorage followed by Kodiak and Unalaska. Among the recruits, most were women and most came from direct recruitment (see Table 1).

Of the 107 Filipinos who participated in the baseline survey, 64 were not current with CRC screening and were eligible to either the GHEI or VBI. Of the 64 individuals eligible to participate in either the health education or video-based intervention, 29 were assigned to participate in the group health education intervention (15 were from Anchorage and 14 were from Kodiak) and 18 were assigned to participate in the video-based intervention (15 individuals were from Kodiak and 3 were from Unalaska). Additionally, four participants from Kodiak got to be part of both the GHEI and the VBI since both types of intervention were provided in this community. The VBI participants from Kodiak participated in the group health education session due to word-of-mouth advertising through family and community networks. Thirteen participants who were initially eligible for the GHEI were not able to participate in the education session. Among the 13 participants, the project coordinator was only able to talk with a few (N = 3) who mentioned that the reason they did not get to participate was either due to transportation difficulties or scheduling conflicts. The reason for non-participation for the rest of this group of 13 could not be determined because of difficulty contacting them (i.e. wrong number or not responding to phone calls or emails). For more details, see Figure 1 below.

Table 1. Characteristics of baseline survey participants, n = 107.

Participant Characteristics	Percent
Recruitment	
Direct Recruitment[1]	60.7
Indirect Recruitment[2]	39.2
Sex	
Male	33.6
Female	66.4
Community	
Anchorage	50.5
Kodiak	36.4
Unalaska	15.9
CRC Screening Status	
Current with CRC screening	40.2
Not Current with CRC screening	59.8

[1]Direct Recruitment involved going to Filipino community events and meetings to discuss the project and directly contacting individuals

[2]Indirect Recruitment involved handing out Project Buhay fliers to Filipino organisations and leaders in the community to send out to their members and colleagues, as well as posting fliers at businesses frequented by Filipinos or sending electronic fliers via email Listserv.

Project Buhay interventions

Group Health Education Intervention

The GHEI closely followed [9], protocol. A faculty with an MD degree volunteered to serve as the health educator. This faculty also happens to be a Filipina who can speak Filipino. The project's PI trained the health educator on the topics to cover during the education session. Project Buhay's education sessions used the same posters and PowerPoint materials from the Maxwell et al.'s study. However, unlike in Maxwell et al.'s study, Project Buhay was not able to provide participants free access to Faecal Occult Blood Test (FOBT) due to lack of funding to purchase the FOBT kits and the logistical challenge of setting up designated clinics and FOBT testing sites in the intervention communities. But, as in Maxwell et al.'s study, Project Buhay's education session involved a 60 to 90-min lecture and discussion in both English and Filipino language on general CRC facts specific to Filipinos and the various types of CRC screening and their importance in preventing premature death. At the end of the intervention, participants were provided with a brochure on colorectal cancer from the American Cancer Society.

Video-Based Intervention

A video was developed and produced by the Co-Principal Investigator (Co-PI) of the study who has expertise in communications and production of documentaries. The video was approximately 6.5 minutes long and features the story of a woman from Utqiagvik, Alaska who was diagnosed with colon cancer and survived with early detection. The woman featured in the story is originally from the Philippines and while the video's central character had a higher CRC risk than the average risk from the population, her background as someone from the Philippines who was diagnosed with colon cancer was helpful to our study. The video length was determined by experience and intuition, along with budget constraints.

Participants of this intervention received a package that included a letter from the PI and Co-PI about the study and its protocol, informed consent form, the video in DVD format, and a brochure on colorectal cancer from the American Cancer Society similar to the ones given to the participants of the small group education session.

Short-Term Outcomes of the Interventions: CRC Screening Intent and Actual

Participants of both the GHEI and VBI were followed up at three months post intervention to assess whether they intend to get screened for CRC or actually got screened for CRC. Of the 29 who participated in the follow-up survey, 12 from the GHEI and eight from the VBI reported on intending to obtain CRC screening within a year (see Table 2). In terms of getting screened for CRC, two from the GHEI and none from the VBI reported actual CRC screening (FOBT screening). For the four participants exposed to both interventions, three expressed intending to obtain CRC screening and one reported actually getting colonoscopy.

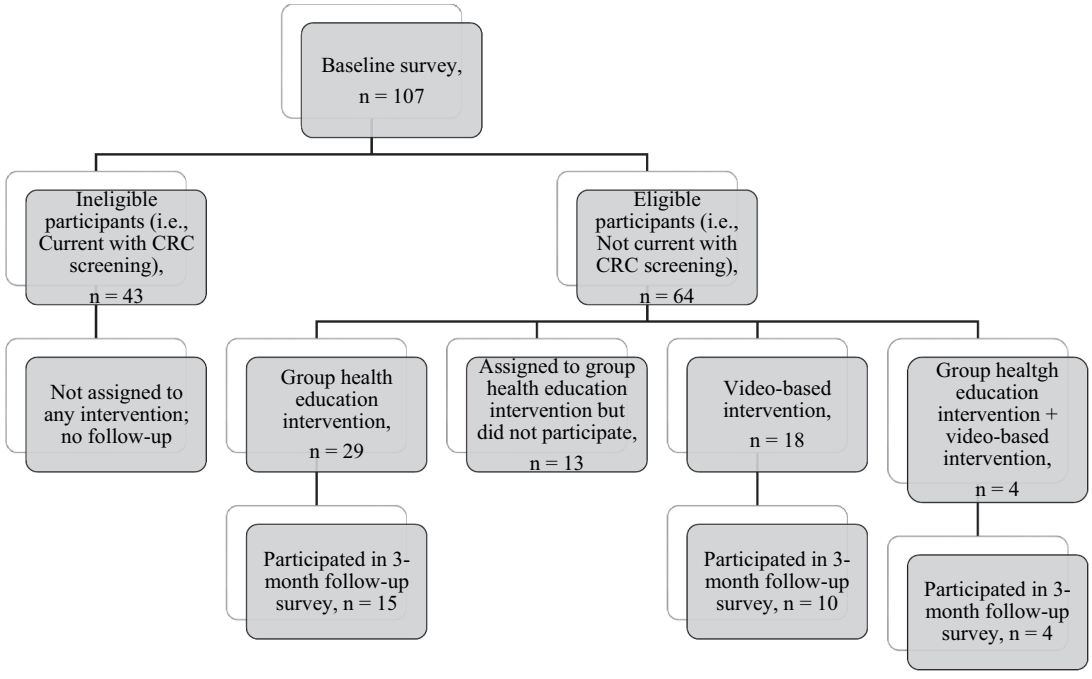

Figure 1. Distribution of study participants in various intervention groups.

Assessing the quality of the interventions

Of those who participated in the GHEI, almost all or most of the information presented in the session were understood and most thought that the information provided during the session was new information. Additionally, all felt the health educator presented the materials and information very well or well (see Table 3).

In terms of the most important lessons learned from the sessions, many felt that screenings are an important aspect in preventing CRC. One participant stated, "*If you are above 50 [years old], you need to undergo screenings for CRC*". Another reported, *"Colonoscopy screenings is [sic] really to be done after age 50 to early detect CRC"*. Other participants felt that eating healthy foods and exercising were an important lesson learned. One participant said, *"proper eating habits and exercising helps prevent CRC"*. Additionally, participants reported that following their doctor's advice and speaking with their doctor was important for early prevention to CRC.

Regarding the VBI, most of the respondents reported watching all or most of the video. Then, on a scale from 1 (very low) to 10 (very high), participants rated the following two items: (1) the degree to which they could relate to the video's main character and (2) the likelihood they would recommend the video to others. Not all participants responded to these questions. For the 12 that responded to the question on whether they can relate to the main character, the mean score was 6.42 ± 2.23 standard deviation. For the 14 that responded to whether they were likely to recommend the video to others, the mean score was 6.29 ± 3.05 standard deviation. Participants were also asked to provide general comments about the video. Six participants generally felt that information on when to get screened for CRC was the most effective part of the video. Moreover, some suggested that it would have been helpful if the video was narrated in Filipino (Tagalog) and interpreted in other major Philippine languages such as Ilocano and Visayan.

Table 2. Group education intervention and video-based intervention data.

Intervention Information	Amount
Group Education Intervention	
Number of group education session conducted	
Anchorage	4
Kodiak	2
Average number of participants per session	
Anchorage	4
Kodiak	7
Participant Assessment of Group Education Session, $n = 33$	
All/most of presentation were understood	94.7%
All/most of the information presented was new	68.4%
The educator presented materials very well/well	100%
Video-Based Intervention	
Watched all/most of the video, $n = 22$	72.7%
Perceptions about the video	
Degree to which participants felt they could relate to the video (mean ± standard deviation), 1 = very low, 10 = very high, $n = 12$	6.42 ± 2.23
Degree to which participants would recommend video to others (mean ± standard deviation), 1 = very low, 10 = very high, $n = 14$	6.29 ± 3.05

Comparing project Buhay group education intervention with the model intervention

Completely adopting California's Filipino American Health Study as described in NCI's RE-AIM [10] to Alaska was not entirely possible. The primary reason for this was the budget. While the California study had a budget of approximately $340,000 per year for four years (Dr. Annette Maxwell, email correspondence, 15 November 2018), Project Buhay had a budget of $18,700 for one year. To cut cost but maintain fidelity to the California study, several volunteer research hours were provided by all members of the research team. Moreover, the team also attempted creative ways of incentivising student participation as research assistants. For example, the promotion and data collection for this study involved incorporating this project into an investigator's class and students got course credit for participating in the implementation of the project. Other incentives offered were student scholarships provided by University of Alaska Anchorage's Center for Community Engagement and Learning. Three of the student research assistants were funded through this mechanism. Additional cost-cutting measures for Project Buhay included the following: not providing FOBT testing kits to participants; capping the number

Table 3. Results of three-month follow-up.

	Group Education Intervention $n = 15\%$ (Frequency/Total)	Video-Based Intervention $n = 10\%$ (Frequency/Total)	Group Education + Video-Based Intervention $n = 4\%$ (Frequency/Total)	Total $n = 29\%$ (Frequency/Total)
Intent to obtain recommended CRC screening within a year	80.0% (12/15)	80.0% (8/10)	75.0% (3/4)	79.3% (23/29)
Reported actual CRC screening	13.3% (2/15)	0.0% (0/10)	25.0% (1/4)	10.3% (3/29)

of study participants to no more than 90; and not working with community clinics to provide CRC testing and analysis.

Geographic distance and cost were other barriers to the full adoption of the California study. Study communities are located in remote areas that are expensive to get to and have a high rate of flight cancellations due to unpredictable weather. Thus, a different type of intervention was needed for this study that was both economical and feasible. This led the Project Buhay team to introduce the VBI for communities outside of Anchorage. A summary comparing the Alaska Project Buhay and the California Study can be found in Table 4 below.

Discussion

With a budget of just under $19,000 for one year and a team of 12 members, Project Buhay was developed and implemented, reaching three Alaskan communities and exposing almost 50 participants to either the GHEI or VBI. The short-term outcome results were promising for both interventions. At three-month follow-up, most of the participants (80%) in either intervention reported intending to get CRC screening within a year and around 10% actually got CRC screening. However, caution must be exercised when interpreting this finding given that the evaluation methods used had some internal validity issues, such as not having random group assignments and control group; not measuring other important short-term outcomes like knowledge, attitudes, and beliefs related to CRC screening; not measuring CRC screening intent at baseline survey; having a small sample size; and having several participants being lost to follow-up. Additionally, questions about whether participants had a regular primary health care provider were not asked in the baseline survey. Knowing this information could have prompted the team to redesign either of its interventions to include health care providers as facilitators of CRC screening, which could potentially improve short-term outcomes. Nonetheless, Project Buhay's implementation and short-term outcomes suggest that a CRC screening promotion program for Filipinos can be feasibly implemented in Alaska. As for the VBI, having more time and financial resources would have helped to find a video character potentially more relatable to the target audience in terms of CRC risk (in other words, having a video character with average CRC risk may be more relatable to the target audience than the current character who has high CRC risk). Nonetheless, there was a moderate level of approval among video-based participants that they were able to relate to the video. As for the actual CRC screening that was reported among the few participants, the investigators felt the effect of interventions may not have been fully realised yet. Assessing behaviour change requires

Table 4. Comparing colorectal cancer screening promotion program components for Alaska project Buhay and California Filipino American health study.

Categories	AK Project Buhay Components	CA Fil-Am Health Study Components	Different/ Similar?
Budget	$18,700/year for 1 year	$340,000/year for 4 years	Different
Recruitment	Community-based recruitment via attending Filipino events, meetings of Filipino organisations or groups, individual invitation	Community-based recruitment via attending Filipino events, meetings of Filipino organisations or groups, individual invitation	Similar
	Baseline data collected on CRC screening	Baseline data collected on CRC screening	Similar
Sample Size	Baseline sample, N = 107; assigned to intervention (not adherent to CRC screening), N = 60; 3-month follow-up, N = 29*	Baseline sample, N = 906; assigned to intervention (not adherent to CRC screening), N = 546; 6-month follow-up, N = 508	Different
Study Design	Non-Random assignment to interventions and no control	Randomised participants to intervention and control	Different
Intervention	Multiple communities, including Anchorage, Kodiak, and Unalaska, * with Kodiak and Unalaska accessible by plane or ferry from Anchorage	Los Angeles County only and accessible by car	Different
	Only those who were not current or had not gotten CRC screening were invited to participate	Only those who were not current or had not gotten CRC screening were invited to participate	Similar
	Two types of intervention: small group education intervention and video-based intervention	One type of intervention: small group education intervention	Different
	Education was conducted both in English and Filipino (Tagalog)	Education was conducted both in English and Filipino (Tagalog)	Similar
	Volunteer health educator with health professional background (M.D. degree)	Compensated health educator with health professional background (mainly nurses)	Similar
	Student research assistants assisted in data collection (both paid and volunteer)	Student research assistants assisted in data collection (paid)	Similar
	No FOBT kits provided	FOBT kits provided and central clinic to send FOBT test results	Different
	No demonstration of FOBT kits	Demonstration of how to use FOBT kits	Different
	Post-intervention follow-up at 3 months	Post-intervention follow-up at 6 months*	Different

a longer follow-up than the three months implemented in this current study.

As Project Buhay has shown, getting creative with implementation can generate cost savings, especially when there is university-community partnership and adaptability within the research team. For example, university students can serve as project assistants and/or community liaisons in implementation, and they can be compensated through scholarship or credit as part of a community-engaged course. Community partners, too, can help with the cost savings. When the team was promoting Project Buhay to various community groups, members of the Philippine Nurses Association of Alaska expressed interest in being the educators for the group education sessions for the next reiteration of the program. It is also important to form partnerships with healthcare organisations or facilities to help with cost-cutting in the future. When findings of this project were presented in a local conference, cancer centres and organisations in the state expressed willingness to provide free FOBT kits and cancer screening referrals.

The implementation of this project experienced several challenges beyond the lack of time and funding. One other challenge was recruitment of participants. While this study was able to reach 107 participants in the baseline assessment (baseline survey assessing their current CRC screening practices), deepening the pool of respondents would allow the team to assign more participants to the two interventions. Of particular concern, this study was only able to identify 14 participants in Unalaska and none in Utqiagvik. The project's original intent was to reach between 100 and 200 participants in the baseline survey and be able to assign at least 50 non-CRC screening compliant participants in each of the intervention arms. Unfortunately, this study was short in obtaining the minimum number of participants in each of the arms. However, challenges in recruiting Filipino American participants are not uncommon based on the experience of other investigators [24–27]. Thus, several investigators who have worked with Filipino American participants recommend recruitment using a variety of strategies, including individual referrals, attending Filipino American community events, and posting fliers in businesses that have many Filipino American customers [27–31]. All such strategies were used in this current project but unfortunately still came up short. The difficulty of reaching out to Filipino American subjects may be related to Filipino American participants' confidentiality concerns, long commute, lack of time, and not understanding the study's purpose [25,26].

Another challenge this project encountered was following-up on the participants. A total of 22 participants were lost to follow-up. Unfortunately, this project has no data on the reasons why participants chose not to participate in the follow-up survey. However, the experience of the project's student research assistants may provide some insights. Based on their notes, 13 out of the 15 small group education intervention participants preferred to be interviewed in Filipino. This suggests that perhaps participants were more comfortable and trusting to speak with someone about the project with their own native language. Indeed, according to one of the project's Filipino-speaking research assistants, she felt that she was able to establish a good rapport with the participants throughout the entire follow-up survey when she initially greeted them in Filipino. However, note that the use of Filipino language is not the only way to establish a good rapport with the participants. Most of the participants they recruited and followed-up were successful, suggesting that perhaps having someone who knows and/or is known in the community have a greater likelihood of gaining trust in the community, and thereby greater likelihood of getting someone in the community to participate in the project.

Despite these challenges, this project had positive implications for both the students who assisted in the project, as well as the Filipino community. For the students who assisted in the project, many of whom were aspiring public health professionals, they learned the value of being sensitive and responsive to community input. They recognised the importance of working on known health disparities wherever they exist but also saw firsthand how challenging it can be to build and sustain those relationships. For the students, remaining flexible and open minded to community concerns became an invaluable lesson in cultural humility. At the conclusion of the project, some students suggested that cross cultural, community engaged research projects like this one should be a required component of an undergraduate degree program. For the Filipino community that the team worked with, Project Buhay was both significant and meaningful. Having investigators and student research assistants who are Filipino Americans in Project Buhay became a sense of pride for the community. They also felt a sense of importance and accomplishment in that a cancer prevention program specifically designed for their community was finally implemented after years of seeing some of their loved ones be diagnosed and die of cancer.

Conclusions

A colorectal cancer screening promotion program for Filipinos in Alaska is much needed yet unavailable in the community. The years of partnership between the

university and the community made it possible to develop and implement Project Buhay, which sought to improve CRC screening among Filipinos in the state through group education and video-based intervention. Project findings suggest that a Filipino colorectal cancer screening promotion program in Alaska, like Project Buhay, can be feasibly implemented in this circumpolar region with sufficient funding and time. While short-term outcomes of this project were positive, in that most of the program participants who followed up three months post intervention reported intention to get screened for CRC, the team also acknowledges this result is subject to various threats to internal validity. However, the focus of this paper was not about Project Buhay's outcome related to CRC screening, but rather the process involved in implementing it. With regard to implementation, findings in this paper suggest that it was well executed in that the team was able to develop and implement both the GHEI and VBI and the team was able to make appropriate adjustments to the activities given specific barriers.

Disclosure statement

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