

REVIEW

## Factors influencing cancer screening practices of underserved women

Kelly Ackerson, MSN, WHNP (Pre-Doc Fellow) & Kimberlee Gretebeck, PhD, RN (Assistant Professor)

University of Michigan School of Nursing, Ann Arbor, Michigan

### Keywords

Cervical cancer screening; cervical smears; African American; Hispanic; adherence; motivation; influencing factors; determinants; predictors.

### Correspondence

Kelly Ackerson, MSN, WHNP, 10726 W. KL Avenue, Kalamazoo, MI 49009.  
Tel: 269 372-4449; Fax: 269 372-4569;  
E-mail: kellya@umich.edu

Received: October 2006;  
accepted: February 2007

doi:10.1111/j.1745-7599.2007.00268.x

### Abstract

**Purpose:** This integrated review was conducted to evaluate the factors that inhibit or promote decisions by African American and Hispanic women to obtain cervical cancer screening.

**Data sources:** Research articles were identified using MEDLINE, PubMed, and Cumulative Index to Nursing and Allied Health literature, published between 1999 and 2005.

**Conclusions:** Cervical cancer screening practices of African American and Hispanic women were influenced by extrinsic motivators including lack of insurance, no usual source of health care, acculturation, and socioeconomic factors. Intrinsic motivators were related to beliefs and perceptions of vulnerability, such as ignoring cervical cancer screening when no symptoms were present; believing that not knowing if one had cervical cancer was better; and thinking that only women who engage in sexual risk-taking behaviors need to obtain Papanicolaou (Pap) smear testing.

**Implications for practice:** Nurse practitioners (NPs) have an opportunity to impact the incidence and mortality of cervical cancer by improving screening practices of minority women. They can emphasize the importance of obtaining Pap smears regularly, teach patients the risks for and signs and symptoms of cervical cancer, and provide recommendations for obtaining screening at low cost or no cost to the patient. To improve cancer screening practices, NPs need to address minority women's beliefs about cervical cancer and provide information and services in a culturally sensitive manner at an appropriate level of learning.

### Introduction

In the United States, the incidence and mortality of cervical cancer continues to be a health issue that is largely preventable. The human papillomavirus (HPV) contributes to cervical cell changes and places sexually active women at risk for cervical cancer. If caught in its early stages, cervical cancer is treatable and curable. The Papanicolaou test (Pap smear) has been used for cervical cancer screening over the past 50 years. Although cervical cancer mortality has decreased 75% for all women (U.S. Department of Health and Human Services [USDHHS] 2000), the benefits of early detection have not been shared by all population

segments in the United States, with disparities most evident among those who are less advantaged. Between 2000 and 2003, the age-adjusted incidence rate for cervical cancer diagnosed for all ethnic groups was 8.8 per 100,000 women, with higher rates noted in African American (11.5 per 100,000) and Hispanic (14.2 per 100,000) women (National Cancer Institute [NCI], 2005b). Cervical cancer mortality rates for African American (5.0 per 100,000) and Hispanic women (3.4 per 100,000) are higher than for non-Hispanic white women (2.4 per 100,000) (Centers for Disease Control and Prevention [CDC], 2004). In order to decrease the cervical cancer incidence and mortality rates for African American and

Hispanic women, it is important to identify those factors that prevent or promote cervical cancer screening in these populations.

### Significance of problem

Underutilization of cervical cancer screening has been observed in many ethnic groups and underserved populations. For minority women and those of low socioeconomic status, the prevalence of Pap testing remains relatively low at 64.1% (American Cancer Society [ACS], 2005a). The combination of low income and low education places women at increased risk for nonadherence to cancer screening practices and cervical cancer (USDHHS, 2000). Specifically, women of ethnic minorities, older women, uninsured, and women living at the poverty level do not obtain any screening or have not been screened at recommended intervals.

### Cervical screening recommendations

According to the ACS (Saslow et al., 2006), screening for cervical cancer should begin 3 years after initiating intercourse or by age 21, whichever comes first, to detect changes that occur early in the disease process. Thereafter, women should obtain annual Pap smear testing using a conventional test or every 2 years with a liquid-based test. At age 30, Pap smear testing should be conducted at least every 3 years, if three previous consecutive Pap smear tests were normal. This continues until the age of 70, when Pap smear testing can be discontinued if the previous three consecutive Pap smear tests were normal and no abnormal results were reported within the previous 10 years (Saslow et al., 2006). This allows for earlier detection, initiation of treatment, and prevents the advancement of dysplastic cells to cancer (Saslow et al., 2006).

According to the CDC (2004), of the women diagnosed with cervical carcinoma, more than 60% had never received screening or had not received screening in the previous 5 years of diagnosis. For women diagnosed with a preinvasive lesion who received treatment, the survival rate was approximately 100% (CDC).

### Dynamics of cervical cancer

Sexually active women are vulnerable to abnormal cervical cell changes as a result of skin contact from a partner infected with HPV during sexual contact. The HPV can contribute to precancerous cell changes on the cervix and can advance to cervical cancer if not detected and treated during early cell stages. Risk factors for HPV that contribute to cervical cancer include multiple sexual partners, immune deficiencies, cigarette smoking, and low socioeconomic status (ACS, 2005b).

Cervical dysplasia (precancerous cell change) and cervical cancer in the early stages have no warning signs or symptoms. In advanced stages, when the cancerous cells invade nearby tissue, women may experience abnormal vaginal bleeding with intercourse, after a pelvic exam, after douching, or postmenopause (ACS, 2005b).

### Socioeconomic status

The U.S. Census Bureau (2004) reported that African American and Hispanic individuals had higher levels of poverty (25% and 22%, respectively), compared to non-Hispanic white individuals (8.6%). The rate of minority populations without insurance continues to rise. In 2004, approximately 20% (7.2 million) of African American and 33% (13.7 million) of Hispanic individuals were uninsured. In addition, 28.4% of African American and Hispanic women who were single and head of their households were living at the poverty level compared to 13.5% of single men who were head of their households and 5.5% of married couple households (National Poverty Center, 2003). The financial costs of cervical cancer, including insurance coverage costs by private, Medicaid, or Medicare sources as well as personal out-of-pocket expenses are estimated at \$1.7 billion per year in the United States (NCI, 2005a). The financial burden for the uninsured frequently affects the ability to access needed healthcare services.

Cervical cancer is a health issue that is preventable through regular screening at the recommended levels. Unfortunately, African American and Hispanic women of low socioeconomic status, low educational attainment, and those lacking healthcare coverage obtain Pap smear testing infrequently and continue to suffer greater incidence and mortality from cervical cancer. While it is clear that socioeconomic factors impact African American and Hispanic women in obtaining cervical cancer screening, it is unclear what other factors influence cervical cancer screening practices in these populations. The purpose of this integrated literature review was to identify the determinants for cervical cancer screening practices of African American and Hispanic women. Thus, the research question that guided this literature review was, "What are the influencing factors that motivate African American and Hispanic women in obtaining Pap smears?"

### Methods

The literature review included a search of the MEDLINE, PubMed, and Cumulative Index to Nursing and Allied Health Literature databases. Research articles included in this integrated literature review had to meet the following inclusion criteria: qualitative or quantitative

research design, conducted in the United States, at least 10% of study participants African American and/or Hispanic women, aged 21 and older, cervical cancer screening was the primary health-promoting behavior, and published between 1999 and 2005. Key search terms used included "cervical cancer screening," "cervical smears," "African American," "Hispanic," "adherence," "motivation," "influencing factors," "determinants," and "predictors." Only those studies reporting cervical cancer screening including African American and/or Hispanic women were selected for review.

Thirty-five articles that met the inclusion criteria were reviewed. After initial review, 18 were excluded because the study sample did not include at least 10% African American and/or Hispanic women or the primary focus of the article was not cervical cancer screening. Of the 35 research articles reviewed, 17 met all the inclusion criteria and were evaluated for common themes related to factors that influence cervical cancer screening behavior of African American and Hispanic women (Table 1).

## Results

The research designs of the 17 studies in this integrated literature review were varied and included: cross-sectional survey (Bazargan, Bazargan, Garooq, & Baker, 2004; Behbakht, Lynch, Teal, Degeest, & Massad, 2004; Coronado, Thompson, Koepsell, Schwartz, & McLerran, 2004; Hoyo et al., 2005; Jennings-Dozier, 1999; Nelson, Geiger, & Mangione, 2002; Otero-Sabogal, Stewart, Sabogal, Brown, & Perez-Stable, 2003), face-to-face focus groups (Scarinci, Beech, Kovach, & Bailey, 2003), face-to-face interviews (McMullin, De Alba, Chavez, & Hubbell, 2005), experimental (Hiatt et al., 2001; Sung, Alema-Mensah, & Blumenthal, 2002), and qualitative descriptive study (Boyer, Williams, Callister, & Marshall, 2001). In addition, five articles included secondary data analyses of the National Health Interview Survey (Gorin & Heck, 2004; Lockwood-Rayermann, 2004; Selvin & Brett, 2003), Demographic Assessment Survey (Jennings-Dozier & Lawrence, 2000), and Medical Expenditure Panel Survey (Sambamoorthi & McAlpine, 2003).

Sampling techniques varied although researchers used convenience sampling most frequently (88%, 15 studies) followed by random (6%, 1 study) and purposive sampling (6%, 1 study). The data for the studies were gathered from many sources including medical facilities (47%, eight studies) and home (6%, one study), U.S. mail (6%, one study), telephone (6%, one study), and secondary databases (35%, six studies). The studies were conducted in a wide geographical area including Texas, Illinois, Washington State, North Carolina, Pennsylvania, Tennessee, Georgia, and California.

The sample sizes and characteristics varied among the studies. The study participants ranged from 18 to 88 years old, with a mean age of 40 and included non-Hispanic white, African American, Hispanic, and Asian women. Excluding the six studies that used secondary data analyses, four studies (24%) included only Hispanic women with sample sizes ranging from 20 to 977 participants; two studies (12%) included only African American women with 144–163 participants; one study (6%) included only African American and Hispanic women with 230 participants; three studies (18%) included African American, Hispanic, and other women with samples sizes ranging from 146 to 767 participants; and one study (6%) included Hispanic and non-Hispanic white women with 767 participants. Hispanic and Latina were used interchangeably in many studies. One study distinguished different groups of Hispanic women as Puerto Rican, Mexican, Cuban, Dominican, Central or South American, or other Hispanic (Gorin & Heck, 2004).

## Theoretical or conceptual models

Theoretical or conceptual models were described in 47% ( $n = 8$ ) of the studies and included the Behavioral Model for Vulnerable Populations (Bazargan et al., 2004), Trans-theoretical Model (Hiatt et al., 2001), Theory of Planned Behavior (Jennings-Dozier, 1999), Institute of Medicine Framework for Access (Lockwood-Rayermann, 2004), Grounded Theory (McMullin et al., 2005); and PEN-3 (a conceptual model for health education programs) (Scarinci et al., 2003). Two studies used a combination of models, the Behavioral Model of Health Care Utilization and PRECEDE models (Coronado et al., 2004) and Behavioral Model of Health Care Utilization and the Health Belief Model (Gorin & Heck, 2004). Several factors within the theoretical frameworks appear to influence cervical cancer screening and include lack of insurance (Bazargan et al.; Coronado et al.; Gorin & Heck; Hiatt et al., 2001), cost of healthcare services (Scarinci et al.), employment status (Lockwood-Rayermann), level of acculturation (Coronado et al.; Gorin & Heck), and ability to speak English (Bazargan et al.; Gorin & Heck; Hiatt et al., 2001).

Several themes generated from the 17 studies included in this integrated literature review related to the influencing factors that contribute to cervical cancer screening in African American and Hispanic women. The main themes were classified into extrinsic and intrinsic motivating influences and are described in detail in the following sections.

## Extrinsic influences

Several extrinsic determinants were found to influence cervical cancer screening practices of African American

**Table 1** Summary of research studies

Author and year	Population and study design	Sample size	Outcome measures	Results
Bazargan et al. (2004)	Random sample of low-socioeconomic status Hispanic and African American women aged 18–88. Cross-sectional survey; face-to-face interviews	Total = 230; n = 123 Hispanic; n = 107 African American	Factors that influence Pap smear testing: <ul style="list-style-type: none"> <li>● Predisposing</li> <li>● Enabling</li> <li>● Need for care</li> </ul>	The total explained variance of this model was 24.1%. Significant were: <ul style="list-style-type: none"> <li>● Predisposing characteristics: nurses, and other health professionals)</li> <li>● Enabling characteristics:                             <ul style="list-style-type: none"> <li>● Healthcare coverage</li> <li>● Continuity of care</li> </ul> </li> <li>● Need-for-care characteristics</li> <li>● Physician-advised Pap smear (<math>p &lt; 0.05</math>)</li> </ul>
Behbakht et al. (2004)	African American, Hispanic Caucasian, and "other" women. Cross-sectional survey with two groups diagnosed with invasive cervical cancer: <ul style="list-style-type: none"> <li>● Never had Pap smear</li> <li>● Had Pap</li> </ul>	Total = 146; n = 39 Hispanic; n = 73 African American; n = 29 Caucasian; n = 5 other	<ul style="list-style-type: none"> <li>● Potential barriers to screening</li> <li>● Differences in occurrence of risk factors and cultural characteristics between groups</li> </ul>	In the never-Pap-smear group, women were more significantly: <ul style="list-style-type: none"> <li>● Hispanic</li> <li>● Recent immigrants</li> <li>● Less educated</li> <li>● Uninsured</li> <li>● Lack family support</li> <li>● Lack knowledge about risk for cervical cancer</li> <li>● Display fatalistic attitude</li> <li>● Rather not know had cancer</li> </ul> Barriers: <ul style="list-style-type: none"> <li>● Personal and cultural factors:                             <ul style="list-style-type: none"> <li>● Lack of a health promotion/disease prevention perspective, lack of knowledge about pap smears and available services</li> <li>● Cultural values related to time orientation and communication patterns</li> </ul> </li> <li>● Provider and systems barriers:                             <ul style="list-style-type: none"> <li>● Lack of access to female Spanish-speaking healthcare providers</li> <li>● Lack of trust in physicians</li> <li>● Failure of healthcare providers to recommend Pap smears</li> </ul> </li> <li>● Financial barriers</li> <li>● Inadequate access to care</li> </ul> Motivators: <ul style="list-style-type: none"> <li>● Personal experience with others having cervical cancer</li> <li>● Maintaining health</li> <li>● Reduction in financial barriers</li> <li>● Access to culturally appropriate health care</li> </ul>
Boyer et al. (2001)	Hispanic women aged 18–65. Broad range of socioeconomic and educational backgrounds. Qualitative descriptive using interviews	Total = 20	Factors affecting cervical cancer screening behavior	<ul style="list-style-type: none"> <li>● Personal and cultural factors:                             <ul style="list-style-type: none"> <li>● Lack of a health promotion/disease prevention perspective, lack of knowledge about pap smears and available services</li> <li>● Cultural values related to time orientation and communication patterns</li> </ul> </li> <li>● Provider and systems barriers:                             <ul style="list-style-type: none"> <li>● Lack of access to female Spanish-speaking healthcare providers</li> <li>● Lack of trust in physicians</li> <li>● Failure of healthcare providers to recommend Pap smears</li> </ul> </li> <li>● Financial barriers</li> <li>● Inadequate access to care</li> </ul> Motivators: <ul style="list-style-type: none"> <li>● Personal experience with others having cervical cancer</li> <li>● Maintaining health</li> <li>● Reduction in financial barriers</li> <li>● Access to culturally appropriate health care</li> </ul>

Table 1 Continued

Author and year	Population and study design	Sample size	Outcome measures	Results
Coronado et al. (2004)	Non-Hispanic white and Hispanic women, aged 18–64. Cross-sectional survey, face-to-face interviews. Random sampling of households	Total = 767; <i>n</i> = 152 high-accultured Hispanic women; <i>n</i> = 230 low-accultured Hispanic women; <i>n</i> = 385 non-Hispanic white women	Association between health barriers and noncompliance in cervical cancer screening	Health barriers associated with noncompliance in Hispanic women with a lower level of acculturation compared to highly acculturated Hispanic and non-Hispanic white women were: <ul style="list-style-type: none"> <li>● Fear of finding cancer</li> <li>● Fear of finding diseases other than cancer</li> <li>● Embarrassment about receiving a physical exam</li> </ul> Influencing factors in adherence in women who obtained a Pap smear compared to those who did not: <ul style="list-style-type: none"> <li>● Younger age (<i>p</i> &lt; 0.05)</li> <li>● Marriage (<i>p</i> &lt; 0.001)</li> <li>● Greater acculturation (<i>p</i> &lt; 0.01)</li> <li>● Visits to a primary care provider (<i>p</i> &lt; 0.05)</li> <li>● Health insurance: private (<i>p</i> &lt; 0.001); public (<i>p</i> &lt; 0.01)</li> </ul>
Gorin and Heck (2004)	Latino women and men, aged 18–70+. Secondary data analysis using data from the 2000 National Health Interview Survey	Total = 5377 women and men; <i>n</i> = 2007 women reporting on Pap smear within the last year	Influences in adherence to cancer screening (the other aims of this study for all groups were to examine current adherence to cancer screening)	<ul style="list-style-type: none"> <li>● Use of other cancer screening tests (<i>p</i> &lt; 0.001)</li> </ul> Baseline differences in obtaining a Pap smear between intervention and control groups indicate: <ul style="list-style-type: none"> <li>● % ever having had a Pap test—women &gt;40 years: intervention 95% and controls 83% (<i>p</i> &lt; 0.01)</li> <li>● Pap smear in past 3 years: intervention 84% and controls 69% (<i>p</i> &lt; 0.01)</li> </ul> Baseline differences between race/ethnic groups in Pap smears: <ul style="list-style-type: none"> <li>● Pap smears in the past 3 years among non-English-speaking Latinas (72% (<i>p</i> &lt; 0.001) and non-English-speaking Chinese (24%) (<i>p</i> &lt; 0.001)</li> </ul> Predictors of low levels of screening behavior: <ul style="list-style-type: none"> <li>● No insurance (OR = 0.5)</li> <li>● Infrequent use of medical services (OR = 0.4)</li> </ul> Proportion of nonadherence that could be attributed to perceived pain was 79% Nonadherence: <ul style="list-style-type: none"> <li>● Perception that Pap test was painful (OR = 4.78)</li> <li>● Difficulty in paying office visit coupled with perceived pain (OR = 5.8)</li> </ul> Significant predictors of intention: <ul style="list-style-type: none"> <li>● Attitude (<i>p</i> &lt; 0.001)</li> <li>● Perceived behavioral control (<i>p</i> &lt; 0.001).</li> </ul>
Hiatt et al. (2001)	African American, Latina, Chinese, and white women aged 40–75. Public health clinics and low-income neighborhoods. Experimental factorial design	Total = 1599 Experimental: <i>n</i> = 54 Latina; <i>n</i> = 414 African American; <i>n</i> = 70 Chinese; <i>n</i> = 209 white; <i>n</i> = 54 other. Control: <i>n</i> = 176 Latina; <i>n</i> = 61 African American; <i>n</i> = 209 Chinese; <i>n</i> = 291 white; <i>n</i> = 61 other	Identifying characteristics that differentiate subgroups at risk	
Hoyo et al. (2005)	African American women aged 45–65. Cross-sectional Survey	Total = 144	Association between adherence to cervical cancer screening and pain perception	
Jennings-Dozier (1999)	African American and Latina women aged 18–83. Correlation design, using data from the Demographic Assessment Survey	Total = 204; <i>n</i> = 96 Latinas; <i>n</i> = 108 African American	Intentions for Pap smear use	

Table 1 Continued

Author and year	Population and study design	Sample size	Outcome measures	Results
Jennings-Dozier and Lawrence (2000)	African American and Hispanic women; age was dichotomized as less than 40 years and more than 40 years old. Secondary data analysis using Demographic Assessment Survey	Total = 204	Adherence to Pap smear testing related to sociodemographic variables	Pap smear testing adherence: <ul style="list-style-type: none"> <li>African American women high school graduates with insurance coverage were more likely to obtain Pap testing than black women with less than a high school education (OR = 11.2)</li> <li>Probability of a Hispanic woman being adherent significantly associated with age (OR = 0.62) and place of birth (OR = 0.62)</li> </ul> Influencing factors: <ul style="list-style-type: none"> <li>Insurance</li> <li>Level of education</li> <li>Place for care</li> <li>Age</li> <li>Employment</li> <li>Place of residence</li> </ul> All statistically significant at $p < 0.000$
Lockwood-Rayermann (2004)	Women aged 18 years and older. Secondary data analysis for National Health Interview Survey and Cancer Topical Module National, based on households of civilian noninstitutionalized population	Total = 2246; $n = 16\%$ black; $n = 77\%$ white; $n = 23\%$ non-white; $n = 7\%$ other	Factors that influence participation in cervical cancer screening in the past 12 months	
McMullin et al. (2005)	Latina Women, mean age 39. Nonprobability purposive sample, semistructured face-to-face interviews	$n = 20$	Beliefs about sexual activities in cervical cancer etiology and the impact of the beliefs on Pap smear use	Beliefs: <ul style="list-style-type: none"> <li>Infections caused by physical trauma</li> <li>Certain sexual activities</li> <li>Poor hygiene</li> <li>Pap smears are needed only when symptoms present</li> <li>Women who engage in "unwise" sexual behavior need Pap smear testing</li> </ul> All statistically significant at $p < 0.000$
Nelson et al. (2002)	Latina, white, African American, Asian women aged 18 years and older. Mailed survey with telephone follow-up	Total = 733; $n = 51\%$ Latina; $n = 13\%$ African American; $n = 24\%$ white; $n = 12\%$ Asian	Association between race and ethnicity, health beliefs and cancer knowledge in delays of care for abnormal Pap smears	Beliefs: <ul style="list-style-type: none"> <li>Individuals of Asian descent, Spanish-speaking Latinas, endorsed more fatalistic beliefs and more misconceptions about cancer compared to African American and white women (<math>p &lt; 0.05</math>)</li> </ul> Delay of care: <ul style="list-style-type: none"> <li>Women who delayed care had a higher mean score on the fatalism scale than those who did not delay care, and were not independently associated with race and ethnicity (<math>p &lt; 0.05</math>)</li> </ul> Pap smear maintenance: <ul style="list-style-type: none"> <li>Health insurance</li> <li>Regular place of care</li> <li>Ever being married</li> <li>Attending church</li> <li>Hormone replacement therapy</li> </ul> Nonmaintenance: <ul style="list-style-type: none"> <li>Poverty</li> <li>Old age &gt;65</li> <li>High degree of cancer-related fatalistic attitudes</li> </ul>
Otero-Sabogal et al. (2003)	Latina Women aged 40–74. Survey conducting telephone interviews	Total = 977	Predictors of maintenance with initial and recent breast and cervical cancer screening	

Table 1 Continued

Author and year	Population and study design	Sample size	Outcome measures	Results
Sambamoorthi and McAlpine (2003)	African American, white, Latina, and other women aged 21–64. Secondary data; Medical Expenditure Panel Survey	Total = 6218; n = 1231 Latina; n = 851 African American; n = 3898 white; n = 238 other	Receipt of preventive care or screening examinations within the past 12 months, within past 2 years, within past 5 years, more than 5 years, or never	<ul style="list-style-type: none"> <li>Negative attitudes toward physicians All statistically significant at <math>p &lt; 0.001</math></li> <li>Receipt of preventive services (Pap smear) among all women significantly associated with:                             <ul style="list-style-type: none"> <li>College education (AOR = 2.58)</li> <li>High income (AOR = 1.40)</li> <li>Usual source of care (AOR = 1.83)</li> <li>Health insurance (private HMO, AOR = 2.60; private FFS, AOR = 2.16; public HMO, AOR = 1.85; and public FFS, AOR = 2.58)</li> </ul> </li> </ul>
Scarinci et al. (2003)	Latina women, low income, immigrants, aged 18–42. Survey and face-to-face focus group	n = 126 Latina; comparison group n = 111 (non-Latina); n = 37 focus group	Influences of sociocultural factors associated with cervical cancer screening	<ul style="list-style-type: none"> <li>Sociocultural influences in nonadherence among Latina immigrants as compared to non-Latina:                             <ul style="list-style-type: none"> <li>Level of education</li> <li>Lack of health insurance</li> <li>Married or living with someone</li> <li>Less knowledge regarding cervical cancer (<math>p &lt; 0.01</math>)</li> </ul> </li> </ul> <p>Focus groups:                      Cost, lack of transportation, and lack of interpreters were important barriers to obtaining a Pap smear</p>
Selvin and Brett (2003)	Women aged 40–64. Secondary data from National Health Interview Survey	Total = 5509; n = 734 Hispanic; n = 780 black; n = 3995 white	Predictive influences of socioeconomic status and access to care associated with using cancer screening services	<ul style="list-style-type: none"> <li>Predictive influences for all three groups of women:                             <ul style="list-style-type: none"> <li>Usual source of care (<math>p &lt; 0.5</math>)</li> </ul> </li> <li>Non-Hispanic white:                             <ul style="list-style-type: none"> <li>Health insurance (<math>p &lt; 0.5</math>)</li> </ul> </li> <li>Predictors of nonadherence                             <ul style="list-style-type: none"> <li>Smoking (non-Hispanic white and Hispanic) (<math>p &lt; 0.05</math>)</li> </ul> </li> </ul> <p>Influencing factor in obtaining follow-up:                      Women with private health insurance were more likely to be screened following the intervention than those covered by Medicaid or Medicare and with no insurance. (<math>p &lt; 0.001</math>)</p>
Sung et al. (2002)	African American women aged 18 and older. Experimental study design	Intervention n = 163; control n = 158	Influencing factors in failure to receive timely cancer screening after intervention	<ul style="list-style-type: none"> <li>Women with private health insurance were more likely to be screened following the intervention than those covered by Medicaid or Medicare and with no insurance. (<math>p &lt; 0.001</math>)</li> </ul>

Note. OR, odds ratio; AOR, adjusted odds ratio; FFS, fee for service; HMO, health maintenance organization.

and Hispanic women and included lack of insurance, usual source of health care, acculturation, and socioeconomic status.

### **Insurance coverage**

A lack of any type of health insurance coverage (private or public) was reported in 41% ( $n = 7$ ) of the studies and was a predictor among African American and Hispanic women for not obtaining cervical cancer screening (Bazargan et al., 2004; Behbakht et al., 2004; Gorin & Heck, 2004; Hiatt et al., 2001; Otero-Sabogal et al., 2003; Sambamoorthi & McAlpine, 2003; Sung et al., 2002). In one study (Selvin & Brett, 2003), non-Hispanic white women with Medicaid insurance were more likely to obtain cervical screening, while African American and Hispanic women with Medicaid were not. Additionally, women with private insurance were more likely to be screened than those who were covered by public insurance or uninsured (Hiatt et al., 2001; Sung et al.). Lack of health insurance is a widespread reported problem for low-income minority women and often contributes to lack of cancer screening.

### **Usual source of health care**

Lack of an established usual source of health care influenced Pap smear testing in 41% ( $n = 7$ ) of the studies (Bazargan et al., 2004; Behbakht et al., 2004; Boyer et al., 2001; Hiatt et al., 2001; Otero-Sabogal et al., 2003; Sambamoorthi & McAlpine, 2003; Selvin & Brett, 2003). For example, women without a usual source of health care were not aware of the available services within their community to obtain low-cost Pap smears and were less likely to obtain regular cervical cancer screening (Boyer et al.). Having a usual source of health care was strongly related to having health insurance coverage for Pap smear testing; women with health insurance were more likely to seek cervical cancer screening (Bazargan et al.; Gorin & Heck, 2004; Hiatt et al., 2001). On the other hand, Hoyo et al. (2005) found that having a usual source of health care did not influence whether African American women obtained Pap smear testing.

### **Acculturation**

Acculturation was found to influence Pap smear testing practices (Bazargan et al., 2004; Behbakht et al., 2004; Boyer et al., 2001; Coronado et al., 2004; Gorin & Heck, 2004; Hiatt et al., 2001; Otero-Sabogal et al., 2003). Acculturation was measured via three methods: birthplace, U.S. versus non-U.S. (Bazargan et al.); whether the questionnaire was filled out in English or Spanish (Behbakht et al.); and primary language used for speaking, thinking, and reading (Coronado et al.; Gorin & Heck; Otero-Sabogal et al.). Inability to speak English, living in the United States for less than 5 years, preferring to speak only Spanish and

filling out the questionnaire in their native language were associated with lack of cervical cancer screening in the Hispanic population (Bazargan et al.; Behbakht et al.; Boyer et al.; Gorin & Heck; Hiatt et al., 2001). Level of acculturation can affect health screening practices as a result of language barriers that contribute to misunderstanding or inadequate communication and are associated with lack of preventive health care.

### **Socioeconomic factors**

Most studies found that lower level of education was associated with decreased likelihood of cervical cancer screening. African American and Hispanic women with a high school education or less were not as likely to obtain Pap smear testing when compared to women with more than a high school education (Boyer et al., 2001; Hoyo et al., 2005; Jennings-Dozier & Lawrence, 2000; Otero-Sabogal et al., 2003; Sung et al., 2002). One study (Lockwood-Rayermann, 2004) found the opposite. That is, women who had not attended college had a higher participation in Pap smear testing than college educated women, which was an unexpected result.

Other factors that influenced African American and Hispanic women in obtaining regular cervical cancer screening were income, age, and cost. Several studies reported that the lower the income, the less likely a woman would obtain a Pap smear test (Boyer et al., 2001; Jennings-Dozier & Lawrence, 2000; Lockwood-Rayermann, 2004; Sambamoorthi & McAlpine, 2003; Sung et al., 2002). As women increase in age, the rate of Pap smear testing decreases. In a study by Bazargan et al. (2004), older women between the ages of 45 and 65 years living in public housing reported not having a Pap smear test in the past 3 years, while younger women (less than 45 years old) living in the same environment had received a Pap smear within the past 3 years. Other studies found that minority women aged 50–70 years were less likely to obtain a Pap smear compared to women 21–49 years of age (Gorin & Heck, 2004) and those 65 years and older often did not obtain the recommended Pap smear testing (Otero-Sabogal et al., 2003).

Out-of-pocket expenses were also found to influence Pap smear testing; thus, women having to pay out-of-pocket costs were less likely to obtain Pap smears. This included women with insurance plus a co-pay charge (Coronado et al., 2004) or the expense of an office visit or laboratory testing (Boyer et al., 2001; Hoyo et al., 2005).

### **Intrinsic motivators**

In addition to the extrinsic factors that influence African American and Hispanic women from obtaining cervical cancer screening, several intrinsic factors were identified.



In 41% ( $n = 7$ ) of the studies, salient beliefs about cervical cancer and perception of vulnerability to cervical cancer were found as important factors that influence Pap smear testing practices of African American and Hispanic women.

### **Salient beliefs**

In some ethnic groups, beliefs about cervical cancer influenced Pap smear testing practices. For Hispanic women, cancer screening practices were impacted negatively because of their beliefs that a diagnosis of cancer is the result of bad luck (Behbakht et al., 2004; Otero-Sabogal et al., 2003), not knowing if cancer is present is better than knowing (Behbakht et al.), and not thinking of a health preventive action unless symptoms are present (Behbakht et al.; Boyer et al., 2000; McMullin et al., 2005; Otero-Sabogal et al.). In addition, Nelson et al. (2002) found that African American and Hispanic women believe that “the treatment for cancer is worse than the disease,” “there is very little a person can do to reduce their risk of cancer,” that “cutting into cancer makes it spread,” and “a bump or a bruise can cause cancer.” Hispanic women with lower income and less education held more misconceptions about cancer than the African American women who participated in the study (Nelson et al.). In a study conducted by McMullin et al., Hispanic women believed those that participate in risk-taking sexual activities should obtain Pap smears, while women who do not engage in these activities do not need Pap smears. Unfortunately, few studies have been published that describe the beliefs and perceptions of African American women regarding cervical cancer (Nelson et al.).

### **Vulnerability**

Minority women were less likely to obtain Pap smear testing if they did not perceive cervical cancer as a possibility or if they believed there was little they could do to prevent or reduce the risk of cancer (Behbakht et al., 2004; Nelson et al., 2002). Physical trauma related to abortion and rough sex, an infected partner, and lack of feminine hygiene were found to be factors that Hispanic women believed made an individual vulnerable to cervical cancer (McMullin et al., 2005). If Hispanic women did not feel that they were personally vulnerable to cervical cancer, they were less likely to obtain testing (Gorin & Heck, 2005; McMullin et al.; Scarinci et al., 2003). No studies were found that specifically evaluated perceptions of vulnerability of African American women.

### **Lack of recommendation by healthcare provider**

African American and Hispanic women who did not receive a recommendation to obtain cervical screening were less likely to obtain Pap smear testing. Bazargan

et al. (2004) found that 29.1% of Hispanic and African American women in this study reported not receiving a recommendation for a Pap smear test. Testing was significantly lower among these women (24.3%) than among those who had received a recommendation (75.7%). None of the studies reported an actual chart audit to evaluate documented provider recommendations.

### **Limitations of studies**

Limitations of the studies reported in this integrated literature review included the study population, methods used for data collection, and lack of nurse practitioners as healthcare providers. The targeting of low-income women living in public housing in specific geographical areas in the United States decreases the generalizability of the findings to women of the same ethnic group living in other unrepresented areas of the country (Bazargan et al., 2004; Behbakht et al., 2004). Reliance on self-report data can lead to under- or overreporting of Pap smear screening and personal barriers that may be a result of answering the questions in a socially acceptable manner (Coronado et al., 2004; Gorin & Heck, 2004; Sambamoorthi & McAlpine, 2003; Scarinci et al., 2003; Selvin & Brett, 2003). In addition, data collected via the telephone may not represent minority women who do not have telephones, possibly missing women who are at the greatest risk (Otero-Sabogal et al., 2003). Unfortunately, none of the articles described nurse practitioners as a usual source of care. As a result, the impact of the nurse practitioner in cancer screening practices could not be evaluated. Each of these limitations can affect generalizability of the study results.

### **Recommendations for future research**

Recommendations for future nursing research would be to evaluate the relationship between age and the cultural influences of African American and Hispanic women as they relate to the adherence of cervical cancer screening. In this integrative review, age was found to be an influencing factor for Pap smear testing; as age increased, Pap smear testing decreased. The median age of a cervical cancer diagnosis for all women is 48 years (NCI, 2005b), although in the Hispanic population, cancer is twice as likely to be diagnosed by the age of 44 when compared to non-Hispanic white women (NCI, 2005c). In addition, cervical cancer survival rates for African American women are lower than for other ethnic groups, at least in part because African American women are diagnosed at a later stage because of infrequent Pap smear testing (ACS, 2005b). Nursing intervention studies aimed at modifying both intrinsic and extrinsic factors that tend to decrease

screening in younger minority women are needed. Appropriate nursing interventions such as addressing inaccurate beliefs and perceptions of vulnerability that affect motivation to obtain Pap smear testing have the potential to increase regular cervical screening and long-term adherence, thereby reducing the incidence and mortality rates among African American and Hispanic women.

### Implications for nurse practitioners

The findings from this integrated literature review indicate that the cervical screening practices of African American and Hispanic women are likely influenced by many intrinsic and extrinsic factors. Many of the extrinsic factors are impossible (such as age) or difficult to change (level of education). However, nurse practitioners (NPs) can influence decision making of African American and Hispanic women through intrinsic factors such as beliefs and perceptions of vulnerability to cervical cancer and by strongly recommending screenings. Interventions tailored to these intrinsic factors can contribute to positive behavioral actions in health promotion such as regular cervical cancer screening.

NPs have an opportunity to influence the incidence and mortality of cervical cancer regardless of the practitioner's area of expertise by discussing the patient's beliefs related to Pap smear testing and perceptions of vulnerability to cervical cancer. NPs can then address these beliefs and perceptions that may be inaccurate through NP/patient consultation during an office visit and via culturally sensitive and linguistically appropriate education materials. The USDHHS recommends that healthcare providers should "improve awareness and knowledge through the development and provision of linguistically and culturally appropriate information" (National Institutes of Health, 2002, p. 12).

Because having a usual source of care has been found to improve cervical cancer screening (Bazargan et al., 2004; Behbakht et al., 2004; Hiatt et al., 2001; Otero-Sabogal et al., 2003; Sambamoorthi & McAlpine, 2003; Selvin & Brett, 2003), NPs have a unique opportunity to facilitate the health screening practices of African American and Hispanic women. For example, NPs can participate in community health fairs by providing educational materials, consultation, and gift certificates for cervical cancer screening. In addition, nurse practitioners can send postcards to remind women to schedule their annual Pap smear test.

### Conclusions

Cervical cancer continues to be a health issue that is preventable by obtaining routine Pap smear tests. Pap

smear testing is an underutilized screening test that can detect cervical cell changes in the precancerous stage. Treatment for precancerous cell changes are curable and can prevent the advancement to cervical cancer. Although this literature review provides important information on the factors that motivate and influence the cervical cancer screening practices of African American and Hispanic women, additional research is needed to identify other factors as well as further explore the influences identified in this literature review. This will provide the impetus for the development of culturally sensitive nursing interventions tailored to the needs of minority women, thereby increasing health prevention practices and reducing the incidence and mortality of cervical cancer.

### References

- American Cancer Society. (2005a). *Cancer prevention & early detection facts & figures*. Retrieved August 14, 2006, from <http://www.cancer.org/downloads/STT/CPED2005v5PWSecured.pdf>
- American Cancer Society. (2005b). *Cancer facts and figures 2005*. Atlanta, GA: Author.
- Bazargan, M., Bazargan, S. H., Garooq, M., & Baker, R. S. (2004). Correlates of cervical cancer screening among underserved Hispanic and African-American women. *Preventive Medicine, 39*, 465–473.
- Behbakht, K., Lynch, A., Teal, S., Degeest, K., & Massad, S. (2004). Social and cultural barriers to Papanicolaou test screening in an urban population. *American College of Obstetricians and Gynecologists, 104*(6), 1355–1361.
- Boyer, L. E., Williams, M., Callister, L. C., & Marshall, E. S. (2001). Hispanic women's perceptions regarding cervical cancer screening. *JOGNN Clinical Issues, 30*(2), 240–245.
- Centers for Disease Control and Prevention. (2004). *Behavioral risk factor surveillance system*. Atlanta, GA: National Center for Chronic Disease and Prevention and Health Promotion.
- Coronado, G. D., Thompson, B., Koepsell, T. D., Schwartz, S. M., & McLerran, D. (2004). Use of pap test among Hispanics and non-Hispanic whites in a rural setting. *Preventive Medicine, 38*, 713–722.
- Gorin, S. S., & Heck, J. E. (2004). Cancer screening among Latino subgroups in the United States. *Preventive Medicine, 40*, 515–526.
- Hiatt, R. A., Pasick, R. J., Stewart, S., Bloom, J., Davis, P., Gardiner, P., et al. (2001). Community-based cancer screening for underserved women: Design and baseline findings from the breast and cervical cancer intervention study. *Preventive Medicine, 33*, 190–203.
- Hoyo, C., Yarnall, K. S. H., Skinner, C. S., Moorman, P. G., Sellers, D., & Reid, L. (2005). Pain predicts non-adherence to pap smear screening among middle-aged African American women. *Preventive Medicine, 41*, 439–445.

- Jennings-Dozier, K. (1999). Predicting intentions to obtain a pap smear among African American and Latino women: Testing the theory of planned behavior. *Nursing Research, 48*(4), 198–205.
- Jennings-Dozier, K., & Lawrence, D. (2000). Sociodemographic predictors of adherence to annual cervical cancer screening in minority women. *Cancer Nursing, 23*(5), 350–356.
- Lockwood-Rayermann, S. (2004). Characteristics of participation in cervical cancer screening. *Cancer Nursing, 27*(5), 353–363.
- McMullin, J. M., De Alba, I., Chavez, L. R., & Hubbell, F. A. (2005). Influence of beliefs about cervical cancer etiology on pap smear use among Latina immigrants. *Ethnicity and Health, 10*(1), 3–18.
- National Cancer Institute. (2005a). *A snapshot of cervical cancer. Incidence and mortality rate trends*. Retrieved January 28, 2006, from <http://planning.cancer.gov/disease/Cervical-Snapshot.pdf>
- National Cancer Institute. (2005b). *Surveillance, epidemiology, and end results. SEER cancer statistics. Incidence of cervix uteri cancer*. Retrieved August 8, 2006, from <http://seer.cancer.gov/>
- National Cancer Institute. (2005c). *Cancer control & population sciences. Cancer in women of color monograph*. Retrieved November 20, 2005, from <http://cancercontrol.gov/womenofcolor/mexican.html>
- National Institutes of Health. (2002). *Excess cervical cancer mortality, a marker for low access to health care in poor communities*. Washington, DC: Center to Reduce Cancer Health Disparities. Retrieved October 30, 2005, from <http://crchd.nci.nih.gov/meetings/Excess%20CervCanMort.pdf>
- National Poverty Center. (2003). *Poverty in the United States frequently asked questions*. The University of Michigan, Gerald R. Ford School of Public Policy. Retrieved November 6, 2005, from <http://npc.umich.edu/poverty/>
- Nelson, K., Geiger, A. M., & Mangione, C. M. (2002). Effect of health beliefs on delays in care for abnormal cervical cytology in a multi-ethnic population. *Journal of General Internal Medicine, 17*(9), 709.
- Otero-Sabogal, R., Stewart, S., Sabogal, F., Brown, B., & Perez-Stable, E. J. (2003). Access and altitudinal factors related to breast and cervical cancer rescreening: Why are Latinas still underscreened? *Health Education and Behavior, 30*(3), 337–359.
- Sambamoorthi, U., & McAlpine, D. D. (2003). Racial, ethnic, socioeconomic, and access disparities in the use of preventive services among women. *Preventive Medicine, 37*, 475–484.
- Saslow, D., Runowicz, C. D., Solomon, D., Moscicki, A. B., Smith, R. A., Eyre, H. J., et al. (2006). American Cancer Society guideline for the early detection of cervical neoplasia and cancer. *A Cancer Journal for Clinicians, 52*(6), 341–362.
- Scarinci, I. C., Beech, B. M., Kovach, K. W., & Bailey, T. L. (2003). An examination of sociocultural factors associated with cervical cancer screening among low-income Latina immigrants of reproductive age. *Journal of Immigrant Health, 5*(3), 119–128.
- Selvin, E., & Brett, K. M. (2003). Breast and cervical cancer screening: Sociodemographic predictors among white, black, and Hispanic women. *American Journal of Public Health, 93*(4), 618–623.
- Sung, J. F. C., Alema-Mensah, E., & Blumenthal, D. S. (2002). Inner-city African American women who failed to receive cancer screening following a culturally-appropriate intervention: The role of health insurance. *Cancer Detection and Prevention, 26*, 28–32.
- U.S. Census Bureau. (2004). *Income, poverty and health insurance coverage in the United States*. Washington, DC: U.S. Department of Commerce Economics and Statistics Administration. Issued August 2005.
- U.S. Department of Health and Human Services. (2000). Office of Public Health Services. *Healthy People 2010*. Washington, DC: Centers for Disease Control and Prevention, National Institutes of Health. Retrieved November 2, 2005, from <http://www.healthypeople.gov/document/html/volume1/03cancer.htm>