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Culturally-Relevant Online Cancer Education Modules Empower Alaska's Community Health Aides/Practitioners to Disseminate Cancer Information and Reduce Cancer Risk

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Abstract

To address a desire for timely, medically-accurate cancer education in rural Alaska, ten culturally-relevant online learning modules were developed with, and for, Alaska's Community Health Aides/Practitioners (CHA/Ps). The project was guided by the framework of Community-Based Participatory Action Research, honored Indigenous Ways of Knowing, and was informed by Empowerment Theory. A total of 428 end-of-module evaluation surveys were completed by 89 unique Alaska CHA/Ps between January and December 2016. CHA/Ps shared that as a result of completing the modules, they were empowered to share cancer information with their patients, families, friends, and communities, as well as engage in cancer risk reduction behaviors such as eating healthier, getting cancer screenings, exercising more, and quitting tobacco. CHA/Ps also reported the modules were informative and respectful of their diverse cultures. These results from

end-of-module evaluation surveys suggest that the collaboratively developed, culturally-relevant, online cancer education modules have empowered CHA/Ps to reduce cancer risk and disseminate cancer information.

“brought me to tears couple of times, and I think it will help in destroying the silence that surrounds cancer”

Keywords

community health workers; online learning; culturally-respectful; culturally-responsive; culturally-relevant; Alaska Native; cancer prevention; cancer education; empowerment theory; indigenous ways of knowing; community based participatory action research; survey; adult education

Background

While cancer was considered a rare disease among Alaska Native people as recently as the 1950s, it is currently the leading cause of death [1]. Cancer mortality disproportionately impacts Alaska Native people; between 2008–2011, the Alaska Native cancer mortality rate was 34% higher than U.S. Whites, and 47% higher than non-Native Alaskans [2]. The leading causes of cancer incidence among Alaska Native people are lung, colorectal, and breast cancer; all of which have modifiable risk factors [1]. In 2011–2013, 36.2% of Alaska Native adults reported current smoking, as compared to 18.1% of white Alaska adults and 19.4% of white adults in the United States [3]. In 2010–2012, 70% of Alaska Native adults reported being obese or overweight, compared to 65% of Alaska Whites, and 63% of the U.S. population (2012) [4,5]. In 2009, 15% of Alaska Native people reported eating five servings of fruits/vegetables per day, compared to 25% of non-Native Alaskans and 23% of the U.S. population [4,6].

Alaska Native people are also less likely to receive some cancer screening exams than the average U.S. adult. In 2008, 63% of Alaska Native women age 40 and over reported receiving a mammogram in the past two years, compared to 76% in the U.S. [4,7]. However, an increasing percentage of Alaska Native people have reported receiving a colorectal cancer screening, decreasing the disparity between Alaska Native and White Alaskans from a 17-percentage point gap in 1993 to a statistically non-significant difference in 2012 [5].

For Alaska Native people in rural Alaska, primary medical care, including education about diet, tobacco, physical activity, and cancer screenings, is provided by Community Health Aides and Community Health Practitioners (CHA/Ps), who are often the sole health providers in their communities. CHA/Ps work as part of the well-established Community Health Aide Program (CHAP), which was developed in the 1960s [8]. CHA/Ps operate within the guidelines of the Alaska Community Health Aide/Practitioner Manual, which outlines assessment and treatment protocols for basic and emergency medical care. Community Health Aides (CHAs) are selected by their communities, and receive four 3–4 week basic training sessions. After successfully completing basic training, and a clinical skills preceptorship and examination, CHAs become Community Health Practitioners (CHPs) [8]. Only two of the 588.5 hours of basic training (.3%) are dedicated to cancer [8].

In response to CHA/Ps requests for more information about cancer [9], the CHAP cancer education project team developed and delivered in-person cancer and wellness classes starting in 2001 [10]. However, Alaska's large distances, expensive airfare, harsh weather patterns, and the recent statewide financial crisis restrict CHA/Ps ability to receive in-person education. Fortunately, increasing access to high-speed Internet in rural Alaska has provided an opportunity to engage CHA/Ps in timely, medically-accurate, culturally-relevant cancer education [11,12]. The cancer education has been designed to empower CHA/Ps to engage in cancer risk reduction behaviors, and to share learned cancer information. This manuscript describes online learners' intentions to reduce their cancer risk and disseminate cancer information, and tests the hypothesis that these two intentions are correlated.

Methods

Theoretical Framework

The development, implementation, and evaluation of the online cancer education modules was guided by the framework of Community-Based Participatory Action Research (CBPAR), which facilitated honoring ways of knowing shared by Alaska's CHA/Ps and measuring outcomes in alignment with Empowerment Theory. CBPAR is a partnership between communities and academics/researchers that focuses on locally relevant issues, builds on community strengths, and realizes social change to reduce inequities [14]. The CBPAR framework guided the collaboration of the project team, CHA/Ps, and CHA/P supervisors and instructors, to inform and empower CHA/Ps to address cancer disparities impacting Alaska Native people. Throughout the past 15 years, ways of knowing that resonate with CHA/Ps have been incorporated into CHA/P cancer education [15,2]. Alaska's CHA/Ps also shared understandings that guided module development, with themes echoing Indigenous Ways of Knowing that emphasize relationships and affective domains [13]. As described by Gregory Cajete, an Indigenous educator and researcher:

“It is the affective elements—the subjective experience and observations, the communal relationships, the artistic and mythical dimensions, the ritual and ceremony, the sacred ecology, the psychological and spiritual orientations—that have characterized and formed Indigenous education since time immemorial. It is these aspects of Indigenous orientation that form a profound context for learning through exploring the multidimensional relationships between humans and their inner and outer worlds.” [16]

Working with CHA/Ps and honoring Indigenous Ways of Knowing, the educational modules were developed to include visuals, local information, storytelling, cultural teachings, imagery, and interactivity to connect affective and cognitive domains and empower learners to engage in, and promote, cancer risk reduction behaviors. For example, digital stories created by CHA/Ps that described their connection to the land through hunting and gathering were used to underscore messages on healthy diet and physical activity, while connecting learners to traditional values.

Empowerment is both a natural extension of the ongoing CBPAR with Alaska's CHA/Ps, and a foundation of CBPAR. Paulo Freire's Popular Education is a theoretical root of

CBPAR, and advocates for empowering education that leads to social transformation – an idea that has been identified as an effective health education strategy [17]. Empowerment-oriented approaches are also fundamental in working with indigenous communities. Historical trauma has disrupted traditional food systems and cultural practices, and is linked by some indigenous researchers to contemporary cancer disparities [18]. Acknowledging historical trauma and its impacts, CBPAR theorists advocate that work with indigenous communities focus on self-determination and empowerment [19]; an approach actualized by the project’s focus on cultural-relevancy, cultural strength, and empowerment. Intertwined with self-determination, empowerment is a contextual, participatory process that advances social justice, and redistributes power to increase control [20]. Empowerment-oriented approaches are designed to:

“...enhance wellness while they also aim to ameliorate problems, provide opportunities for participants to develop knowledge and skills, and engage professionals as collaborators instead of as authoritative experts.” [20]

Empowerment Theory is a framework that guides these approaches, and includes both empowering processes and empowering outcomes [21]. CBPAR “exemplifies empowering processes,” including working with the community and building capacity [21]. Empowerment outcomes are a result of empowering processes, and are measures to evaluate empowerment-informed interventions [21]. While Zimmerman acknowledges that universal measures of the construct of empowerment would be inappropriate due to the diversity of populations and contexts in which the theory can be applied, he identifies three underlying components of empowerment outcomes: intrapersonal (changes in the way individuals think of themselves), interactional (changes in understanding about a given concern), and behavioral (actions taken to directly influence outcomes) [21].

CHA/Ps are uniquely suited to empower individual and community-level health behavior change due to their centrality in each community’s health and wellness social network. Working with CHA/Ps is conceptualized as disseminating information and empowerment through existing social networks to promote health behavior change. This study tests the theory that empowering CHA/Ps to engage in cancer risk reduction behaviors supports them to disseminate cancer information to their patients and community members. This theoretical assumption is supported by a previous study’s findings that patients were more motivated by healthcare practitioners who engaged in healthy practices, while providers with healthy habits were more likely to discuss these behaviors with their patients [22].

Learners

The Director of CHAP Rural Health Services identified 379 CHA/Ps practicing in Alaska as of May 2016 via personal communication. However, no master contact list for CHA/Ps exists. The project team consequently reached out to CHA/Ps about the online cancer education modules in several ways. As each module was completed, information on the module was sent to CHA/Ps who previously participated in in-person cancer education courses, posted in the CHAP Newsletter, highlighted on the CHAP website, and sent to the CHAP Directors resource list, the CHAP Training Center Coordinators, the University of Alaska Fairbanks CHAP Academic Liaison, and the Community Health Aide Association

President. All recipients were invited to share the information widely to reach additional learners. While the modules were designed with, and for, Alaska's CHA/Ps, all modules are free and publicly accessible.

Curriculum

Substantial formative work was undertaken by the CHAP cancer education project team at the Alaska Native Tribal Health Consortium, in collaboration with CHA/Ps and their supervisors and instructors, to learn how to create culturally-relevant, distance-delivered, cancer education [13]. Four common themes were identified as culturally-relevant online learning content; local information, personal stories, visuals, and respect for individual learner's cultures. The project team developed ten culturally-relevant cancer education modules: Men's Health; Colorectal Cancer; Cancer and Our Genes; Cancer Basics; Cancer Treatment; Cancer Pain; Loss and Grief; Women's Health, Tobacco, and Nutrition & Physical Activity. Anyone can access the modules free of charge by creating an account and logging into the CHAP DLN at <https://anthc.remote-learner.net>. Each module was approved as Continuing Education (CE) by the CHAP certification board. CHA/Ps are required to complete CE to maintain certification. CE can include any medically approved continuing education that is applicable to CHA/Ps' scope of work. However, in addition to the developed cancer education modules, 16 online learning opportunities are available on the CHAP Distance Learning Network, none of which are on cancer.

To create each online learning module, a project team member drafted a storyboard in Microsoft Word that incorporated visuals, storytelling, interactivity, cultural teachings, and respect for diverse Alaska Native learners' cultures. The storyboard was then reviewed by content experts, CHA/P collaborators, and members of the CHA/P community. After incorporating all edits, a project team member translated the storyboard into an online learning module using the software "Storyline." The module was then reviewed by CHA/Ps, CHA/P instructors and directors, content experts, and the project team, with input informing changes in module design, format, and content. The finalized version was then published online. Each two-hour learning experience was designed to support CHA/Ps in their capacity as healthcare providers and community members. Consistent with the principles of CBPAR of co-learning and collaborative work [23], learners were asked about their perspectives of the modules, with iterative adjustments made to the modules in response.

Measures

Each module is available on the CHAP Distance Learning Network, where learners create an account to access the modules. After completing a module, learners are required to complete an evaluation survey before receiving Continuing Education. The evaluation survey was developed collaboratively by CHA/Ps and the project team to better understand learners, their perceptions of the modules, and to measure components of empowerment outcomes. The survey includes prompts on demographic information, motivations to take the module, perceptions of cultural respectfulness of the module, respondents' likes, critiques, and suggestions, as well as respondents' intent to share cancer information and change behavior as a result of module completion. End-of-module evaluation surveys collected through the CHAP Distance Learning Network between January and June 2016 were downloaded, then

cleaned and summarized in Microsoft Excel. Contingency tables, Pearson chi-square, McNemar's test, and odds ratios were calculated using Stata 12.1 to examine associations between intent to disseminate cancer information and intent to reduce cancer risk, as well as associations between motivation to engage in a module and intent to reduce cancer risk.

Funding and IRB Review

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Results

Learners

A total of 89 unique CHA/Ps completed at least one evaluation survey in 2016, an estimated 26% of the 379 total practicing CHA/Ps. In total, 473 evaluation surveys were completed in 2016, with 90% completed by CHA/Ps (428 surveys), and 8% completed by other community health workers, healthcare professionals, and community members. The number of learners engaging in the modules continues to rise, with about an additional 7.5 unique learners each month. About half (45%) of CHA/Ps who submit an evaluation completed 1–3 modules, and about a third (37%) completed 6 or more modules. Demographics are summarized in Table 1:

Most CHA/P population estimates were provided via personal communication from the Community Health Aide Program 16 May 2016, while education information is from a previously conducted survey of 402 CHA/Ps [15]. Learner demographics are similar to the CHA/P population, although learners tended to be more middle-aged and have more formal education, potentially as a higher percentage of learners were Community Health Practitioners (CHPs), who have passed CHAP Basic Training and are more advanced than CHAs. In addition, the module evaluations allowed learners to check multiple ethnicities, while the population estimate includes only one per CHA/P, potentially contributing to the higher percentage of learners who identify as (also) Caucasian.

CHA/P Perspectives of Online Cancer Education Modules as Culturally-Respectful and Informative

Write-in responses on what learners liked about the cancer education modules included that they felt the modules were informative (173 responses), liked the personal stories (64), appreciated the videos/visuals (30), and enjoyed the interactives/quizzes (18). Learner comments reinforced both the connection of affective and cognitive domains emphasized in

Indigenous Ways of Knowing, and highlighted the usefulness of the online learning modules in supporting CHA/Ps to engage with the topic of cancer:

“This was a meaningful and well made learning module, as every single one of us can take tips and apply it in our lives Also the subject matter is sacred, has to do with honoring our loved ones and most often we are uncertain and don’t know how to approach something as important as those two things”

“brought me to tears couple of times, and I think it will help in destroying the silence that surrounds cancer”

Learner comments also underscored understandings of the power of story in cancer education with Alaska’s CHA/Ps [15]: *“The digital stories added human nature to all facts presented.”* CHA/Ps shared how the modules were useful as tools to share cancer prevention messages with their patients, serving as *“useful testimonies I think they will help me counsel patients about screening for cancer.”*

In response to a question on how to make the cancer education modules better, CHA/Ps indicated on most surveys (75%) that they had no suggestions and/or felt the modules were good as is: *“This is great. Good mix of stories, facts and illustrations.”* When asked about module challenges, CHA/Ps said they had no challenges on 61% of surveys, and commented on technical challenges, primarily internet connectivity, on 21% of surveys.

On 100% of the end-of-module surveys, CHA/Ps shared that they’d learned what they’d hoped to learn from the modules. On almost all surveys (97%), CHA/Ps reported that the modules were respectful of them and their cultures, with positive sentiments affirmed in write-in comments: *“beautiful thought of and well designed to reflect what Native people can relate to.”* CHA/Ps were also asked to comment on their motivations for engaging in the module, with results summarized in Table 2:

The majority of respondents indicated they had engaged in the online learning for Continuing Education (table 2). The relatively small percentage of respondents who indicated they went through their first module because they wanted to know more about cancer (34%) indicates that the cancer education has reached CHA/Ps who may not have otherwise sought out information about cancer. In addition, the desire for Continuing Education was a motivator for CHA/Ps to complete modules, despite numerous CHA/P Continuing Education opportunities.

CHA/Ps Empowered to Disseminate Cancer Information and Reduce Cancer Risk

All surveyed CHA/Ps reported they intended to use information learned during the cancer education modules, including with their patients (84% of completed surveys), communities (64%), families (60%), and friends (53%). Write-in comments shared how the focus on local, relevant content connected with CHA/Ps and supported them to disseminate cancer information:

“I saw a relative from my region that had cancer and I didn’t know about it. I knew she was sick but I didn’t know it was cancer. It brought all the information close to home and made me want to share more with family and friends.”

As a result of completing a cancer education module, 94% of unique CHA/P learners planned to change at least one of their own health behaviors within six months. Table 3 tests the theoretical assumption that intent to reduce personal cancer risk, and intent to disseminate cancer information to patients, family, friends, and communities, are correlated:

A statistically significant association was found between intent to reduce cancer risk and intent to disseminate cancer information for almost all variables. For example, if a learner checked on a survey that they intended to increase their physical activity within the next six months as a result of the module, they had about 4.7 times the odds of indicating they also intended to share cancer information with their family (confidence interval of 3 to 7.5), when compared with surveys where learners did not intend to increase their physical activity. Further, not intending to reduce cancer risk was statistically significantly associated with not intending to disseminate cancer information for almost all variables. On almost all surveys (84%), CHA/Ps reported they would share learned cancer information with their patients, which may explain the few non-significant findings.

Table 4 summarizes the relationship between learners' motivations to take an online learning module (Table 2) and their intention to reduce their personal cancer risk (Table 3). While learners indicated on 76% of all surveys that they intended to reduce their personal cancer risk, learners were significantly more likely to intend to change their behavior as a result of completing a cancer education module when they were motivated to take the module because they wanted to learn more about cancer (84% of surveys) than when they were motivated to take a module because it looked interesting (73% of surveys) or they needed continuing education (76% of surveys) ($p < .001$ for both comparisons, McNemar test).

The culturally relevant online cancer education modules have empowered CHA/P learners to intend to share cancer information with their patients, families, friends, and communities, and intend to reduce their cancer risk, including by getting a cancer screening, eating healthier, being more physically active, and quitting tobacco. Further, a statistically significant correlation was found between planned behavior change and intent to share cancer information, substantiating the theoretical assumption that empowering CHA/Ps to reduce their cancer risk is an important factor in inspiring learners to disseminate cancer information.

Aspects of the culturally-relevant cancer education may be adaptable to interventions specific to other cultural contexts, including; working with the target population to develop and refine the initiative; incorporating visuals, data, language, and content related to the geography, values, and beliefs of the population; and including personal stories of individuals from the community that share content in ways that are meaningful and may resonate with the target group. However, the language, beliefs, values, geography, etc. will vary widely depending on the population the material is developed with, and for.

The learning modules have been developed in an online format to address a need for remote access to medically-accurate cancer information. Portions of CHA/P Basic Training have been moved online, which has increased CHA/Ps' familiarity with online learning. All CHA/Ps have Internet access in their clinics, however, CHA/Ps may not have home Internet

access. Only 33% of rural Alaskans were estimated to have high-speed Internet access in December 2014 [11], which could prevent some CHA/Ps from participating in the modules if their employers aren't supportive of CHA/Ps engaging in cancer education during the work day. In addition, an estimated 26% of all CHA/Ps completed an evaluation survey in 2016. While additional CHA/Ps continue to engage in the learning modules, the number of CHA/P learners is small relative to the population of Alaska's CHA/Ps. Formative work to assemble a master contact list of all CHA/P emails could have increased the reach of the modules and been an effective strategy to increase engagement. Learners have slightly more formal education, and are more advanced in their careers than the general CHA/P population; the results of this study may consequently not be representative of the entire CHA/P population.

This manuscript describes results from completed evaluation surveys that assess learners' likes, critiques, suggestions, and intent to reduce cancer risk and disseminate cancer information. However, intent does not always materialize in lived behavioral change, and additional research would be needed to assess the impact of the online cancer education modules on realized cancer risk reduction behaviors. However, in theoretical models such as the Theory of Reasoned Action, the Theory of Planned Behavior, and the Integrated Behavioral Model, intention is seen as the most important determinant of behavior [24]. Testing the Theory of Reasoned Action on cancer risk reduction behavior, Montañó and Taplin found a .50 correlation between behavioral intention and mammography screening [25], despite the lack of a culturally-relevant intervention to empower either high levels of intent or behavior.

Conclusion

The online learning modules address a lack of culturally-relevant cancer education available to CHA/Ps, and allow CHA/Ps to receive timely, medically-accurate information remotely. Results document that all CHA/P learners were empowered to share cancer information, and almost all (94%) were motivated to engage in behavioral change to reduce their own cancer risk. The collaboratively developed, culturally-relevant, online learning modules are a well-received strategy to provide rural Alaska's primary care providers with cancer education that has inspired behavioral change and knowledge dissemination through the existing networks of CHA/P learners. The evaluation results indicate that CHA/P learners have appreciated the content, format, and feel of the modules, have been empowered both to change their own behavior, and to share cancer information with their patients, families, friends, and communities. In the words of learners:

"It [the cancer education online learning module] brought to light some issues for cancer patients that I otherwise would have had no idea about. It didn't just brush on a subject and leave you wanting more answers, any question I had was quickly answered in the module. The information was concise and put together in a way that was very fluid and made sense to be in that order."

"I am happy to have learned this, and that I am able to share it now"

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Table 1

Demographic Characteristics of Unique CHA/P Learners and Estimated CHA/P Population

	Unique CHA/P Learners N (%)	Total CHA/P Population N (%)
Total	89 (100%)	379 (100%)
<i>Gender</i>		
Female	75 (84%)	324 (85%)
Male	14 (16%)	55 (15%)
<i>Ethnicity</i>		
Alaska Native	73 (82%)	303 (80%)
Caucasian	15 (17%)	30 (8%)
Other	6 (7%)	46 (12%)
<i>Age</i>		
20–29	17 (19%)	101 (27%)
30–39	23 (26%)	116 (31%)
40–49	26 (29%)	71 (19%)
50–59	15 (17%)	68 (18%)
60+	8 (9%)	23 (6%)
<i>Education</i>		
Some High School	*	24/402 (6%)
High School/GED	31 (35%)	187/402 (47%)
Some college	39 (44%)	146/402 (36%)
Associate Degree	12 (13%)	30/402 (7%)
Bachelor's Degree	*	12/402 (3%)
<i>Employment</i>		
Community Health Aide	36 (40%)	194 (51%)
Community Health Practitioner	53 (60%)	185 (49%)

* Number of respondents smaller than 5. Actual number redacted to protect the identity of respondents.

Table 2

CHA/Ps' Motivations to Take Culturally-Relevant Cancer Education Modules

	Survey completed by each unique CHA/P N (%) ^I			
	All	1 st	2 nd -3 rd	4 th
Total	428 (100%)	89 (100%)	135 (100%)	204 (100%)
<i>Why did you choose to take this online learning module?</i>				
Needed continuing education	364 (85%)	70 (79%)	118 (87%)	176 (86%)
Wanted to learn more about cancer	120 (28%)	30 (34%)	34 (25%)	56 (27%)
Looked interesting	91 (21%)	19 (21%)	31 (23%)	41 (20%)

^I Individuals may check more than one box, consequently totals do not add up to 100%

CHA/Ps Intent to Reduce Cancer Risk in Response to Culturally-Relevant Online Cancer Education is Highly Correlated with Intent to Disseminate Cancer Information

Table 3

	CHA/P Surveys N (%) ¹	Surveys intending to disseminate information to:			
		Patients	Communities	Family	Friends
Total N (%)	428 (100%)	360 (84%)	274 (64%)	258 (60%)	228 (53%)
<i>Will the information in this module make a difference in the ways you take care of yourself? Within the next six months, I plan to:</i>					
Odds Ratio (Lower Confidence Interval, Upper Confidence Interval) ² Exposure = behaviors, Outcome = dissemination					
Not make any changes	86 (20%)	0.88 (0.46, 1.68)	0.17 (0.10, 0.30)***	0.22 (0.13, 0.38)***	0.23 (0.13, 0.40)***
Get information about having a recommended screening exam	111 (26%)	1.06 (0.58, 1.97)	3.45 (1.97, 6.02)***	2.65 (1.60, 4.38)***	2.60 (1.62, 4.18)***
Schedule a recommended screening exam	84 (20%)	4.16 (1.45, 11.95)**	7.74 (3.35, 17.88)***	7.00 (3.29, 14.93)***	5.17 (2.77, 9.66)***
Have a recommended screening exam	98 (23%)	2.76 (1.21, 6.32)*	5.29 (2.71, 10.31)***	2.78 (1.63, 4.74)***	3.32 (1.98, 5.58)***
Stop using tobacco	59 (14%)	12.14 (1.61, 91.59)**	4.08 (1.85, 8.98)***	5.83 (2.52, 13.48)***	6.96 (3.12, 15.55)***
Cut down on my tobacco use	84 (20%)	0.90 (0.46, 1.75)	2.35 (1.31, 4.21)**	2.44 (1.38, 4.29)**	2.09 (1.24, 3.51)**
Increase my physical activity	201 (47%)	2.30 (1.29, 4.12)**	3.67 (2.33, 5.78)***	4.72 (2.97, 7.49)***	3.83 (2.49, 5.89)***
Eat healthier	178 (42%)	1.71 (0.97, 3.03)	2.18 (1.42, 3.36)***	2.41 (1.58, 3.68)***	2.60 (1.72, 3.93)***

* p<.05

** p<.01

*** p<.001

¹ Individuals may check more than one box, consequently totals do not add up to 100%

² These odds ratios compare the odds of learners intending to disseminate information to a specific group on an evaluation survey if a given behavior is intended, with the odds of a learner intending to disseminate information to the group if that behavior is not intended

Table 4

CHA/Ps' Motivations to Take the Culturally-Relevant Cancer Education Modules and Intent to Reduce Personal Cancer Risk

	Completed surveys N (%) ^I <i>Why did you choose to take this online learning module?</i>			Total
	Looked interesting	Needed continuing education	Wanted to learn more about cancer	
Total	91 (100%)	364 (100%)	120 (100%)	428 (100%)
Intending to change behavior	66 (73%)	275 (76%)	101 (84%) ***	325 (76%)
Not intending to change behavior	25 (27%)	89 (24%)	19 (16%)	103 (24%)

^I Individuals may check more than one box, consequently totals do not add up to 100%

*** p<.001, two separate McNemar Tests comparing percent intending to change behavior for those who wanted to learn more about cancer with either those who chose to take the online learning module because it looked interesting, or with those that needed continuing education