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Results From a Pilot Video Intervention to Increase Cervical Cancer Screening in Refugee Women

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Abstract

Many refugee women emigrate from countries with high cervical cancer incidence rates and have low rates of cervical cancer screening both before and after resettlement. Refugee women face many barriers to cervical cancer screening, including limited knowledge of cervical cancer and screening recommendations and cultural and linguistic barriers to being screened. Our pilot study aimed to develop and evaluate educational videos to promote cervical cancer screening among Karen-Burmese and Nepali-Bhutanese refugees, two of the largest groups of refugees arriving to the United States in recent years. We developed culturally tailored narrative videos for each ethnic group. Karen-Burmese and Nepali-Bhutanese women ($N = 40$) were recruited through community health educators to participate in a pre- and posttest study. We assessed changes in cervical cancer knowledge and intentions to be screened, and satisfaction with the videos. We found that women were significantly more likely to report having heard of a test for cervical cancer and indicated significantly greater intentions to be screened after watching the video. Their knowledge about cervical cancer and screening also improved significantly, and they reported high levels of acceptability with the video. Our results suggest that culturally tailored narrative educational videos were acceptable to the target audiences and may be effective in increasing cervical cancer screening among refugee women. Further research should assess how health care and social service providers could implement video-based interventions to encourage women to be screened for cervical cancer during early resettlement.

Keywords

cancer screening; cervical cancer; refugee; video

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Declaration of Conflicting Interests

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Many refugee women emigrate from countries with high cervical cancer incidence rates and are unlikely to have been screened for cervical cancer prior to resettlement (Arbyn et al., 2011; Miller, Chu, Hankey, & Ries, 2008). These disparities continue after arrival in the United States, where refugee women have low rates of screening uptake (Barnes & Harrison, 2004; Harcourt et al., 2014; Ho & Dinh, 2011; Taylor, Nguyen, Jackson, & McPhee, 2008). Until recently, two of the largest refugee groups arriving in the United States were from Burma (Myanmar) and Bhutan, comprising 56% of all resettled refugees in 2011 (Association for Asian American Studies, 2014; Office of Refugee Resettlement, 2012). Most refugees from Burma have Karen ethnicity and lived in camps along the Thai-Burma border prior to resettlement, while most Bhutanese refugees arrived from camps in Nepal where many had lived most of their lives (Trieu, Vang, & Youuee, 2015). Relatively few interventions to promote cervical cancer screening among refugee women have been developed or tested, and none have been targeted toward refugee women from Burma or Bhutan (Dunn et al., 2017; Mahloch et al., 1999; Taylor, Jackson, et al., 2002).

Research on cervical cancer screening among refugee women has identified several factors that contribute to low rates of screening in this population. These include lack of knowledge or misconceptions about the etiology of cervical cancer, as well as limited knowledge of screening procedures and guidelines (Haworth, Margalit, Ross, Nepal, & Soliman, 2014; Ho & Dinh, 2011). Refugee women face barriers to accessing health care services such as language, cost, and transportation (Lor et al., 2017). Some research also suggests that providers may be unsure about when to provide screening given the many health conditions that may need to be addressed on arrival in the United States (Zhang et al., 2017).

The Centers for Disease Control and Prevention (2013) recommend that refugee women receive cervical cancer screening soon after resettlement. Refugee women are eligible for health insurance and assistance identifying a regular health care provider during their first year of arrival (Office of Refugee Resettlement, 2015). However, they may also have many competing priorities that cause them to delay seeking preventive health services (Morris, Popper, Rodwell, Brodine, & Brouwer, 2009). Therefore, there is a need for educational interventions that can be used throughout early resettlement to help women understand the importance of cervical cancer screening (Zhang et al., 2017). The Guide to Community Preventive Services (2017) recommends that interventions to improve cervical cancer screening include education that is culturally tailored to address the context of the communities they are targeting. Previous studies have shown that culturally tailored videos can increase cancer knowledge and intentions to screen among other ethnic and immigrant groups (Jackson et al., 2002; Kepka, Coronado, Rodriguez, & Thompson, 2012; Taylor, Hislop, et al., 2002). However, few studies have evaluated the feasibility and efficacy of culturally tailored narrative videos to increase cervical cancer knowledge and intentions to be screened among refugee women.

Our study aims were to develop and evaluate educational videos to promote cervical cancer screening among Karen-Burmese and Nepali-Bhutanese refugee women. In this article, we describe the video development, video content, and results from a pilot study to evaluate the acceptability and efficacy of the video.

Method

Video Development

We developed two cervical cancer screening educational videos: one for Karen-speaking Burmese refugee women and one for Nepali-speaking Bhutanese refugee women. Karen is the language spoken by the majority of Burmese refugees, and Nepali is the language spoken by nearly all Bhutanese refugees. Our theoretical framework was the behavioral model for vulnerable populations, which has been used previously to explain patterns of cervical cancer screening among other racial/ethnic minority and immigrant groups (Bazargan, Bazargan, Farooq, & Baker, 2004; Harcourt et al., 2014; Owusu et al., 2005). The model posits that the interaction of predisposing (i.e., demographics, health beliefs, and social structure), enabling (i.e., personal, family, and community resources), and need-for-care factors (i.e., perceived and evaluated health concerns) determine the use of health services (in this case, cervical cancer screening; Babitsch, Gohl, & von Lengerke, 2012; Gelberg, Andersen, & Leake, 2000). Our video was developed based on input from community advisors from Karen-Burmese and Nepali-Bhutanese refugee communities; key informant interviews with individuals from refugee resettlement organizations; focus groups with Karen-Burmese and Nepali-Bhutanese refugee women; and our previous experience producing cervical cancer screening education videos for other Asian refugee groups (Burke et al., 2004; Lor et al., 2017; Mahloch et al., 1999; Zhang et al., 2017).

We used an entertainment-education (narrative-based) approach to develop the script and produce the video (DeFossard & Lande, 2008; Murphy et al., 2015). The entertainment-education format uses stories about familiar characters to elicit changes in attitudes, behavior, and social norms and has been effective in changing a variety of health behaviors for multiple racial/ethnic groups (DeFossard & Lande, 2008; Murphy et al., 2015). Each video included four modules: a prologue establishing the main characters and topic; two core segments focusing on logistic barriers to screening and screening procedures; and an epilogue closing the story and reminding viewers of key points. Different prologue and epilogue modules were produced for the Karen-Burmese and Nepali-Bhutanese videos, but the same core segment modules were included in both videos. This approach allowed us to enhance the relevance of the cervical cancer screening information to women from both refugee groups without having to produce two completely different videos.

The character selection and storylines for the two videos were guided by suggestions from our community advisors, as well as Karen and Nepali members of the research team. Therefore, there are some differences between the ages of the characters in the two videos, as well as the culturally specific dialogue that is included in the epilogues and prologues. However, the Karen-Burmese and Nepali-Bhutanese videos address the same cervical cancer screening barriers. Each video includes characters representing three generations of women. The Karen-Burmese characters include a grandmother, mother, and young daughter, while the Nepali Bhutanese characters include a grandmother, mother, and teenage daughter. The core segments also feature a clinic receptionist, a male doctor, and an Asian American female doctor. A local video production company with extensive cross-cultural experience in both the United States and developing countries produced the videos. This company had

successfully collaborated with the research team on several previous video projects with Asian immigrant groups.

Video Content

The videos were each 17 minutes long and sought to address knowledge deficits and health care system issues that were identified during the focus groups (Lor et al., 2017; see Table 1). Women reported that they were unfamiliar with female anatomy, had limited knowledge of what causes cervical cancer or how it could be prevented, and who should receive Pap testing or what the procedure involves. Focus group participants also identified issues related to the health care system that make it difficult to get cervical cancer screening, including their limited English proficiency, concerns about health insurance and health care costs, transportation difficulties, and uneasiness about seeing male providers for women's health exams. Based on recommendations from our community advisors as well as refugee resettlement organization personnel, we avoided clinical, technical, and complicated terminology (Zhang et al., 2017). For example, the videos include simple messages that focus on promoting regular Pap testing rather than messages addressing detailed guidelines for interval Pap testing and human papillomavirus (HPV) testing. While the videos focus on Pap testing, they specifically describe that cervical cancer is caused by a viral infection (HPV) and that there is a vaccine to protect against HPV (for adolescent girls and young women). The videos also emphasize that refugee women should take advantage of health care that is available in the United States but was not available to them prior to migration.

Our video content was culturally tailored to each ethnic group. Cultural tailoring can enhance the relevance of health education materials for racial/ethnic minority and immigrant groups (Kreuter & Wray, 2003; Pasick, D'Onofrio, & Otero-Sabogal, 1996). As recommended by Kreuter and colleagues, multiple strategies were used to tailor our videos to Karen-Burmese and Nepali-Bhutanese women, including linguistic, peripheral, evidential, sociocultural, and constituent-involving strategies (Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003; Kreuter & McClure, 2004). As an example, photos of each group's country of origin are shown at the beginning and end of each video, while traditional music from that country plays. Traditional health practices and ceremonies are shown in the videos. For example, the Karen video recognizes traditional Karen-Burmese postpartum observances and wrist tying ceremonies. Pap testing is also discussed in the context of women's migratory experiences, to acknowledge their lived experience and competing priorities.

Study Design

We conducted a pilot study to evaluate the acceptability and efficacy of the videos in the greater Seattle area. Our institutional review board approved all study procedures. Using a pre- and posttest survey design, we assessed changes in cervical cancer screening awareness, intentions to be screened, and cervical cancer-related knowledge, as well as participant satisfaction with the video. Our project recruited and trained two health educators (one Karen-speaking and one Nepali-speaking), who recruited 20 women in each of their respective communities to participate in the study. The study protocol consisted of recruiting women by phone or in-person, then scheduling a time for a home visit. At the home visit,

health educators obtained verbal consent, administered a pretest survey, showed the video to the woman on an iPad, and administered a posttest survey. For ethical reasons, health educators also offered navigation assistance to participants who were not adherent to screening guidelines (reported not having received a Pap test in the past 3 years; Moyer & U.S. Preventive Services Task Force, 2012). This consisted of offering to help women schedule appointments if they had a regular source of care, or identifying local health care providers if they did not. All procedures were conducted in the participants' native language. Each participant was given a \$20 gift card on completion of the surveys as a token of appreciation for their time.

Study Sample

Eligibility criteria for the participants in the pilot were based on screening guidelines (Moyer & U.S. Preventive Services Task Force, 2012). Women were included if they were either Karen-speaking Burmese or Nepali-speaking Bhutanese, between the ages of 21 and 65, and had no previous history of hysterectomy. The two health educators recruited participants through personal contacts they had in their community, as well as referrals from community advisors and participants with whom they had completed data collection. We initially planned to only recruit women who were nonadherent to cervical cancer guidelines for the pilot intervention phase of the study. However, our previous focus group research showed that Karen-Burmese and Nepali-Bhutanese refugee women are often very unfamiliar with cervical cancer and Pap testing and do not know whether they have been screened for cervical cancer or not.

Surveys

Both pre- and posttest surveys included the same items to assess cervical cancer screening awareness, intentions, and knowledge. Posttest surveys also included demographic, cervical cancer screening history, and video satisfaction items. Health educators recorded participants' responses on paper surveys.

Demographic Characteristics—Women were asked about their age, years living in the United States, English proficiency, years of education, and marital status. Other questions asked if they had a usual source of health care, and about their type of health insurance.

Cervical Cancer Screening History—Women were asked if they had received a Pap test since arriving in the United States and, if so, whether they had received one in the past 3 years.

Cervical Cancer Screening Awareness and Intentions—We assessed participants' cervical cancer screening awareness using two questions: (a) whether they had heard of a test for cervical cancer and (b) whether they had heard of a Pap test (response options were yes, no, or don't know). Additionally, we assessed their intentions to be tested for cervical cancer in the next 12 months (response options of very likely, somewhat likely, and not likely).

Cervical Cancer Knowledge—Women were asked 10 true or false questions related to their knowledge about cervical cancer and cervical cancer screening. Examples included “Cervical cancer can be prevented” and “Women can ask to see a female doctor when they schedule clinic appointments to get tests to check for cervical cancer.” Correct responses to knowledge questions were given 1 point, while incorrect and “don’t know” responses received 0 points. We calculated a composite knowledge score for each participant by summing the correct answers, with the maximum knowledge score being 10.

Video Satisfaction—In the posttest survey, women were asked whether they agreed or disagreed with statements about their satisfaction with the videos and opinions about future use of the videos. Examples included “You could identify with women in the video,” “You would recommend the video to other women in your community,” and “The video should be shown to refugee women during clinic visits.” In addition, they were asked about the video length, whether there was anything in the video they did not understand, and whether there was anything in the video they did not like. Finally, women were asked what they liked most about the video. The health educators recorded responses to the open-ended questions in English.

Data Analysis

Survey data were analyzed using STATA® 14. We calculated frequencies and descriptive statistics to summarize demographic characteristics, as well as items related to cervical cancer and the video. We used unpaired *t* tests and Fisher’s exact tests with $\alpha = .05$ and 95% confidence intervals to assess differences between the Karen-Burmese and Nepali-Bhutanese in their demographic characteristics and cervical cancer history. Similarly, we used McNemar’s exact tests and paired *t* tests with $\alpha = .05$ and 95% confidence intervals to compare participants’ pre- and posttest responses on awareness, intention, and individual knowledge items, and composite knowledge scores. Two research team members categorized open-ended responses related to the participants’ satisfaction with the video independently. Discrepancies were identified by a third member of the research group, and were then discussed and resolved. We summarized responses across categories and identified representative responses.

Results

Our study sample consisted of 40 women, 20 were Karen-Burmese and 20 were Nepali-Bhutanese (Table 2). The mean age of all participants was 35 years (range 21–58), and they had been in the United States 5 years on average. Most reported that they did not speak English well or at all (75%). They had 8 years of education on average, and 65% of the women were currently married. All women reported that they had a usual source of health care, and all but one had health insurance. There were no significant differences in demographic characteristics between the Karen-Burmese and Nepali-Bhutanese participants. Most women reported having had a Pap test since arriving in the United States (73%), as well as having had a Pap test in the last 3 years (70%). Nepali-Bhutanese women were significantly more likely to have been screened in the United States than Karen-Burmese women (90% vs. 55%).

We assessed changes in their cervical cancer awareness and intentions to be screened for cervical cancer (Table 3). Overall, women were significantly more likely to report having heard of a test for cervical cancer (58% to 100%, $p < .001$) and a Pap test (45% to 100%, $p < .001$) after watching the video. Women also reported they were more likely to be screened after watching the video (40% to 80%, $p < .001$). Changes between pre- and posttests were significant ($p < .001$) for all three of these variables among Nepali-Bhutanese women. There were positive changes among Karen-Burmese women for all three variables, but the change was only significant for Pap testing awareness ($p = .008$). Because women were asked about previous screening after watching the video, some women who reported they had not heard of cervical cancer screening on the pretest survey reported they had not been screened on the posttest survey (they realized they had been screened when they watched the video).

We assessed changes in knowledge scores among the women after watching the video (Table 3). Overall, women showed significant increases in knowledge for all the individual items, as well as the mean composite knowledge scores (5.6 to 9.3, $p < .001$) after viewing the video. There were also increased in knowledge for individual items across ethnic groups; however, not all were significant. Mean changes in the knowledge score were significant for women in each ethnic group (5.4 to 9.2, $p < .001$ for Karen-Burmese and 5.8 to 9.5, $p < .001$ for Nepali-Bhutanese).

We also assessed participant satisfaction with the video and opinions about future use of the video, and findings are presented in TABLE4Table 4. Because there were no significant differences between groups, data are reported for all women combined. Scores were high for all items, indicating high satisfaction with and perceived utility of the video. Most women also agreed that the video length was “about right,” and very few women reported that there was anything in the video they did not understand or did not like.

We also analyzed participants’ open-ended responses on what they liked most about the video. Their responses fell into five main categories: cervical cancer information, Pap testing information, information on logistic barriers, doctor scenes, and mother and daughter scenes. Among Karen-Burmese women, the cervical cancer and Pap testing information was most preferred. As one Karen-Burmese woman shared, “It is very helpful for women to know about cervical cancer so we can protect ourselves.” Another Nepali-speaking participant shared, “The video shows what you should expect when you go for a checkup; I liked that it [the examination process] is shown.” Among the Nepali-Bhutanese women, the mother and daughter scenes were rated highly. Many also commented that it was helpful to have information about availability of female doctors and female interpreters. A Nepali-Bhutanese woman commented that she liked “the way the daughter tries to convince her mother to go see a doctor and stresses that female doctors are available.” Among women who noted there were things they did not like or understand, most wanted more detailed information, one was embarrassed by the clinic scene and another thought the acting could have been more natural. Overall, comments from participants expressed their increased awareness and knowledge of cervical cancer and screening. As one Nepali-Bhutanese woman shared, “She that liked the information the doctor provided, and also the fact that she didn’t have to meet with a person to get the information.” Another Karen-Burmese

participant stated, “I know more about cervical cancer. I didn’t think cervical cancer can be cured but after the video I know it can be prevented and cured.”

Discussion

Our study was the first to evaluate the acceptability and efficacy of a video intervention to increase cervical cancer–related knowledge and screening intentions among Karen-Burmese and Nepali-Bhutanese refugee women. We found that women were more likely to report having heard of a test for cervical cancer after watching the video, and they indicated greater intentions to be screened. Their knowledge about cervical cancer and screening improved, and they reported high levels of acceptability for the video. Our findings suggest that educational videos may be an effective tool for promoting cervical cancer screening among refugee women, and we further discuss our findings below.

The reported study makes an important contribution to the literature on video interventions for ethnic minority and immigrant populations (Byrd et al., 2013; Lamb, Ramos Jaraba, Graciano Tangarife, & Garces-Palacio, 2017; Mahloch et al., 1999; Murphy et al., 2015). The videos we developed used a narrative approach in an effort to culturally tailor the content to the populations we were trying to reach. Examples of tailoring in our videos included making videos in their preferred language, using images from the refugees’ country of origin, using characters across generations, and incorporating cultural traditions into the story. Theory suggests that cultural tailoring makes health education more effective because it helps overcome resistance to cancer screening and facilitates the processing of new information about cancer prevention (Kreuter et al., 2007; Kreuter & McClure, 2004; Kreuter & Wray, 2003). Women’s survey responses about the video indicated that they identified with the characters portrayed and that the video accurately portrayed women from their community. Therefore, our findings provide support for previous studies showing that narrative approaches may be more effective than other approaches in reaching immigrant and racial/ethnic minority women (Kreuter et al., 2010; Murphy et al., 2015).

Our findings also suggest that women would be comfortable watching the video in a variety of settings and modalities. For example, all women agreed that the video should be shown by refugee resettlement organizations and community organizations. Almost all reported that it should be used during clinic visits and they would be comfortable watching the video on their mobile phone. Women also expressed they would be comfortable watching the video in groups. Our previous research with health and social service providers serving refugee populations suggested that cervical cancer screening information should be offered early and often during the resettlement period (Zhang et al., 2017). Frequent and consistent messaging using a variety of modalities may help ensure that women receive pertinent health information during a time of many competing priorities (Yun et al., 2016). Women who have already been screened may still benefit from watching the video given that there are often misconceptions about screening in refugee populations, as well as the fact that all women in our study reported learning something new.

In our study, women watched the video as part of a home visit by a health educator who spoke either Karen or Nepali. Several studies have used videos as part of educational

interventions involving home visits by community health workers. Results from these studies suggest that it is an effective combination for increasing knowledge and screening behaviors (Luque et al., 2016; Thompson et al., 2017; Wang, Fang, Tan, Liu, & Ma, 2010). For example, in a study among Latina immigrants in Washington State, watching a Spanish language video was more effective at increasing cervical cancer screening when accompanied with a home visit from a *promotora* who could answer questions and provide navigation assistance (Thompson et al., 2017). Future studies in refugee populations should assess whether videos can be more effective in increasing cervical cancer-related knowledge and screening if paired with navigation assistance from a community health worker.

Our pilot study was limited by a relatively small sample size and was conducted in one geographic area of the United States. Findings may not be generalizable to other Karen-Burmese and Nepali-Bhutanese communities. Specifically, levels of screening and baseline cervical cancer knowledge may have been relatively high in our sample due to health care resources available to refugee populations in the greater Seattle area. All our participants had a usual source of care and only one was not insured. Refugee women in other parts of the United States may not have similar access to high-quality care. Given that refugee communities can be small and highly connected, women in our study may have been more likely to report higher intentions to be screened and satisfaction with the video because of their relationship with the health educator or other women involved with the project.

In conclusion, refugee women may benefit from culturally tailored educational videos to promote cervical cancer screening. Future research should assess whether the videos increase rates of cervical cancer screening and impact knowledge levels long-term. In addition, studies should evaluate the best approaches and modalities for delivering video-based cervical cancer education to refugee women, such as how health care and social service providers can best implement video-based interventions to encourage women to be screened for cervical cancer during early resettlement.

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Table 1

Examples of Focus Group Findings and Video Content.

Focus group finding	Video module	Example(s)
Basic knowledge		
Female anatomy	Core Segment 2	The female doctor shows the Karen-Burmese grandmother a diagram of women's reproductive tract and explains it to her.
Knowledge and beliefs about cervical cancer		
Caused by HPV	Core Segment 2	The Karen-Burmese grandmother asks her doctor what causes cervical cancer and the doctor replies that a viral infection called HPV causes it.
Preventable	Core Segment 2	The female doctor tells the Karen-Burmese grandmother that Pap testing can detect abnormal cells before cancer develops so it can be prevented.
	Epilogue	The Nepali-Bhutanese mother tells the grandmother that there is a vaccine to prevent cervical cancer and they should get the teenage daughter vaccinated. ^{a,b}
Curable	Prologue	The Nepali-Bhutanese teenage daughter looks cervical cancer up on her cell phone and lets the grandmother know that it is curable, if detected early. ^a
Knowledge about Pap testing		
Screening guidelines	Prologue	The Karen-Burmese mother tells the grandmother that a doctor told her that all women ages 21–65 should get regular Pap tests, even if they have no symptoms. ^c
Procedure	Core Segment 2	The female doctor explains Pap testing procedures to the Karen-Burmese grandmother and shows her specula of different sizes and the soft brush that is used.
Health care system issues		
Limited English proficiency	Prologue	The Karen Burmese grandmother tells the mother that she does not like seeing doctors because she does not speak English, and the mother tells her that interpreters are available. ^c
Male providers	Core Segment 1	The Karen-Burmese mother requests a female doctor and female interpreter for the Karen grandmother's appointment when she checks in at the clinic reception desk.
	Core Segment 2	The male doctor offers to refer the Nepali-Bhutanese mother to a female doctor for her Pap test.
Cost	Core Segment 1	The Nepali-Bhutanese mother asks the clinic receptionist about the cost of Pap tests, and the receptionist tells her they are inexpensive and covered by Medicaid as well as most health insurance.
Transportation	Core Segment 2	The Nepali-Bhutanese grandmother tells her doctor that it is hard for her to attend clinic visits because of transportation difficulties, and the doctor tells her that many women qualify for transportation assistance.

Note. HPV = human papillomavirus.

^a Analogous information is provided in the prologue or epilogue of the Karen-Burmese video.

^b While the videos focused on cervical cancer screening, we also included some information about HPV vaccination for adolescent girls.

^c Analogous information is provided in the prologue or epilogue of the Karen-Burmese video.

Table 2Demographic Characteristics of Study Sample ($N = 40$).

Characteristics	Karen-Burmese, $n = 20$		Nepali-Bhutanese, $n = 20$		All women, $N = 40$	
	Mean $\pm$ SD		Mean $\pm$ SD		Mean $\pm$ SD	
Age	34.5 $\pm$ 12.1		34.6 $\pm$ 10.4		34.5 $\pm$ 11.1	
Years in the United States	5.9 $\pm$ 4.1		4.8 $\pm$ 2.2		5.4 $\pm$ 3.3	
Years of education	8.5 $\pm$ 4.4		7.6 $\pm$ 5.5		8.1 $\pm$ 4.9	
	n	%	n	%	n	%
Age						
<30	12	60	8	40	20	50
30–44	3	15	8	40	11	28
45	5	25	4	20	9	22
Years in the United States						
<5	8	40	9	45	17	42
5–9	10	50	11	55	21	53
10	2	10	0	0	2	5
English proficiency						
Spoke very well/well	5	25	5	25	10	25
Did not speak well	12	60	10	50	22	55
Did not speak at all	3	15	5	25	8	20
Years of formal education						
<6	4	20	8	40	12	30
6–11	10	50	5	25	15	38
12	6	30	7	35	13	32
Marital status						
Currently married	10	50	16	80	26	65
Previously married	3	15	1	5	4	10
Never married	7	35	3	15	10	25
Usual place for health care						
Yes	20	100	20	100	40	100

Characteristics	Karen-Burmese, <i>n</i> = 20		Nepali-Bhutanese, <i>n</i> = 20		All women, <i>N</i> = 40	
	Mean ± <i>SD</i>		Mean ± <i>SD</i>		Mean ± <i>SD</i>	
No	0	0	0	0	0	0
Type of insurance						
Medicaid	10	50	14	70	24	60
Private	9	45	6	30	15	38
None	1	5	0	0	1	2
Ever had Pap test in the United States *						
Yes	11	55	18	90	29	73
No	9	45	2	10	11	27
Pap test in the United States during last 3 years						
Yes	11	55	17	85	28	70
No	9	45	3	15	12	30

* Significant difference between the two groups at *p* < .05 level.

Table 3

Changes in Cervical Cancer Awareness, Intentions, and Knowledge Among Karen-Burmese, Nepali-Bhutanese, and All Women ($N = 40$).

Statements	Karen-Burmese (<i>n</i> = 20)			Nepali-Bhutanese (<i>n</i> = 20)			All women (<i>N</i> = 40)		
	Pre-video, <i>n</i> (%)	Post-video, <i>n</i> (%)	<i>p</i>	Pre-video, <i>n</i> (%)	Post-video, <i>n</i> (%)	<i>p</i>	Pre-video, <i>n</i> (%)	Post-video, <i>n</i> (%)	<i>p</i>
Awareness and intentions to be screened									
Heard of a cervical cancer test	16 (80)	20 (100)	—	7 (35)	20 (100)	**	23 (58)	40 (100)	**
Heard of a Pap test	12 (60)	20 (100)	*	6 (30)	20 (100)	**	18 (45)	40 (100)	**
Likely to be tested	9 (45)	13 (65)	—	7 (35)	19 (95)	**	16 (40)	40 (100)	**
Knowledge items (correct response)									
A virus causes cervical cancer. (True)	11 (55)	19 (95)	*	7 (35)	17 (85)	*	18 (45)	36 (90)	**
Cervical cancer can be prevented. (True)	8 (40)	20 (100)	**	13 (65)	20 (100)	*	21 (53)	40 (100)	**
Cervical cancer can never be cured. (False)	10 (50)	17 (85)	*	12 (60)	20 (100)	*	22 (55)	37 (93)	**
Women only need to get tests to check for cervical cancer if they have symptoms. (False)	13 (65)	17 (85)	—	13 (65)	19 (95)	*	26 (65)	36 (90)	*
Women should start getting tests to check for cervical cancer when they are 21 years old. (True)	6 (30)	20 (100)	**	7 (35)	20 (100)	**	13 (33)	40 (100)	**
Women can stop getting tests to check for cervical cancer when they are 50 years old. (False)	10 (50)	17 (85)	—	9 (45)	16 (80)	*	19 (48)	33 (83)	**
Women can ask to see a female doctor when they schedule clinic appointments to get tests to check for cervical cancer. (True)	15 (75)	20 (100)	—	16 (80)	20 (100)	—	31 (78)	40 (100)	*
Women can ask to have a female interpreter when they schedule clinic appointments to get tests to check for cervical cancer. (True)	15 (75)	20 (100)	—	17 (85)	20 (100)	—	32 (80)	40 (100)	*
Clinics can never provide transportation assistance for women who have appointments to get tests to check for cervical cancer. (False)	10 (50)	15 (75)	—	10 (50)	18 (90)	*	20 (50)	33 (83)	**
Most insurance companies will pay for tests to check for cervical cancer. (True)	10 (50)	18 (90)	*	12 (60)	20 (100)	*	22 (55)	38 (95)	**

* Pre- and posttest difference significant at the $p < .05$ level.

** Pre- and posttest difference significant at the $p < .001$ level.

Table 4Satisfaction and Future Use of the Video Among All Women ($N = 40$).

Statement	Agree with statement, n (%)
You learned new things from the video.	40 (100)
You could identify with the women you saw in the video.	40 (100)
The video accurately portrays women from your community.	40 (100)
Refugee resettlement organizations should show women the video soon after they arrive in the United States.	40 (100)
Community organizations should show refugee women the video.	40 (100)
The video should be shown to refugee women during clinic visits.	39 (98)
You would be comfortable watching the video with a group of women from your community.	40 (100)
You would be comfortable watching the video on a mobile phone.	35 (88)
You would recommend the video to other women in your community.	40 (100)
Statement	Responses, n (%)
What is your opinion about the video length?	
Too short	4 (10)
About right	36 (90)
Was there anything in the video that you did not understand?	
Yes	7 (17)
No/don't know	33 (83)
Was there anything in the video that you did not like?	
Yes	4 (10)
No/don't know	36 (90)