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SHORT COMMUNICATION

Cervical cancer screening in rural mountainous Honduras: knowledge, attitudes and barriers

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ABSTRACT

Introduction: Because cervical cancer is the leading cause of cancer mortality in Honduras, this study assessed knowledge, attitudes and barriers to cervical cancer screening services by Papanicolaou smear (pap smear) for women in rural, remote Honduras served by Virginia Commonwealth University's Global Health and Health Disparities Program (GH2DP).

Methods: Two interviewers administered an institutional review board approved, 20 question survey by convenience sample methodology to adult female patients visiting GH2DP clinics in June 2014. A total of 146 surveys were completed. Of the respondents, 30 were living in La Hicaca, the largest and wealthiest village in the region, and 116 were living in surrounding, less affluent, villages.

Results: On average, women from La Hicaca had 2.9 children whereas women from surrounding villages had 4.3 children (p=0.0095). There were no significant differences between La Hicaca and surrounding villages in average respondent age, age of first intercourse and number of sexual partners. Seventy three percent (22/30) of women from La Hicaca and 60% (70/116) from surrounding villages reported undergoing cervical cancer screening by pap smear (p=0.1890). Eighty-two percent (18/22) of the respondents from La Hicaca and 84% (59/70) from surrounding villages were screened in the past two years (p=0.7846). The majority of the women from surrounding villages (81%, 57/70) and 23% (5/22) from La Hicaca traveled >1 h to receive a pap smear ($p\leq$0.0001). Women from La Hicaca (86%, 19/22) were more likely to receive their pap smear results than women from surrounding villages (60%, 42/70) (p=0.0225). Although 17% (5/30) of respondents from La Hicaca and 11% (13/116) (p=0.4175) from surrounding villages were aware of the cause of cervical cancer, 60% (18/30) of women in La Hicaca and 82% (95/116) in surrounding villages (p=0.0106) believed it is preventable. Of the 106 women (73%) who had heard of cervical

cancer screening, only 92 women (63%) had been screened ($p<0.0001$). Women undergoing cervical cancer screening were more likely to believe that cervical cancer is preventable ($n=78$, $p=0.0054$). The most common screening barriers were lack of awareness and fear (19/54, 35%; 15/54, 28%).

Conclusions: Although yearly screening services are available in this community, knowledge and access barriers exist for increased implementation. Notification of pap smear results is suboptimal. These findings will guide regional and collaborative effort to improve cervical cancer screening services.

Key words: access, attitudes, barriers, cervical cancer, Honduras, knowledge, risk factors.

Introduction

Cervical cancer is estimated to be the leading cause of cancer mortality in Honduras[1]. In 2012, the incidence of cervical cancer in Honduras was about 23%[1] and the mortality rate was 15.7%[1]. Cervical cancer mortality rates in Latin American countries are seven times higher than in North America[2]. Even though Honduras has a national plan regarding cervical cancer screening and treatment[3], there is great variability in cervical cancer screening.

Cervical cancer is only one health issue faced by the Honduran people; 15% of Hondurans have no access to healthcare coverage[4] and 58% of the rural-dwelling population of Honduras lives in extreme poverty[5]. Rural Hondurans have many health disparities compared to their urban counterparts, including cervical cancer[5].

The Papanicolaou test (pap smear) is the cervical cancer screen in Honduras. The reported cervical cancer screening rate for Honduran women is only 42%[3]. Barriers to screening fall into two broad categories: individual and structural/systemic. These barriers broadly encompass the obstacles that hinder rural Honduran women from accessing cervical cancer screening services.

Objectives

The purpose of this study was to assess attitudes, perceptions and barriers to cervical cancer screening in the rural mountainous area of Yoro, Honduras. Responses between La Hicaca and surrounding villages in Yoro were examined and compared.

Methods

Since 2005, Virginia Commonwealth University's Global Health and Health Disparities Program (GH2DP) has traveled to Yoro and partnered with the Ministry of Health and local leaders to provide medical care. The GH2DP brigade provides basic medical services to the citizens of La Hicaca, Yoro and the 17 surrounding villages. Previous studies have demonstrated that disparities to accessing health care and a high disease burden were present within these communities[6,7]. La Hicaca and environs have a population of approximately 2000 people[8]. During the 2014 GH2DP brigade, two female surveyors read a face-to-face, voluntary, anonymous questionnaire to a convenience sample of women who came to the clinic. All women were 18 years or older and were not known to be pregnant.

The questionnaire had 20 questions and was divided into four sections (Appendix A). Part 1 collected information on demography. Part 2 sought information regarding risk factors associated with cervical cancer. Part 3 evaluated the barriers to obtaining cervical cancer screening services. When a respondent answered that she had never been screened or had not returned for follow-up screening, the interviewers read a list of nine options that a woman could choose as to why she had not been screened or re-screened. Each respondent was able to choose multiple reasons. Part 4 assessed women's

knowledge of what causes cervical cancer and their beliefs about whether or not it can be prevented.

Because Yoro is rural and rugged, many women face a travel barrier when attempting to access healthcare services. Many survey respondents made this journey to the clinics in either La Hicaca or Lomitas, a satellite clinic. La Hicaca was wealthy compared to its surrounding villages (although the community still lacks electricity and running water), and the people who lived there had the privilege of having a health clinic in their community (in addition to the annual clinic GH2DP runs). Because of this proximity to the clinic and relative wealth of La Hicaca, this study explored the differences between the women of La Hicaca and the surrounding villages in terms of risk factors, access to and knowledge of cervical cancer screening. This study also analyzed whether past pap smear recipients had greater knowledge of cervical cancer and its prevention.

The survey analysis was done using SAS statistical software v9.4 (SAS Institute; http://www.sas.com). Descriptive analysis was done using frequency counts, percentage responses, and mean values. Proportions were compared using χ^2 testing and Fisher's exact tests and compared means using the student's *t*-test.

Ethics approval

The study and questionnaire were approved by the Virginia Commonwealth University Institutional Review Board panel (approval number HM20000686).

Results

One hundred and forty-six surveys were completed. Survey respondents are detailed in Table 1. Figure 1 summarizes self-reported pap smear by age group. Older respondents were more likely to have been screened than respondents aged 18–24 years ($p \leq 0.0001$). Table 2 summarizes the comparative statistics among all survey respondents. Respondents knowledgeable about cervical cancer prevention were more likely to have ever had a pap smear ($p=0.0054$). Table 3 highlights the differences between La Hicaca and the surrounding villages in relation to risk factors, knowledge of and access to cervical cancer screening services. Respondents from surrounding villages had to travel further to visit a pap smear clinic than did respondents from La Hicaca ($p<0.0001$). Respondents from La Hicaca were significantly more likely to receive the results of their pap smears than were respondents from the surrounding villages (86% (19/22) vs 60% (42/70), $p=0.0367$). The respondents of the surrounding villages were more likely to believe that cervical cancer is preventable than were the respondents of La Hicaca (82% (95/116) vs 60% (18/30), $p=0.0106$).

Barriers to screening

Of the respondents with no prior cervical cancer screening, nearly three-quarters (40/54 respondents, 74%) had never heard of a pap smear. The most common barrier was fear of being screened (15 respondents). Other reported barriers were inconvenience of having to travel a great distance (six respondents) and belief that getting screened wouldn't make a difference (five respondents).

Of the five women who answered 'yes' to having received an abnormal pap smear and failed to follow up, one respondent said that it was too far to travel and that she did not have enough money to do so. The others offered no specific reason for failure to follow up.

Discussion

Ninety-three percent of cervical cancer cases are likely to be preventable by screening and vaccination[9]. Although nearly 75% of the respondents were aware of cervical cancer screening, many women from both La Hicaca and the surrounding villages had never been screened. Further, of the women who had undergone cervical cancer screening, the majority were unaware of the cause of cervical cancer. Women who self-reported undergoing pap smears were more likely to know the preventability of cervical cancer. This suggests that knowledge regarding cervical cancer prevention may be sufficient motivation for many women to undergo screening, regardless of a thorough understanding of the screening process.

Table 1: Survey respondent characteristics

Characteristic	*n*	%
Age (years)		
18–24	43	29
25–29	23	16
30–39	22	15
40–49	25	17
50–59	15	10
>60	18	12
Village of residence		
La Hicaca	30	21
Other	116	79
Years of school		
0	48	33
1–5	59	40
6–8	29	20
9–12	8	5
>12	2	1
Marital status		
Married	106	73
Single	37	25
Widowed	3	2
Have you ever had a pap smear?		
No	54	37
Yes	92	63
Have you ever heard of a pap smear?		
No	40	27
Yes	106	73
When was your last pap smear?		
≤1 year ago	49	53
1–2 years ago	28	30
>2 years ago	15	16
Where was your last pap smear?		
La Hicaca	45	49
Olanchito	16	17
Other location	31	34
How long did you travel to get your last pap smear?		
<30 min	20	22
30 min – 1 h	10	11
1–3 h	49	53
4–8 h	11	12
>8 h	2	2
Do you know the results of your last pap?		
Unaware	31	34
Aware	61	66
Do you know the causes of cervical cancer?		
No	128	88
Yes	18	12
Have you ever heard cervical cancer was caused by a virus?		
No	97	66
Yes	49	34
Is cervical cancer preventable?		
No	33	23
Yes	113	77
Do you know anyone who has had cervical cancer or uterine cancer?		

Tabe 2: cont'd

Characteristic	*n*	%
Do you know anyone who has had cervical cancer or uterine cancer?		
No	*125*	86
Yes	*21*	14

Table 2: Comparative statistics among all survey respondents

Question and pap smear status	Response		*p* value
	No	Yes	
Do you know what causes cervical cancer?			
Had pap smear			
No	49	5	0.3874
Yes	79	13	
Is cervical cancer preventable?			
Had pap smear			
No	19	35	0.0054**
Yes	14	78	
Is cervical cancer caused by a virus?			
Had pap smear			
No	40	14	0.1344
Yes	57	35	
Do you know anyone who has had cervical or uterine cancer?			
Had pap smear			
No	49	5	0.1764
Yes	76	16	

*p<0.05, **p<0.01

Table 3: Risk factors, knowledge of and access to cervical cancer screening services, La Hicaca vs surrounding villages

Respondent knowledge/characteristic	Mean (SD) or *n*/*N* (%)		*p* value
	La Hicaca	Surrounding villages	
Mean number of children	2.9 (2.3)	4.3 (3.3)	0.0095**
Mean starting age of sex (years)	17.4 (4.3)	16.5 (2.3)	0.2944
Mean number of sexual partners	1.4 (0.62)	1.4 (0.92)	0.9221
Heard of pap smear	23/30 (77)	83/116 (72)	0.5755
Had a pap smear	22/30 (73)	70/116 (60)	0.1890
Had a pap smear within past 2 years	18/22 (82)	59/70 (84)	0.7499
Screened in La Hicaca/Olanchito	21/22 (96)	40/70 (57)	0.0009***
Travel >1 h	5/22 (23)	57/70 (81)	<0.0001****
Received results	19/22 (86)	42/70 (60)	0.0225*
Know what causes cervical cancer	5/30 (17)	13/116 (11)	0.4175
Heard cervical cancer is caused by a virus	11/30 (37)	38/116 (33)	0.6862
Believe cervical cancer can be prevented	18/30 (60)	95/116 (82)	0.0106*
Know anyone who has had cervical cancer or uterine cancer	5/30 (17)	16/116 (14)	0.6893

*p<0.05, **p<0.01, ***p<0.001, ***p<0.0001
SD, standard deviation

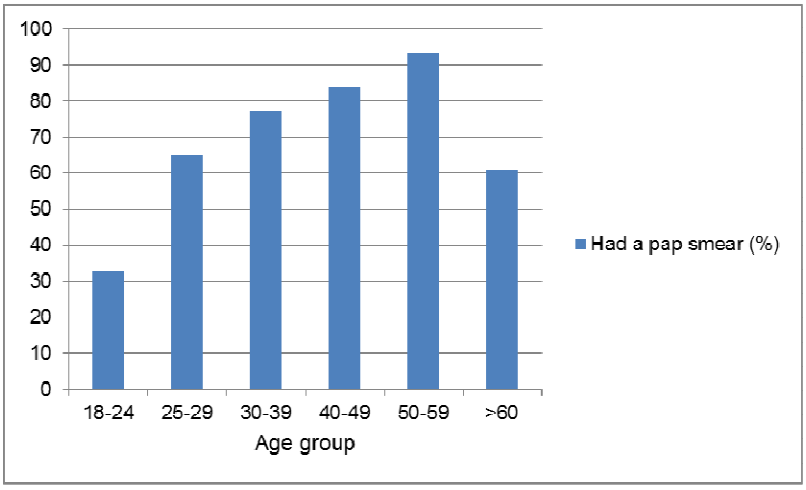

Figure 1: Self-reported pap smear (%) by age group.

More than one-third of the women who had undergone cervical cancer screening in the survey population did not know the results of their pap smears. Traditional methods of follow-up are limited in Yoro given that most residents have no electricity or phone lines. The burden thus lies on the Ministry of Health to relay pap smear results to all women who have completed cervical cancer screening.

Travel time was a considerable barrier to accessing healthcare services in Yoro[6]. The World Health Organization encourages mobile clinics where screen-and-treat methods could be performed as a possible solution to poor access[10]. The GH2DP medical brigades have been successful in setting up satellite clinics in remote areas of Yoro, thus mobile cervical cancer screening may be a viable component to these programs.

Fear was the most common barrier to cervical cancer screening[3,11-13]. Agurto, et al. found that women believed it was better not to know death was coming than to know it was coming and not be able to do anything about it[14]. This sentiment suggests that strategies to educate Honduran women on understanding the diversity of screening results and benefits of pap screening are urgently needed.

This study had several limitations. The screening rate among this sample may have been artificially high due to selection bias, as only women who came to the clinic were surveyed. These women may be more likely to be screened for cervical cancer. Another limitation may be recall bias, because women may not remember exactly when they were last screened, especially if the last screen was many years prior to the survey. While women were invited to complete the questionnaire after clinic, it is possible that they felt coerced into completing the questionnaire. The results may thus not be generalized.

This study had several strengths. All surveys were conducted within an 8-day timeframe. Two trained surveyors conducted the interviews. By reading the surveys to the respondents, potential confusion was reduced and the effect of low literacy rates was minimized.

This study adds to the small body of literature on cervical cancer in Honduras and Central America and may be relevant to other developing regions with similar health disparity and resource pressures. These survey findings raise new questions about the optimal strategy for consistently performing cervical cancer screening in resource poor settings. It is hoped that this research can aid Honduran health officials in policy change, and that these findings will guide regional and

collaborative effort to improve cervical cancer screening services.

Conclusions

Rural Honduran women aware of cervical cancer prevention were more likely to be screened. In addition, women who had heard of cervical cancer screening, but chose not be screened, reported fear, travel time and belief in the futility of pap screening process as barriers to screening. Strategies to educate Honduran women on understanding the benefits of pap screening and minimization of structural barriers to screening access are needed.

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Appendix A: Study questionnaire on risk factors for and knowledge of causes of cervical cancer, and barriers to obtaining cervical cancer screening services

Cytology Exam Knowledge Survey Date: _____

Location/Site:_____ Interviewer: _____

Age: ☐ 18-24 ☐ 25-29 ☐ 30-39 ☐ 40-49 ☐ 50-59 ☐ 60 and over	Home village: _____	Years of school: ☐ 0 ☐ 1-5 ☐ 6-8 ☐ 9-12 ☐ More than 12	Are you…: ☐ Married ☐ Single ☐ Widowed ☐ Don't want to answer	Do you have children?: ☐ Yes How many?____ ☐ No ☐ I don't want to respond	How many sexual partners have you had? _____ What age did you begin having sex? _____

1. Have you ever heard of a cytology exam?	Yes	No	I don't know	I don't want to respond
2. Have you ever had a cytology exam?	Yes	No	I don't know	I don't want to respond

If no, please skip to question 8. If yes, please ask the following questions:

3. When was the last time that you had a cytology exam?	A year ago or less	One – two years ago	More than two years ago		
4. Where did you have your last cytology exam?	La Hicaca	Olanchito	Somewhere else		
5. How long did you have to travel for your last cytology exam?	<30 minutes	30 minutes – 1 hour	2-3 hours	4-8 hours	More than 8 hours
6. Have you ever had a cytology exam that was not normal?	Yes	No	I don't know	I don't want to respond	
7. If your cytology exam was not normal, did you go back to see a doctor or nurse for follow-up?	Yes	No	I don't know	I don't want to respond	

8. If you have never had a cytology exam, or you did not go back for follow-up after an abnormal cytology exam, can you tell me why not? (Circle all that apply)

I feel scared	I feel embarrassed	There is not enough privac at the clinic	I do not know other women who have had a cytology exam	I think cytolog exams hurt	My husband or boyfriend does not want me to	I could not afford to	It is inconvenient (if the answer is yes, proceed below)	I do not need a cytology exam (if the answer is yes, proceed below)
							Because I have to travel too far to get to clinic	Because I am too old
							Because I have to wait to long at the clinic	Because it won't make a difference in my health

9. Do you know what causes cervical cancer?	Yes	No	I don't know	I don't want to respond
10. Have you ever heard that cervical cancer is caused by a virus?	Yes	No	I don't know	I don't want to respond
11. Can cervical cancer be prevented?	Yes	No	I don't know	I don't want to respond
12. Do you know anyone who has had cervical cancer or cancer of the uterus?	Yes	No	I don't know	I don't want to respond