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# The Development Of An Intervention To Increase Cervical Cancer Screening Among Guatemalan Women

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THE DEVELOPMENT OF AN INTERVENTION  
TO INCREASE CERVICAL CANCER SCREENING  
AMONG GUATEMALAN WOMEN

Thesis  
Submitted to the Faculty  
Yale University School of Nursing

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Science in Nursing

Ellen Thompson

May 21, 2021

# AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

This thesis is accepted in partial fulfillment of the requirements for the degree Master of Science in Nursing.

Robin Whitemore

May 1, 2012

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

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Ellen Thompson

May 1, 2012

**Abstract**

THE DEVELOPMENT OF AN INTERVENTION TO INCREASE CERVICAL CANCER  
SCREENING AMONG GUATEMALAN WOMEN

Latin American women experience higher rates of cervical cancer, mainly due to lower rates of participation in cervical cancer screening. This study used community-based participatory research to create and implement a tailored lay health worker (LHW) outreach program to increase cervical cancer screening participation in a Guatemalan community. Surveys with Guatemalan women revealed that they would be more likely to participate in screening if they had more information and one of their main sources of information was their peers. An analysis of the existing resources showed that there was not a method of communicating accurate information through the social networks in the community, thus an LHW program met the needs of the community. This paper outlines the implementation of the LHW program in Guatemala and describes its components which may guide future LHW program development to increase cervical cancer screening in Latin America.

**Table of Contents**

Chapter I: Background .....	1
Purpose .....	4
Chapter II: Methods.....	4
CBPR Overview .....	4
Analysis of the problem and existing outreach .....	5
Description of the community .....	6
Sample .....	7
Data collection.....	7
Data Management and Analysis.....	8
LHW intervention development method.....	8
Chapter III: Results .....	8
Survey of Existing Outreach .....	9
Interview results .....	10
Chapter IV: Intervention Development.....	11
Curriculum development.....	12
Selection of LHWs .....	13
Implementation of the LHW training program .....	14
Role of the LHW in the community.....	14
Chapter V: Discussion.....	15
Chapter VI: Conclusion.....	17
References .....	19
Appendix .....	23

**List of Tables**

Table 1. Interview questions.....	23
Table 2. Demographics and health behaviors of women interviewed.....	25
Table 3. HPV and cervical cancer knowledge and awareness.....	27
Table 4. Cervical cancer screening knowledge and use.....	28
Table 5. Women's sources of information about HPV, cervical cancer, and screening.....	30

## Chapter I: Background

Cervical cancer is the second most common cancer in women worldwide. About 470,000 women are diagnosed with cervical cancer each year, and about 80% of those cases occur in developing countries (Castlellsagué et al., 2007). Latin American countries have some of the highest incidence and mortality from cervical cancer, accounting for 16% of the total number of cases and 13% of cervical cancer-related deaths worldwide, despite having only 9% of the world's population (Arrossi, Sankaranarayanan, & Parkin, 2003).

These statistics reflect the lack of screening among women in low-resource settings. Cervical cancer is one of the most preventable cancers and studies have shown the protective effect of screening. One study in Colombia estimated that women who had never been screened had a ten times greater chance of developing an invasive carcinoma than women who had undergone screening (Aristizabal, Cuello, Correa, Collazos, & Haenzel, 1984). Another study in Mexico showed that women who were screened within the last 5 years decreased their risk of developing invasive cervical cancer by 80% (Jiménez-Pérez & Thomas, 1999). Overall, studies have shown that well-organized screening programs can decrease cervical cancer incidence and mortality by up to 90% (Parkin, 1991).

Despite the fact that screening programs can reduce cervical cancer rates so dramatically, this has not occurred consistently in Latin America. Since a simple and effective screening procedure (Pap smears) became common in the 1960s, cervical cancer rates have decreased throughout the developed world; however, rates of cervical cancer in much of Latin America have remained the same (Robles, White, & Peruga, 1996). Screening methods are becoming increasingly accessible, even in low resource settings, as new methods that do not require the lab technology and follow-up time of Pap smears have been developed. Visual inspection with



## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

acetic acid (VIA) and rapid HPV DNA testing are both reliable screening methods that can be easily employed in rural locations and provide immediate results to women (Belinson et al., 2001; Qiao et al., 2008).

Even with this existing screening technology, women also have to be willing to be screened. Research in Latin America has shown very low rates of participation in cervical cancer screening. Data is unavailable from Guatemala, however rates of cervical cancer screening in Nicaragua showed that only 20% of eligible Nicaraguan women were screened in the last year. The situation is slightly better in neighboring Honduras, where 55% of eligible women reported screening in the last year (IARC, 2004).

Some of the barriers to improving women's health behaviors are logistical. One study of women across Latin America showed that women expressed difficulty with accessibility and availability of quality services, comfort and privacy of the facility, courtesy of the providers, and cost (Agurto, Bishop, Sanchez, Betancourt, & Robles, 2004). Other work in Latin America has supported these findings and demonstrated that there is also a lack of knowledge about cervical cancer and the purpose of screening among Latina women which results in an underutilization of existing services (Lazcano-Ponce et al., 1999; Claeys et al., 2002). Finally, some of the most widespread barriers that have been identified relate to women's health beliefs. Women do not perceive cervical cancer as a preventable disease, and anxiety, negligence, and fear of the results have been identified as barriers to screening (Agurto et al., 2004).

To address these barriers, culturally relevant programs have been developed and evaluated in both the U.S. and Latin America. One specific model of outreach that seeks to increase knowledge and change health behaviors and beliefs is the lay health worker (LHW) model. LHW programs utilize the strong social networks among women to educate the greater

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

community. These programs train respected community members in a health topic and then they both formally and informally share the information with other members of the community.

LHWs are effective because they understand the health needs of the community, communicate in a way that is meaningful to community members, and incorporate aspects of the culture that will promote health (Rhodes, Foley, Zometa, & Bloom, 2007).

Increasing cervical cancer screening has been a common goal of LHW programs, especially among minority populations who have lower rates of screening participation and higher rates of cervical cancer morbidity and mortality. Among Latina populations, most of the literature focuses on work in the U.S. with immigrant Latinas. Many previous reviews of the literature have suggested that although the varied program designs make it difficult to draw conclusions, LHW programs can be effective in increasing cancer screening participation (Wasserman, Bender, & Lee, 2007; Swidler, 2002; Rhodes et al., 2007, Lewin et al., 2009). Two programs in the U.S. (*Cultivando la Salud* and *Por la Vida*) which utilize Latina LHWs in one-on-one and small group educational sessions have shown modest increases in cervical cancer screening rates compared to control groups which did not receive the LHW intervention (39.6% vs 23.6%,  $p < 0.05$ ; and 23% vs 16%,  $p < 0.1$  respectively) (Fernandez et al., 2009; Navarro et al., 1998). One of the few studies of an LHW program in Latin America showed that screening increased from 22% to 27% in communities with LHWs (Givaudan, Leenen, Pick, Angula, & Poortinga, 2008). These studies suggest that LHW programs are a useful tool in increasing cancer screening participation, but could be improved if tailored to the community, culture, and women's needs.

## **Purpose**

LHW programs have the potential to become an important component of cervical cancer screening in Latin America, helping to improve screening rates and decrease the mortality of cervical cancer. However the components of an LHW intervention in Latin America have not been well described in the literature, creating a lack of knowledge and a potential barrier to the creation of new programs. In addition, programs need to be tailored to communities, using and expanding existing resources and addressing unique barriers. Thus, in order to design the best intervention for a Guatemalan community, it is important to understand existing community resources and needs, as well as the perceptions and needs of women in the community. By understanding existing programs, as well as Guatemalan women's health behaviors, knowledge, and beliefs about cervical cancer, new outreach efforts can be tailored accordingly. The overall purpose of this paper is to describe the development of an LHW intervention to increase cervical cancer screening in Guatemalan women with the specific aims to: 1) describe the health behaviors, knowledge, and beliefs of Guatemalan women regarding cervical cancer prevention, 2) discuss the existing local resources and outreach efforts in rural Guatemala for cervical cancer prevention, and 3) outline the components of an LHW intervention for cervical cancer that addresses the needs of Guatemalan women and best utilizes local resources.

## **Chapter II: Methods**

### **CBPR Overview**

Community-based participatory research (CBPR) is a collaborative approach to research which seeks to involve community members, organizational leaders, and researchers at all levels of the research process, with the goal of using the knowledge gained through the study to improve the health and well-being of the community (Israel, Eng, Schulz, & Parker, 2005).

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

CBPR selects a research topic of interest to the community and then integrates program-building strategies with research methods to reduce the gap between knowledge generated by research and the translation of research into interventions (Israel et al., 2003; Viswanathan et al., 2004). CBPR has been suggested as an especially useful method for researching health disparities among vulnerable populations in a manner that is culturally appropriate and best utilizes local expertise to effect change (Israel et al., 2003). CBPR methods were selected for this study as the approach to understanding and improving cervical cancer prevention outreach among Guatemalan women since there were already many local leaders working independently in cervical cancer prevention. Collaborating allowed for a coordinated effort, building upon existing resources to meet the needs of the community.

### **Analysis of the problem and existing outreach**

Before beginning the research, the Guatemalan Ministry of Health approved all study procedures and local administrators at the public health center also provided approval to conduct interviews with women at the health center. Research began by conducting informal interviews with public health workers, ministry of health officials and program coordinators for non-governmental organizations (NGOs) working in cervical cancer in Guatemala to understand the current cervical cancer situation and existing outreach. As discussed above, a key component of CBPR is identification of the problem by the community, so these meetings were open-ended in order for local officials to identify issues they have encountered in cervical cancer prevention, and discuss the outreach efforts they organize, identifying both strengths and weaknesses of their programs. After meeting with leaders, a few days were spent observing each of their various outreach efforts to better understand what was currently being done for cervical cancer prevention and what gaps or barriers might exist. A group of local leaders expressed interest in

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

the project and remained key collaborators throughout the CBPR process, aiding in identifying the overarching goals of the project and the design of the interviews to best meet the needs of the community.

### **Description of the community**

This project took place in the Sacatepéquez department in the central highlands of Guatemala. The Sacatepéquez department includes the town of Antigua, which is home to many of the major NGOs in Guatemala and thus was chosen for the number of potential collaborators based out of Antigua. After discussion with local collaborators and visiting many local communities, the town of San Juan del Obispo was selected as the community of study. One of the NGOs that holds free cervical cancer screening fairs in the towns surrounding Antigua had noted that San Juan del Obispo had one of the lowest rates of participation in the free screening programs. San Juan del Obispo also had a public health worker at the health center very interested in collaborating, making it an ideal study community.

San Juan del Obispo is a town of about 2,200 people, located on the lower slopes of the Agua Volcano, five miles outside of Antigua, the capital of the department. Despite its proximity to Antigua, most of the residents of San Juan del Obispo live a rural lifestyle, working as farmers on the slopes of the volcano. San Juan del Obispo is a predominantly Catholic community, with little to no indigenous population. The town has a very basic public health center, which employs two public health workers and has a doctor who visits at least twice a month. The public health workers are not medical professionals, but work as record keepers of the health of the community. They coordinate public health education programs, distribute vitamins and other donations to the community, and coordinate the work of NGOs and the doctor who come to the community. Overall, it represents a typical community in the area.

### **Sample**

A variety of local leaders and public health workers served as collaborators in the participatory method used for understanding cervical cancer outreach in the area. In total there were five officials from NGOs working in cervical cancer outreach (all women), three ministry of health employees (including two men), three local doctors (all men), one woman working in public health research at a university, and six public health workers (all women).

A convenience sample of women attending the health center in San Juan del Obispo were recruited to participate in interviews. All women attending appointments at the health center were approached by the public health workers at the health center, the study was explained, emphasizing that their participation would not affect their care at the clinic. Women were then asked if they would be willing to participate in an interview; 86% of women approached agreed to participate. Per the local ministry of health, informed verbal consent was obtained from all participants due to limited literacy of the targeted population. Women were at the health center for a variety of reasons such as prenatal care and episodic visits for their children, and were interviewed in a private room while they were waiting for their appointment. Interviews were not conducted on days that cervical cancer screening was offered to avoid biasing the sample.

### **Data collection**

In working with collaborators and examining the literature about previous LHW interventions, it was determined that the goal of the interviews should be to assess women's health behaviors, knowledge, and beliefs to better understand how to design outreach programs. The interview questions were designed while meeting with collaborators, and the interview guide was circulated to all collaborators for feedback. A draft was then piloted with 20 women to ensure the questions were understood before arriving at the final questions used in the study.

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

The final interview questions that were used included 20 survey items and 11 open-ended questions (Table 1).

### **Data Management and Analysis**

Data was collected confidentially, with all data de-identified and no names associated with any of the interview documents. Institutional Review Board approval was obtained from Yale University to analyze the de-identified data from the interviews. All interviews were recorded and detailed notes were taken of responses to each question. Data from the sample and survey items was entered directly into Microsoft Excel and descriptive statistics of these items were compiled. Answers to open-ended questions were gathered by listening to the recorded interviews and taking detailed notes. Interviews were coded and analyzed using content analysis to identify categories and themes for each interview question (Graneheim & Lundman, 2004). Once the categories and themes were created, data was entered into Microsoft Excel and descriptive statistics were also calculated.

### **LHW intervention development method**

One of the principles of CBPR is to share the knowledge gained with the community and then translate it into effective social change to improve the health of the community. Thus, after analyzing and compiling results of the interviews, a meeting was held with all of the project's collaborators and the results were presented. Intervention ideas based on the results were brainstormed, and it was determined that a LHW program would best meet the needs of the community. The ideas from that meeting were then discussed in detail with the collaborating public health worker in San Juan del Obispo to determine the feasibility of an LHW program and the specific components that would be appropriate for the community.

## **Chapter III: Results**

### **Survey of Existing Outreach**

Within Guatemala there are a number of different NGOs with departments focusing on the reproductive health needs of women that provide free cervical cancer screening services. These organizations vary greatly in the scope of their outreach and geographic coverage. Most of them use the public health facilities in communities as a base for screening fairs. To publicize the screening fair, many use local loudspeaker public address systems, as well as fliers within the local health center, and word of mouth among the women. Some send representatives door to door prior to the screening fair. One organization that provides screening fairs on consecutive days uses what they call the “ant” method: each woman who comes in for screening is given a button that says, “ask me about VIA” (the acetic acid screening method). This particular organization has very high attendance rates to screening fairs, demonstrating the power of the strong social networks among women to spread information.

Cervical cancer screening in San Juan del Obispo is provided by a local NGO that focuses on health and education needs of communities surrounding Antigua, and has one staff member dedicated entirely to cervical cancer outreach. Free screening fairs are provided in San Juan del Obispo every 3-4 months. Prior to the screening fair, the cervical cancer outreach worker meets with public health workers in the community to get their support in promoting the screening fair and hangs fliers in the health center. On the day of the screening fair, it is promoted using the town’s public address system. Women unable to attend one of these screening fairs could travel about 45 minutes by bus to the Antigua town center where public health centers are staffed by physicians daily, or await one of the bimonthly visits of the town doctor.



### Interview results

Interviews were conducted with 168 women, the majority of whom were married (88%), Catholic (68%) homemakers (67%), who had not completed education beyond the primary level (81%) (Table 2). The average age of women was 36 and they had an average of 5.2 children. The majority (80%) of women had been to the doctor at least once in the last five years. Just under half of the women used some form of family planning (45%), but 94% reported “never” using condoms, and 90% stated their only lifetime sexual partner had been their husband (Table 2).

Only 13% of women had ever heard of HPV. Of those, 82% knew how it is contracted, but only 18% knew that it could cause cervical cancer (Table 3). Many more women had heard of cervical cancer (85% of those interviewed), although most of those did not know any risk factors (62%). Some women also had misconceptions about risk factors for cervical cancer, with “too much dust” being the most common answer included in the “other” category (63% of women who stated “other” risk factors). Most of the women who had heard of cervical cancer believed it is preventable (88%), and 71% knew how it is prevented (Table 3). Sixty-one percent of women had had a Pap smear within the last three years, although only 28% knew the screening was used for cancer, 76% simply knew it was for “illnesses” and could not specify further (Table 4). About half of the women felt embarrassed during the exam (52%), and 21% reported that it was painful for them. Over half of the women stated that their husband supports them in being screened (54%) (Table 4).

Of the 17% of women who had not been screened, cost was the biggest barrier women identified (76% of women who had not been screened), followed by fear (45%), and time (37%) (Table 4). Misconceptions contributed heavily to the fear women had surrounding exams, with

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

many women stating that they were afraid because they heard a “device is left in you that prevents pregnancy,” showing confusion surrounding the difference between Pap smears and intrauterine device (IUD) placement. Fear of pain was the next most common reason women were afraid of Pap smears; many women stated that they had heard it hurt more than childbirth.

Women were asked about where they had heard of each HPV, cervical cancer, and Pap smears and for each topic the main sources of information were their doctor or an informational talk (*charla*) in the community about reproductive health. Friends and family were the next most common source of information (Table 5). When asked in an open-ended question what women believed should be done to increase awareness about cervical cancer and increase screening utilization, 98% independently stated that *charlas* were the best way to do so (Table 4).

### **Chapter IV: Intervention Development**

The results of the interviews were shared and discussed with local collaborators, and it was agreed that an LHW program had the potential to be beneficial in the community. Over 98% of women independently stated that informational talks should be used as outreach to increase awareness of cervical cancer and screening, demonstrating the power of knowledge to increase screening utilization. However, local collaborators stated that in their experience it is the same women coming to these informational talks and so they may not be the best way to reach women who have never been screened. Further examination of the interviews shows that beyond health care facilities, women were getting much of their information and knowledge from other women in their community. Thus, an LHW program may address this problem by using the existing social networks among women in the community to bring information to women who may not utilize health facilities as frequently.

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

Previously implemented LHW programs have used LHWs to perform diverse functions. Core roles of the LHW that have been described in the literature include: culturally appropriate health education, individual and community capacity-building, social support and counseling, securing services for individuals, cultural navigation, and advocating for themselves and their community (Rosenthal, 1998). LHWs may be paid or volunteer and programs vary in their training. Often LHWs receive informal job-related training rather than more formal education (Lewin et al., 2006). In assessing the resources and needs of the community in which the intervention was to take place, it was determined that using informal training with volunteer LHWs to provide health education and support to women within their existing social networks would reach women most effectively and hopefully increase cervical cancer screening utilization.

### **Curriculum development**

The training curriculum for the LHWs was developed in collaboration with local partners using knowledge gained through the surveys and previous LHW interventions described in the literature. The goal of the training was to provide the LHWs with the knowledge and tools needed to provide accurate, basic knowledge of reproductive health issues and address common misconceptions.

Five modules were created based on the identified areas of need using information gained from the interviews and strategies used by interventions previously described in the literature (Nuño, Martinez, Harris, & García, 2010; Earp et al., 1997). The modules were as follows: Module 1: overview of LHW program and basic reproductive health; Module 2: family planning and contraceptive methods; Module 3: sexually transmitted infections and cervical cancer and screening methods; Module 4: being a strong woman, and Module 5: the role of a LHW in the community. Each module was taught in a collaborative fashion by the researcher and the local

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

public health workers with one 8-hour workshop day dedicated to each module. The public health workers played an important role in helping relate the content to the lived experience of women in the community and provided many examples from their own lives to help illustrate concepts to the women. They were the sole designers and leaders of module 4 about being a strong woman, since this especially dealt with the lived experience of women in the community which would be difficult to relate to as a foreign researcher. The workshops were designed to be interactive and women were encouraged to share personal experiences, talk to each other, and ask questions. Each module included true and false games that included misconceptions from the interviews, and other information local collaborators thought would benefit from being emphasized in this way. Information about each of these topics was written up in a high level of detail in a manual for the LHWs. The content in the manual emphasized areas of concern or lack of knowledge identified by the interviews with women in the community. The manual also included an appendix of further reproductive health resources for the LHWs to use. Low literacy-level handouts were created on each topic for the LHWs to distribute to women in their community.

### **Selection of LHWs**

LHWs were selected by the local public health workers in the community. The public health workers live and work in the community and selected women who were perceived as natural helpers. The natural helpers model was established by Eng, Parker, and Harlan (1997), and defines natural helpers as “individuals who have a reputation in their community for good judgment, sound advice, a caring ear, and being discreet” (p. 415). Some of the selected women held leadership roles within the community, often in churches or running local businesses; others were simply well respected women from the community who were perceived as natural helpers.

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

The program and its time commitment were described to potential LHWs and over 80% of women who were approached agreed to participate despite it being a volunteer position. Seventeen women participated in the LHW training, and most stated that they agreed to participate because they saw this as an important need in the community and wanted to learn more about these topics themselves.

### **Implementation of the LHW training program**

The recruited LHWs attended the training modules over three days in one week, and two days the following week. Each session began with an icebreaker related to the topic of the day, and women opened up and shared personal experiences following these exercises. Pre and post-tests were used to measure knowledge. Throughout the training, in addition to teaching women the material they needed to know to share with other women, strategies for starting conversations about these often-taboo topics were discussed. The LHWs were given ideas of ways to conduct outreach within their communities. Role-playing simulations were also used to allow women to practice these techniques (Givaudan et al., 2008). The training concluded with a graduation ceremony for the LHWs, a very typical and important part of many Guatemalan programs that was designed to help the women feel inspired in their new role (Earp et al., 1997). As the program was implemented, the local public health workers were also trained in how to lead the workshops to create sustainability of the intervention.

### **Role of the LHW in the community**

Following completion of the training, LHWs returned to their usual activities and used a variety of methods to reach out to women in their community. Some of the LHWs held small groups in their homes and churches where they used group discussions to share the information. Others used opportunities in their daily interactions with women in the community to share

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

information. Optional weekly meetings were established at the health center in the community for the LHWs to meet and discuss strategies, ask questions, and support each other. As part of the implementation of the LHW program, three free screening days were planned in the community to provide women with the opportunity to be screened. During each of the LHWs' educational encounters with women, they always provided the women with information regarding the upcoming screening opportunities. Prior to each screening day, many of the LHWs made an effort to contact women again to encourage them to attend, and many accompanied women in their community to the free screening events. Each of the three screening days included in this intervention were attended by more than 80 women; prior to the intervention, no more than 12 women had ever attended a free screening day at the health center.

### **Chapter V: Discussion**

This CBPR study provides an example of how an outreach effort tailored to the needs of the community can provide an effective method for educating women and increasing cancer screening utilization. The survey of existing resources in the community shows many organizations providing free screening and outreach to women in the department of Sacatepéquez; many of the women interviewed had been screened and are being reached by these programs. However, even among women who had been screened, many lacked knowledge and had misconceptions, demonstrating the need for further education accompanying the screening outreach in the community. The free screening was also not consistently reaching women in the community. The survey of Guatemalan women indicated that some misconceptions regarding cervical cancer and screening methods created barriers to being screened. Women who had not been screened stated cost as the most frequent barrier; however, free screening was consistently available in the community. It was clear that women often

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

learned about health issues from their peers, thus by using LHWs and the existing social networks it was possible to share information not only about women's health, but also inform women about the local resources in the community and screening opportunities. The overwhelming response of women who independently stated that informational talks, or *charlas*, should be used to increase awareness of cervical cancer and screening utilization (98% of women surveyed) indicates just how strong the power of information is for women in this community.

This intervention draws its strengths from being tailored to the community. By surveying women in the community and examining existing community resources, it was possible to create a very specific curriculum for the LHWs. Utilization of the CBPR method allowed for continued collaboration and investment by local partners, which increased the sustainability of the intervention after the researcher's departure. Even the local collaborators were surprised at some of the existing misconceptions and just how powerful education was for these women, and the survey allowed the LHWs to address the specific misconceptions that existed in the community. The ease with which interested and dedicated LHWs were recruited was also surprising and demonstrates the potential ease with which the LHW intervention could be expanded to other communities.

One of the limitations of this study was the lack of follow-up and documentation of the work of the LHWs. It would have been helpful to know about their outreach experiences and the outcomes of this intervention. The weekly meetings in which the LHWs shared some of their experiences and discussed strategies were moderately helpful, but did not provide the researcher and public health workers with a complete picture of what the work of the LHW looks like in practice. Although as Earp et al. (1997) point out, the work of LHWs happens informally and spontaneously and so asking LHWs to record their activities could create a barrier to them

performing their role as it is intended. The goal of this intervention was to increase cervical cancer screening utilization and the importance of encouraging women to attend the arranged free screening events was emphasized to the LHWs during the training. Although this was an effective way to meet the goal of increasing screening utilization, it does mean that some of the LHWs' education to women about other topics covered during the LHW training may not have been delivered as intended.

Clearly it is time-intensive to survey women in the community to allow for tailoring of an outreach intervention. This study demonstrates the power that an understanding of the local health behaviors, knowledge, and beliefs can provide in creating a specific intervention to best meet the needs of the local community. This community represents a typical non-indigenous Guatemalan town, so it is likely that the intervention would also be appropriate for implementation in other non-indigenous Guatemalan communities. Future interventions in indigenous areas of Guatemala and elsewhere in Latin America should consider using a survey with even a small number of women to get a sense for how an outreach intervention could best meet the needs of the community. Using information gained with even a small sample size will allow for adaptation of this type of LHW intervention to be most effective for that community.

### **Chapter VI: Conclusion**

The high rates of cervical cancer seen throughout Latin America are unacceptable as it is a preventable disease with ever-improving screening technologies for early detection and prevention. However, until women are aware of the importance of screening and willing to participate, it will continue to be a problem. This study shows that women are eager to learn about women's health and cervical cancer screening and they often do so through their existing social networks. Thus, an LHW intervention tailored to the specific knowledge deficit and



## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

misconceptions of the community provides a promising method for increasing screening utilization and decreasing cervical cancer morbidity and mortality throughout Latin America.

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## Appendix

Table 1

*Interview questions*

Survey Question
Age:
Marriage status: single, married, civil union, divorced, separated, widowed
Number of kids:
What type of family planning do you use? None, tubal ligation, Jadel, injections, pills, IUD, other
What religion do you consider yourself? None, Catholic, Evangelical, Other
What do you do for work? Housewife, domestic help, commercial sector, position requiring higher education, other
What is the highest level of education you achieved? None, some primary, finished primary, some secondary, finished secondary, university
When was the last time you went to the doctor?
How many sexual partners have you had?
How often do you use condoms? Never, rarely, often, always
Have you heard of human papillomavirus? Yes, No If yes: Do you know how it is contracted? Do you know illnesses it can cause? Where did you hear about human papillomavirus?
Have you heard of cervical cancer? Yes, no

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

<p>If yes:</p> <p>What are risk factors for cervical cancer?</p> <p>Do you believe cervical cancer can be prevented?</p> <p>If yes:</p> <p>How is it prevented?</p> <p>Where did you hear about cervical cancer?</p>
<p>Have you known anyone who has had human papillomavirus or cervical cancer? Yes, no.</p>
<p>Have you heard of Pap smears or visual inspection with acetic acid (VIA)? Yes, no.</p> <p>If yes:</p> <p>What illnesses can it detect?</p> <p>Where did you hear about the exam?</p>
<p>Have you ever had a Pap smear or visual inspection with acetic acid (VIA)? Yes, no.</p> <p>If yes:</p> <p>When was your last exam?</p> <p>Were you embarrassed during the exam?</p> <p>Did you feel pain during the exam?</p> <p>How did you learn about the exam?</p> <p>If no:</p> <p>Why not?</p>
<p>What does your husband think of your participation in cervical cancer screening? Supports, does not support, does not know.</p>
<p>If we could do just one thing to reach out to women so they would know more about cervical cancer and get screened for it, what should we do?</p>

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

Table 2

*Demographics and health behaviors of women interviewed (N= 168)*

Demographic/Health Behavior	Percent
Marriage Status	
Married/Civil Union	88%
Divorced	7%
Single	5%
Religion	
Catholic	68%
Evangelical	28%
Unspecified	4%
Education	
Up to primary	81%
Up to secondary	18%
University	2%
Work	
Homemaker	67%
Domestic help	14%
Commercial sector	11%
Other	7%
Last visit to doctor	
Within last year	35%
1-3 years ago	45%



## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

More than 3 years ago	20%
Uses family planning method	45%
Uses condoms	
Never	94%
Rarely	5%
Often	1%
Always	<1%
Number of lifetime sexual partners	
1	90%
2-3	8%
>3	2%

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

Table 3

### *HPV and Cervical Cancer Knowledge and Awareness*

Survey Question	Percent (N)
Total number of women who had heard of HPV (N= 168)	13% (22) <sup>a</sup>
Knows how HPV is contracted (N= 22)	82% (18)
Knows illnesses HPV can cause (N=22)	
Unspecified	55% (12)
Warts	14% (3)
Cancer	18% (4)
Total number of women who had heard of cervical cancer (N=168)	85% (143) <sup>b</sup>
Knows risk factors for cervical cancer (N=143)	
Doesn't know	62% (89)
Failure to get exam	31% (44)
Many sexual partners	15% (22)
Other	19% (33)
Cervical cancer prevention (N =143)	
Believes it is preventable	88% (126)
Knows how it is prevented	71% (101)

<sup>a</sup>These women were then questioned further about HPV

<sup>b</sup>These women were then questioned further about cervical cancer

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

Table 4

*Cervical cancer screening knowledge and use*

Survey Question	Percent (N)
Last screening (N=168)	
Never	17% (29)
Within last year	24% (40)
1-3 years ago	37% (62)
More than 3 years ago	22% (38)
Knows what screening is used for (N=168)	
Illnesses (unspecified)	76% (129)
Cancer	28% (47)
STIs (specified)	7% (12)
Of women who had been screened (N=139)	
During last exam:	
Felt pain	25% (35)
Felt embarrassed	63% (87)
Husband's opinion (N=168)	
Supports	54% (91)
Does not support	32% (54)
Does not know	14% (23)
Reasons why women had never been screened (N = 29)	
Cost	76% (22)

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

Fear	45% (13)
Time	37% (11)
Other	28% (8)
To increase awareness of cervical cancer and screening, we should (N=168):	
Educational talks ( <i>charlas</i> )	98% (164)
Go door to door in the community	28% (47)
Radio spots	24% (40)
Have women talk to each other	14% (24)
Other	16% (27)

## AN INTERVENTION TO INCREASE CERVICAL CANCER SCREENING

Table 5

*Women's sources of information about HPV, cervical cancer, and screening*

Information source	Knowledge of HPV (N=22)	Knowledge of Cervical Cancer (N= 143)	Knowledge of Screening Procedures (N=168)
Doctor	59% (13)	56% (80)	73% (124)
Educational talk (Charla)	64% (14)	48% (69)	59% (99)
Friend/family	32% (7)	31% (44)	45% (75)
Radio/TV	14% (3)	19% (27)	28% (47)
Other	10% (2)	8% (11)	7% (12)

*Note.* Women were allowed to give more than one answer and list every place they had heard about the topic.