

Cervical Cancer Prevention in Rural Nicaragua - An Ambassador Model

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Abstract -- Cervical cancer prevention is dependent on frequent Pap smear screening based on national guidelines and recommendations. Several identified barriers to health access may prevent women in several Latin American countries from receiving the consistent care necessary to prevent cervical cancer. The objective of this study was to evaluate the effectiveness of a peer-education based women's health program in increasing Pap screening adherence and cervical cancer awareness in a rural Nicaraguan community. In this community trial, researchers created an ambassador model for community education and evaluated the effects by way of surveys and chart review at a local clinic.

Keywords-global health; Human Papillomavirus (HPV); cervical cancer; health education; women's health.

I. INTRODUCTION

In Nicaragua, cervical cancer is the leading cause of cancer-related deaths, with an estimated 18.43 deaths per 100,000 females in 2011 [1]. Prevention of cervical cancer is largely dependent on periodic Pap smear screening. The nature of this test makes it highly specific, but only moderately sensitive, requiring periodic testing to ensure results remain accurate [2]. Access to consistent health care is difficult in many Latin American countries due to educational, socioeconomic, and cultural barriers [3][4]. There is a larger difference in the mortality of cervical cancer than the incidence of cervical cancer when comparing these numbers between developed and developing nations [5]. This supports the idea that the greatest risk factor leading to death from cervical cancer is the lack of regular screening or health care intervention.

The objective of this study is to evaluate the effectiveness of a peer-education based women's health program in increasing Pap screening rates and cervical cancer awareness in a rural Nicaraguan community.

In section II, we describe the methods used by researchers to establish the education program and perform the 2 separate chart reviews. In section III, we present a summary of the pertinent raw data from both the survey assessments and chart reviews. In section IV, we present the qualitative data obtained from education sessions. In section V, we combine quantitative data and qualitative data and discuss limitations and future indications for this investigation.

II. METHODS

Investigators used an educational model and materials previously validated by Moffitt Cancer Center [6] on a rural US Hispanic population to develop a health education ambassador system. Community leaders (n=11) in a small rural Nicaraguan community were identified via collaboration with a local non-governmental organization (NGO), recruited, trained, and then instructed to educate other women (n=29) in a session-based manner. These sessions were organized by the ambassadors in local homes, and the participants in attendance were friends or family members recruited by the ambassadors. Sessions were held in small groups in living rooms or private terraces to encourage conversation amongst participants. Data was collected through questionnaires and structured discussion.

Eligibility for both ambassador and participant groups was dependent on age (21-70), gender (female), and location (living within the community of Cedro Galan). Specific eligibility for community leaders to serve as ambassadors included ability to be contacted via phone, attendance to training sessions, and willingness to host independent sessions.

The success of this education, and community perceptions of Pap screening and cervical cancer, were measured through a survey (n=40). This survey contained both true/false items for evaluation of knowledge and scaled health prevention readiness measurements.

All discussion topics were archived by researchers and coded for categories for qualitative analysis.

A chart review was performed at the local clinic in order to establish baseline community Pap screening adherence (n=564). Eligible charts from women ages 21-70 were reviewed and recorded based on age, smoking status, Pap screening history and records, and available comorbidities.

III. QUANTITATIVE DATA

A. Survey Results

Comparisons made between pre-session survey and post-session survey are presented in Table 1. For the two questions presented in Table 1, the results were consistent with p values of p=0.09, and p=0.61, respectively. These results are further discussed in the conclusions section below.

TABLE I. PRE- AND POST- SESSION SURVEY RESULTS

	Question Category					
	Awareness of HPV			HPV causes cervical cancer		
	Total	Incorrect (%)	P-value	Total	Incorrect (%)	P-value
Pre-test	34	6 (17.6%)	p=0.09	36	1 (3.7%)	p=0.61
Post-test	27	2 (5.6%)		33	1 (3%)	

B. Chart Review Results

Baseline chart review data for the 564 patients reviewed, the mean age was 38.6 years (+/- 12.4 years) with a minimum of 21 years and a maximum of 70 years. The review indicated that 498 (88.3%) of eligible women lacked positive Pap screening information in their clinic chart. Of the 66 (11.7%) women that had Pap screening on record, 2 (3%) had an abnormal result possibly indicative of cancer. Of the charts reviewed, smoking data was only available for 34 (6%) patients. Of these patients, 4 (11.8%) were listed as current or past smokers.

IV. QUALITATIVE DATA

Participants identified multiple barriers to effective cervical cancer prevention in their community based on personal experience. Qualitative data was assigned to categories to develop the following themes shown in Table 2 below. All participants agreed with the need to prevent cervical cancer and increase awareness in their community.

V. CONCLUSIONS

The overarching goal of this multi-part study was to increase cervical cancer awareness and identify a method for effective community education. While the survey data did not provide evidence of a change in cervical cancer awareness following participation in the educational program, researchers identified several confounding factors, including the unfamiliarity of the population with the survey format. The formatting used included several categories with answers coded in a graduated format (very likely,

TABLE II. THEMES AND CATEGORIES

Themes	
Category	Related Concern
Education Barriers	Poor Health Literacy
Financial or physical barriers	Travel and clinic availability
Familial, marital, religious barriers	Community stigma
Fear or diagnosis of cancer	n/a

somewhat likely, etc.), which weren't familiar to this patient population despite repeated instruction by researchers. This finding may be useful for future studies in similar communities and an additional long-term study should be completed to test a reformatted and more intuitive survey with simplified questions coded with only two or three predetermined answers. Future studies may test follow-through with cervical cancer prevention information learned during educational sessions by way of increased Pap screening adherence in the population. Follow-through might be monitored by way of further chart review and survey at the local clinic. With regards to the low screening rates indicated by the chart review, it must be considered that women do have some access to public healthcare, and may have obtained their screening at more remote healthcare locations. Future study via survey will measure prevalence of screening regardless of clinic location.

Significant value was found in the formatting of this program to provide a small, safe space for discussion of sensitive topics, to encourage questions, and for the sharing of knowledge. The identified themes suggest that barriers to adequate cervical cancer prevention encompass several aspects of daily living for women in rural Nicaragua. These themes identified during this study may be used to create additional opportunities for future educational sessions on other health topics identified by the community.

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