

# Influence of Beliefs about Cervical Cancer Etiology on Pap Smear Use among Latina Immigrants

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**Objective.** *To assess Latina immigrants' beliefs about the role of sexual activities in cervical cancer etiology and the impact of the beliefs on Papanicolaou (Pap) smear use. Previous research has found that Latinas, particularly immigrants, believe that cervical cancer is related to 'unwise' sexual activities; however, their beliefs about the nature of the relationship are unclear.*

**Design.** *We conducted semi-structured face-to-face interviews with a non-probability purposive sample of 20 Mexican immigrant women who resided in Orange County, California regarding their beliefs about risk factors for cervical cancer and Pap smear use. We used qualitative content analysis to identify major themes. Three investigators independently reviewed transcripts of the audio-taped interviews to identify themes and came to a consensus about them.*

**Results.** *The women had a mean age of 39 years and had resided in the USA for an average of 16.3 years. We identified several themes. The majority of respondents had limited knowledge about cervical cancer and no knowledge about human papillomavirus (HPV); believed that infections caused by physical trauma, certain sexual activities, and poor hygiene caused cervical cancer; believed that they only needed a Pap smear if they developed symptoms of a pelvic infection; and felt that women who engaged in 'unwise' sexual behaviors, in particular, should receive regular Pap smear exams.*

**Conclusion.** *The results suggest that culturally related beliefs about the etiology of cervical cancer play a role in the decision to obtain Pap smears for Latina immigrants.*

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*The findings may help to explain why researchers have found Latino ethnicity to be an independent predictor of Pap smear use. They also suggest that programs designed to improve cervical cancer screening, particularly among Latina immigrants, should stress the nature of HPV transmission, its role in the etiology of cervical cancer, and the importance of Pap smear screening in the absence of symptoms.*

*Keywords: Knowledge and Attitudes; Cervical Cancer; Cancer Prevention; Culture; Latinas*

## **Introduction**

Cervical cancer ranks second only to breast cancer as the most common malignancy among women in the world (Schiffman *et al.* 2001). In the USA, the disease ranks ninth in incidence and accounts for 6% of all cancers among women (Greenlee *et al.* 2001). For Latinas (Hispanic women), however, the age adjusted incidence and mortality rates are higher than for non-Latino white women (Trapido *et al.* 1995). Moreover, Latinas tend to be younger at the time of diagnosis and to present at more advanced stages (Mandelblatt *et al.* 1991; Singh *et al.* 2004). These statistics may be accounted for, in part, by Latinas' relatively low rates of Papanicolaou (Pap) smear screening (Estrada *et al.* 1990; Calle *et al.* 1993; Pérez-Stable *et al.* 1994; Schur *et al.* 1995; Tortolero-Luna *et al.* 1995; Hubbell *et al.* 1996; O'Malley *et al.* 1997; Buller *et al.* 1998; Howe *et al.* 1998; Powell-Griner *et al.* 1999; Roetzheim *et al.* 1999; Zambrana *et al.* 1999; Wu *et al.* 2001).

Research on the factors that influence the use of Pap smears by Latinas usually falls under two major categories: economic and cultural. Economic factors, in particular having health insurance, are the most important predictors of cervical cancer screening in this population. Indeed, providing health insurance to the uninsured would probably be the most effective method of increasing use of preventive services. However, having a regular source of care, higher family incomes, and higher education levels also play an important role (Estrada *et al.* 1990; Calle *et al.* 1993; Pérez-Stable *et al.* 1994; Schur *et al.* 1995; Tortolero-Luna *et al.* 1995; Hubbell *et al.* 1996; O'Malley *et al.* 1997; Buller *et al.* 1998; Howe *et al.* 1998; Powell-Griner *et al.* 1999; Roetzheim *et al.* 1999; Zambrana *et al.* 1999; Wu *et al.* 2001).

Economic issues do not account for all aspects of life that influence use of preventive services. Indeed, Latino ethnicity has been identified as an independent negative predictor of preventive service use after controlling for health insurance, family income, and other potentially confounding variables (Pérez-Stable *et al.* 1994; Hubbell *et al.* 1996). Therefore, many investigators have suggested the possible role of culture in predicting preventive service use. Some of the issues of interest have included language, beliefs about the disease, fatalism, and knowledge about screening guidelines. For example Solis *et al.* (1990) found that speaking English was more important than ethnic identification in predicting use of preventive services among Latinos. Suarez *et al.* (1997) noted that Mexican American women with more fearful

and fatalistic attitudes about cancer were less likely than others to have had a recent Pap smear. Likewise, Chavez *et al.* (1997) reported that, after controlling for potentially confounding variables, fatalistic beliefs were negative predictors of Pap smear use among Latinas but not non-Latino white women. Finally, Ramirez *et al.* (2000) found that knowledge about screening guidelines differed among Hispanic populations (Central American, Mexican American, Cuban, and Puerto Rican) but overall, knowledge did not predict Pap smear screening behavior.

Our own research has raised a number of questions regarding the interplay between economics, knowledge about cervical cancer, and the use of Pap exams. In the early 1990s, we conducted in-depth face-to-face interviews with women (Salvadoran immigrants, Mexican immigrants, US born Latinas, and non-Latino whites) regarding their knowledge about cervical cancer and the use of Pap smears (Chavez *et al.* 1995). We found that the non-Latino white women believed that a combination of hereditary and lifestyle behaviors caused cervical cancer. Latinas, on the other hand, focused largely on sexual behaviors as the cause of the disease. Indeed, Martinez *et al.* (1997) argued that Latinas' knowledge about cervical cancer risk factors were imbued with moral injunctions: women who engaged in 'unnatural' and 'immoral' behaviors such as having many lovers, sex during menstruation, and abortions were more likely than others to get cervical cancer. To test the generalizability of these findings, we conducted a telephone survey of 803 randomly selected Latinas (Hubbell *et al.* 1996). We found that Latinas who believed that sexual behaviors increased the risk for cervical cancer were less likely than others to have had a Pap smear within the previous three years. These findings supported the notion that morality plays a role in Latinas' decisions to obtain regular Pap smear screening.

In contrast, Gregg (2000) found that women in Brazil responded to a public health campaign that clearly defined cervical cancer as a sexually transmitted disease (STD). While the campaign was successful in increasing Pap smear screening, it had unintended consequences. Women who were no longer sexually active understood the campaign to mean that they no longer needed Pap smears. Likewise, women who were sexually active thought that they would be examined for other STDs such as gonorrhea and syphilis. This belief led them to obtain exams as often as twice a year. On the other hand, women who did not engage in activities that increased the risk for STDs were less inclined to obtain regular Pap smear screening. These findings were important because they showed that many Latinas, at least in the villages of Brazil, were not so stigmatized by the notion that cervical cancer was an STD that they did not access Pap smear screening.

It is important to understand how beliefs about the sexual transmission of cervical cancer influence the use of Pap smears in order to develop effective culturally sensitive programs to increase cervical cancer screening rates among Latinas. Therefore, we conducted a qualitative study among Latina immigrants to explore these issues in more detail. Our major objective was to determine whether viewing

cervical cancer as sexually transmitted had an impact on cervical cancer screening and, if so, how?

## Methods

We conducted the study with women who had migrated from Mexico, but now resided in California, concerning their knowledge and behaviors regarding cervical cancer and Pap exams. Because we were particularly interested in understanding why women did not obtain regular Pap smears, only women who had not had an exam within the past three years were eligible for the study. In addition, the women had to be Mexican immigrants, sexually active, and over the age of 30 years. We chose to study Mexican immigrants because previous research indicated that these women were more likely to make the link between sexual behaviors and cervical cancer and less likely to have Pap smear screening than other Latinas (Chavez *et al.* 1995; Hubbell *et al.* 1996). We set the age restriction at 30 years, giving the women a number of years from the onset of sexual activity in which they could have obtained a Pap exam. Current Pap smear screening recommendations suggest that testing should begin when a woman first engages in sexual intercourse and should be performed at least every three years thereafter (US Preventive Services Task Force 2003).

Using a non-probability purposive sample design, we contacted 20 Mexican immigrant women through Latino community-based organizations (CBOs) in Santa Ana, California. Approximately two-thirds of the residents in Santa Ana are Latino (US Census Bureau 2001). The CBOs with which we worked offered services including legal assistance, English language courses, and health information. We recruited Latinas for this study during health education sessions at the CBOs. Trained graduate student interviewers who were fluent in Spanish and English conducted face-to-face interviews with the women in their homes. They gave the women the choice of being interviewed in Spanish or English. All of the women chose to be interviewed in Spanish.

We used questions from a survey instrument that we had employed in a previous study of knowledge and attitudes about cancer among Latinas (Chavez *et al.* 1995) to which we added inquiries specific to this investigation. Following a grounded theory approach (Glaser & Strauss 1967), we began with open-ended questions designed to gather information about the women's knowledge about Pap exams, cancer of the cervix (*cuello de la matriz*), and causes of cervical cancer. We asked why the women had received their first, and often only, Pap smear, what they knew about cervical cancer, and what they thought caused it. Grounded theory emphasizes the simultaneous involvement of data collection and analysis (Charmaz 2001). Thus, in an effort to elaborate further on key themes that occurred in our previous research (Chavez *et al.* 1995; Hubbell *et al.* 1996; Martinez *et al.* 1997), we asked about the causes of cervical cancer. We first asked the open-ended question 'What things do you think might cause cervical cancer?' After that, we asked them to agree or disagree with

statements such as ‘Some people have told us that God gives people illnesses such as cervical cancer’ and ‘Some people have told us that they would not get checked for cervical cancer because people might think they were “bad” women.’ We also asked if they thought that specific sexual behaviors caused cervical cancer, how that behavior led to cervical cancer, and if engaging in that behavior would influence their decision to obtain a Pap exam. For example, we asked the women if ‘having many lovers/sexual partners would increase a woman’s risk of getting cervical cancer?’ If she responded, ‘yes’, then we asked her ‘How does this lead to cervical cancer?’ Finally, we asked if having that knowledge ‘made her want to get a Pap smear test for cervical cancer?’ These topics were directly related to the emergent themes of our earlier studies (Chavez *et al.* 1995; Hubbell *et al.* 1996; Martinez *et al.* 1997).

The last set of questions concerned demographic characteristics and acculturation levels. We used a five-item language assimilation scale to assess acculturation (Marin *et al.* 1987). In brief, the scale asked what languages the respondents spoke: in general; as a child; at home; and with friends and in what language they usually thought. Responses included: 1, only Spanish; 2, more Spanish than English; 3, both equally; 4, more English than Spanish; and 5, only English. The interviews lasted an average of two hours each.

We obtained permission from the women to tape record the interviews. We used qualitative content analysis to evaluate the transcripts of the tapes for recurring themes and explanations about cervical cancer and screening. The interviews were analyzed to assess the link between sexual behavior, cervical cancer, and the women’s explanations for why they would obtain or not obtain a Pap exam. Three experienced investigators, two medical anthropologists (J.M.M. and L.R.C.) and a health services researcher (F.A.H.), independently reviewed the transcripts to identify themes and then came to a consensus about them. We resolved disagreements by reviewing the transcripts together and tracking down the source of disputes. We then discussed those sections until we arrived at consensus about coding categories and their application. We were able to reach consensus in all cases. The study received approval from the Human Subjects Review Committee of the University of California, Irvine.

## Results

### *Demographic Characteristics*

Table 1 shows the demographic characteristics of the 20 women and the timing of their most recent Pap exam. The mean age was 39 years. Respondents had lived in the USA for 16.3 years on average. All women scored three (spoke Spanish and English equally) on the language assimilation scale. Only one woman had completed a high school education, and most of the women had annual household incomes of less than \$15,000. Half of the women had health insurance. All of the women had heard of Pap

**Table 1** Demographics and Pap Smear Use of Mexican Immigrant Women ( $N = 20$ )

Age	Number
<40	15
40–49	3
>49	2
<i>Education (years)</i>	
0–6	12
7–12	7
>12	1
<i>Language</i>	
Only Spanish	0
More Spanish than English	0
Equal Spanish and English	20
More English than Spanish	0
Only English	0
<i>Annual household income<sup>a</sup></i>	
<\$5,000	1
\$5,000–\$9,999	2
\$10,000–\$14,999	8
\$15,000–\$19,999	3
\$20,000–\$24,999	1
<i>Years in the USA</i>	
5–10	8
11–20	9
>20	3
<i>Employment status</i>	
Currently employed	9
Not currently employed	11
<i>Health insurance status</i>	
Any form of health insurance	10
No health insurance	10
<i>Pap smear status</i>	
Never had a Pap	2
Pap more than three years ago	18

<sup>a</sup>Three respondents declined to answer.

exams, and 18 of them had received at least one exam at some time in their lives (Table 1).

### *Themes*

The qualitative content analysis revealed four major themes: the women had limited knowledge about cervical cancer; they believed that sexual behaviors caused cervical cancer by causing infections; they felt that they did not need a Pap smear in the absence of symptoms, and; they believed that women who engaged in ‘unwise’ sexual

behaviors needed Pap smears and those who didn't needed them less (Table 2). A discussion of the themes appears below.

● *Knowledge about cervical cancer*

Most of the women ( $n = 16$ ) stated that they did not know much about cancer. When talking about cervical cancer, they often referred to their general knowledge about cancer. The concept that the human papillomavirus (HPV) was a precursor to cervical cancer was not part of that knowledge. Indeed, none of the women had heard of HPV. Rather, the women drew upon their personal experiences and stories they had heard throughout their lives to make sense of cervical cancer.

The women who said that they had knowledge of cervical cancer typically switched the topic either to a generalized form of cancer or to cancer of the ovaries or uterus. For example, this 31-year-old woman used an example of a friend who had cysts on her ovaries to talk about cervical cancer: *'I have heard that when a person gets cysts there, they say that there, from the cysts, cancer develops.'* Likewise, this 35-year-old woman drew on general knowledge of cancer and related it to cervical cancer. *'What I know is not much. What I have heard, the cancer is a malignant tumor that needs to be cut off if it is there. Because it is there in the cervix or in the breasts or parts.'*

Even women who had family members with cervical cancer stated that they had relatively little knowledge about the disease. When asked if she knew anyone who had been diagnosed with cervical cancer, this woman responded, *'Well, yes, my sister had cancer and they removed her womb.'* (Interviewer) Was it in the cervix? *'I don't know where it was from. They detected it in her womb, then in her ovaries.'* This woman's lack of specificity about the origination of her sister's cancer suggested a pattern of generalizing cervical cancer to any area in a woman's reproductive system.

● *Sexual behaviors lead to cervical cancer through infections*

Table 3 reports the number of women who agreed that a specified sexual behavior caused or increased the risk of cervical cancer. The large majority of women thought

**Table 2** Themes Regarding Beliefs about Cervical Cancer and Pap Smear Use

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<i>Knowledge about cervical cancer</i>
Knowledge about cervical cancer is limited
No knowledge about the human papillomavirus
<i>Sexual behaviors cause cervical cancer through infections</i>
Infections if not treated cause cervical cancer
Infections are caused by physical trauma, contact with an infected partner, or poor hygiene
<i>Importance of symptoms and Pap smear use</i>
Infections cause symptoms
Symptoms must be present for Pap smears to become a priority
<i>Sexual behaviors and Pap smear use</i>
Women who have 'unwise' behaviors should get Pap smears
Women who do not engage in these activities do not need Pap smears

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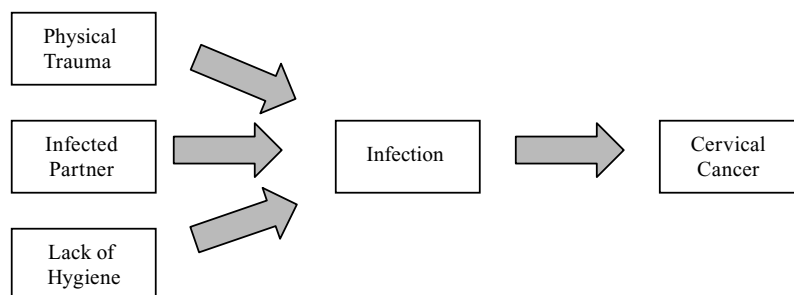
**Table 3** Sexual Behaviors, Cervical Cancer, and Pap Smear Use ( $N=20$ )

Behavior	Believed behavior could cause cervical cancer No. of women	Believed that behavior would affect decision to obtain Pap smear No. of women
Having an abortion	18	8
Having poor feminine hygiene	17	11
Having sex with a partner who is infected	16	9
Having multiple sexual partners	15	7
Having sex during menstruation	14	11
Having rough sex	10	6
Having sexual relations at a young age	7	3

that having an abortion ( $n=18$ ), lacking good feminine hygiene ( $n=17$ ), having sexual intercourse with a partner who is infected ( $n=16$ ), having multiple sexual partners ( $n=15$ ), and having sexual intercourse during menstruation ( $n=14$ ) could cause cervical cancer.

From the women's responses, it was clear that the concept of infection was paramount in their thinking about cervical cancer. Figure 1 displays the relationship between behaviors, infection, and cervical cancer as related to us by the women. This model of infections was endorsed by 17 of the 20 women. The mechanisms through which the women thought they might obtain an infection can be divided into three overlapping categories: physical trauma, contact with infected males, and poor feminine hygiene (Figure 1).

Physical trauma was the first mechanism through which sexual activities could lead to infection and then to cervical cancer. By physical trauma, the women meant trauma to the womb (*matriz*) that could be caused by abortions, rough sex, and/or having sexual relations at a young age. The women considered the womb to be a sensitive area and damage to it put the woman at risk for infections. For example, when considering whether or not abortions increased the risk for cervical cancer, a 62-year-old woman stated, '*... yes, not only cancer, sometimes they even die, you can imagine how they crush the womb to extract the child and they can infect her and that's where the cancer comes from*'. According to the respondent, the damage done by

**Figure 1** Infection as the Link between Behavior and Cancer.

forcibly removing the fetus can do irreparable damage to the womb, which in turn, allows an infection to enter and cause cancer.

Similarly, a 38-year-old woman stated that abortions were dangerous, but also that the process may not 'clean' everything out:

*It may have a risk because I think it is worse to abort them by one's own will than have them. Because you go and abort a baby and you never know what kind of cleaning they did on your intimate parts. A piece of the baby may remain behind, or, one never knows.*

Her response illustrated two points about abortion. First, abortion interfered with the normal functioning of the body, 'it's worse to abort them by one's own will'. Second, the act of aborting and not cleaning everything could lead to an infection.

The women also related that rough sex and sex at a young age had the potential of damaging a woman's delicate areas. Sex at a young age was considered damaging because the young female might be too small and delicate. Similar to abortion, rough sex could also damage a woman, as this 27-year-old woman stated, '... yes I think it does. Because if the partner does it rough it wounds inside and one can catch some disease there.' Damaging the womb through sexual intercourse or abortions and not properly cleaning everything out of the woman's body after the abortion can allow infections to begin. If these infections are left unattended, they may ultimately result in cancer.

The second mechanism for contracting an infection that could lead to cervical cancer was having sexual encounters with a husband or boyfriend who was infected or having multiple sexual partners. One woman said:

*I think it [having sex with a husband or boyfriend who is infected] does, because it is penetrating, I think it does. An infection causes another infection, and if there is no care, attention, it becomes increasingly large and may become cancer.*

The act of putting a foreign substance into the woman's womb, the infection is 'penetrating', and may ultimately cause cancer. The women also stated that having many lovers increased the risk of having sex with an infected person, as this woman states, '... yes, if one is, I am with one and another and another and I never go to the doctor, well, it is dangerous. I may catch an infection and lead to cancer.' In this case, it was not that infections were deposited into the woman in a single act, but rather that having many lovers increased the risk of exposure to an infection that may lead to cancer. In describing what they meant by 'infection' in the partners, most of the women defined them as diseases, similar to AIDS, that could be sexually transmitted. However, some of the women also believed that the infections could be acquired because the male did not engage in good hygiene between sexual encounters.

Lack of good feminine hygiene was the third mechanism for obtaining an infection that could lead to cervical cancer. Some women believed that having sexual intercourse during menstruation did not allow the menstrual process to occur

‘naturally’, setting up the potential for infection. The following response is an example of how one woman was instructed by her mother in proper hygiene:

*My mother would say, ‘While the woman remains a virgin there is no corruption or anything, but it’s another thing with a man. When the man empties his semen, it’s something else.’ I have heard that a married woman to prevent infection, and I have always done it, as soon as you have relations you need to go to the restroom fast. That’s what I do, always. I never stay even if I am tired. I never remain laying down. I remember that my mom would always advise women to never stay laying down.*

The quotation implies that while a woman is a virgin, her body is not corrupt, she is pure, and hygiene is not an issue. However, proper hygiene must be strictly practiced once she is married. She must make sure that any foreign substances, in this case the man’s semen, are promptly cleaned out or it may cause an infection.

Having sex during menstruation also evoked the same imagery of the diseases and infections attached to the semen as something unnatural in the woman’s body, as this woman states when asked if this behavior causes cervical cancer, ‘Yes, I think it does. Well, the womb is cleaning itself, discarding everything that needs to be thrown out. The man comes and deposits diseases and infections, and it’s just a mess.’ For this woman, the natural process of the body during menstruation was to clean itself out. The lack of hygiene, not allowing the body to cleanse itself, was a behavior that could lead to an infection.

● *The importance of symptoms and Pap smear use*

The concept that untreated infections could lead to cervical cancer was also related to the importance the women placed on pelvic symptoms in seeking Pap smear screening. Most of the women said that they would seek a Pap smear if they were ill if, for example, they had a rash, pain in their reproductive organs, or abnormal bleeding. Indeed, none of the women received their first Pap smear as the result of seeking cervical cancer screening. They received the exam as part of a visit for prenatal care (10) or for birth control procedures (2) or were simply told by their physicians to get it (6). If there was nothing wrong, that is, there were no symptoms, then why go to a doctor? As this woman stated when asked what causes cervical cancer:

*I wouldn’t know how to answer that question because I have not talked like that, about that with other people like now that you are here. I have not had checkups like that. Those who live in small towns get checkups only when they are pregnant or when something else hurts, most of the time they don’t.*

In addition, the women believed that doctors did not check private areas of the body unless there were symptoms, as in the case of this woman: ‘I was nervous because in Mexico I had never heard of that being done to someone. When the woman was comfortable, the doctors would not do those things [the exams].’ The conjunction of lack of symptoms and physicians not emphasizing preventive Pap exams reinforced

the notion that women only needed to seek care if something was wrong—if you have symptoms of infection.

The search for symptoms of infection played an important role in the women's thinking about cervical cancer. One woman stated her frustration about what caused her friend's cancer of the cervix:

*I don't know what causes it and it's what I would like to know because one can help, like someone that has daughters, friends. Like me, I ask 'What is this? How does it feel?' or 'Why do you get it? Why this? Why that?' No, they don't answer, they don't answer right. And one wants to know everything so one can identify the symptoms that would be good for one to know.*

The focus was on the woman's ability to locate the feeling, the cause, to identify the symptoms.

The focus on symptoms of infection was also linked with the issue of procrastination:

*... it's like every visit to the doctor, its just that if one feels something. If one is ill and they feel the pain, they say 'Well, I have to go right now because I am sick.' But if not, they go when they can, and the day has never come. Like me, that day has not come.*

In summary, the importance of infection and resulting symptoms cannot be underestimated in women's decisions to obtain Pap smears. Obtaining preventive care was not a meaningful or pragmatic response to the feeling of wellness.

#### ● *Sexual behaviors and Pap smear use*

Sixteen of the 20 participants knew that Pap smears were tests for cancer. Among the women who agreed that specific sexual behaviors increased their risk for cervical cancer, most also agreed that that knowledge affected their decision to obtain a Pap smear (Table 3). However, most of them qualified their responses. They stated that women who engaged in those behaviors would know that their actions would increase their risk of infection. Therefore, they should get a Pap smear to make sure that everything was fine. For example, this woman in responding to the question of sex during menstruation states: 'Yes, because if someone did not take care of themselves, if they had relations during menstruation and they are scared they will get cancer, they have to go to the doctor.' In her response, the woman knew that the behavior was risky and could cause an infection that would lead to cancer if unchecked. Her focus, however, was on being 'scared' of getting cancer.

Similarly, many of the women said that if people engaged in specified sexual behaviors, they should have the exam 'to make sure everything is fine'. Although there appeared to be a link between the sex-based behaviors, infection, and cervical cancer, we do not want to argue that the perceived link prevented women from seeking care. Indeed, 19 of the women interviewed disagreed with the statement that 'they would not get checked for cervical cancer because they did not want other people to think they were "bad" women [*muñeres malas*]'. Likewise, 17 of the women disagreed with

the statement that ‘God gives people illnesses like cervical cancer because they have lived a bad life.’

## Conclusion

Based on previous research (Calle *et al.* 1993; Chavez *et al.* 1995; Hubbell *et al.* 1996; Martinez *et al.* 1997), we anticipated that knowledge about the sexual nature of cervical cancer etiology would have a negative impact on Pap smear use among Mexican immigrant women. Because of moral implications, we expected that knowledge about the relationship between ‘unwise’ sexual behaviors, such as having multiple sexual partners, and cervical cancer would make them reluctant to seek cervical cancer screening. We found just the opposite. Most of the women said that, if they engaged in unwise behaviors, they would be more likely to obtain the test. Likewise, if they did not engage in these behaviors, they would be less likely to get a Pap smear.

The women also related that they would be unlikely to request a Pap smear if they did not have symptoms of a gynecological problem, in particular, an infection. This concept was reinforced by the finding that none of the women had requested their first, and often only, Pap smear for cervical cancer screening. Most had received it as part of a prenatal examination or in conjunction with another medical procedure. This finding is consistent with previous research about the importance of symptoms in health seeking behaviors among Latinas (Borrayo & Jenkins 2001).

There is strong evidence that HPV infection plays an important role in the etiology of cervical cancer (Bosch *et al.* 1995; Liaw *et al.* 1995). Activities such as having multiple sexual partners and beginning sexual intercourse at an early age increase the risk of contracting HPV and thereby increase the risk of cervical cancer. The women in this study clearly believed that infections caused cervical cancer. However, none of them had heard of HPV. They perceived that engaging in specific sexual activities introduced an infection either through physical trauma to the womb, contact with an infected partner, or lack of hygiene. If the infection was not treated, then cervical cancer was a possibility. Thus, their concepts about the etiology of cervical cancer were consistent with the biomedical model except that they did not include HPV as the connection between infection and the disease.

Other studies have documented that Latina immigrants in different geographical locations believe that sexual activities are related to cervical cancer (Scarinci *et al.* 2003; Goldman & Risica 2004). For instance, Dominicans and Puerto Ricans in Rhode Island perceived sexual behaviors, including active sexual life at an early age and multiple sexual partners, as strong risk factors for cervical cancer (Goldman & Risica 2004). On the other hand, studies in other ethnic minorities indicate that, while these groups believe that sexual behaviors are potential causes of cervical cancer, they do not appear to place as much importance on them as Latina immigrants do. For example, among East Asian immigrants, cervical cancer is not generally known to be associated with the number of sexual partners or having sexual

relations at an early age (Yi 1994; Schulmeister & Lifsey 1999; Lee 2000; Ralston *et al.* 2003). Among Pacific Islanders, a higher proportion believed that cervical cancer was linked to multiple sexual partners; yet, only a few considered it as linked to initiating sexual relations at an early age. Moreover, knowledge and attitudes about cervical cancer etiology among Pacific Islanders did not predict Pap smear screening (Mishra *et al.* 2001).

While our study focused specifically on beliefs about sexual behaviors and Pap smear use, previous research has documented other culturally related factors that may influence cervical cancer screening among Latinas (Solis *et al.* 1990; Chavez *et al.* 1997; Suarez *et al.* 1997; Ramirez *et al.* 2000). A recent literature review summarized negative and positive factors related to cervical cancer screening in this population (Austin *et al.* 2002). The common barriers included fear of cancer, fatalistic views about cancer, linguistic barriers, and culturally based embarrassment. Positive cues to undergo screening included physician recommendation, community outreach programs particularly those using lay health workers, Spanish print educational materials, and use of culturally specific media.

The study had important limitations. First of all, it was a small qualitative study using a non-probability purposive sample design. As such the results may not be generalizable to the larger Latina population. However, obtaining the kind of information that we desired is difficult using more quantitative approaches with closed ended questions. Thus, the methodology was appropriate for this exploratory study. Secondly, we recruited the participants from CBOs during health promotion events. It is possible that these women were more interested in their health and perhaps more knowledgeable about cervical cancer than other Latina immigrants. Thirdly, we focused on beliefs about sexual behaviors and their relationship to cervical cancer and Pap smear use because of findings from previous studies (Chavez *et al.* 1995; Hubbell *et al.* 1996; Martinez *et al.* 1997). Therefore, we cannot comment on the relative importance of sexual behaviors compared with other cervical cancer risk factors in the minds of the respondents or the magnitude of the impact on Pap smear use. However, our previous research found that Mexican immigrants ranked various sexual behaviors as eight of the 10 most important risk factors for cervical cancer (Chavez *et al.* 1995).

What are the implications of this study for cervical cancer prevention programs? Because the evidence is strong that cervical cancer is sexually transmitted and that this fact does not appear to be a deterrent to Pap smear use among Latinas, we believe that cervical cancer prevention programs should stress the nature of HPV transmission and the role of this virus in the etiology of cervical cancer. Currently, we are conducting a study to educate Latinas about HPV (using *promotoras*—lay health workers) and to assess the feasibility and acceptability of a home test kit for HPV to improve cervical cancer screening rates. However, how far health promotion programs should go with the emphasis on HPV is not yet clear. A next logical step would seem to be the recommendation to use condoms or other barrier methods of birth control for primary prevention of HPV infection. Unfortunately, available data

are too inconsistent to conclude that condoms prevent this infection (Manhart & Koutsky 2002), and expert panels such as the US Preventive Services Task Force have not recommended this method for cervical cancer prevention (US Preventive Services Task Force 2003). Clearly, there is a need for much more research on how best to improve health promotion programs for cervical cancer prevention among Latinas.

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