Patient knowledge and beliefs as barriers to extending cervical cancer screening intervals in Federally Qualified Health Centers ☆,☆☆

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ABSTRACT

Objective. Despite guidelines recommending cervical cancer screening intervals be extended beyond one year, clinical practice has been slow to change. Patient preferences are a potential barrier. In the Centers for Disease Control's Cervical Cancer (Cx3) Study at Federally Qualified Health Centers (FQHCs) across Illinois, we surveyed patients about screening practices, and assessed beliefs regarding lengthening screening intervals.

Method. We analyzed data from 984 low income women in the Cx3 Study (2009–2011). Participants completed a survey assessing health history, knowledge about Pap testing, beliefs and intentions about extending screening intervals, and demographics.

Results. The majority reported annual Pap testing (61%), while only 24% reported a 2–3 year screening interval (recommendation at time of survey). Misunderstandings about the Pap test were prevalent, with over half believing it screened for vaginal, yeast, and sexually transmitted infections (58%–72%). Unfavorable beliefs about extending screening intervals were common. The majority (57%) indicated that they would not wait 3 years to be screened if their physician recommended it, and intentions were associated with knowledge about Pap testing.

Conclusion. Most women reported annual cervical cancer screening, and intended to resist longer screening intervals. Patients' lack of knowledge and unfavorable beliefs may serve as barriers to extending screening intervals.

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Introduction

Current guidelines from U.S. professional medical organizations recommend that women who have a cervix and are at average risk of cervical cancer forego an annual Pap testing schedule in favor of extending the interval between routine screening tests. Specifically, the American College of Obstetricians and Gynecologists (ACOG), the United States Preventive Services Task Force (USPSTF), and the American Cancer Society (ACS) recommend that average risk women 30 to 65 years old be screened for cervical cancer via co-testing (i.e., Pap and HPV testing) every 5 years, or with Pap alone every 3 years (ACOG, 2012; Moyer, 2012; Saslow et al., 2012). The current guidelines updated those issued in 2002/2003, which recommended extending intervals to 2–3 years for women 30 years and older with 3

consecutive normal Pap test results (ACOG, 2003; USPSTF, 2003; Saslow et al., 2002). Despite the length of time passed since extended intervals were recommended and evidence supporting the safety of recommendations, clinical practice has been slow to change (Meissner et al., 2010; Roland et al., 2011; Saint et al., 2005; Saraiya et al., 2010; Sirovich and Welch, 2004; Yabroff et al., 2009). Five or more years after extended intervals were recommended, many medical providers continued to recommend annual screening (Benard et al., 2011; Meissner et al., 2010; Roland et al., 2011; Saraiya et al., 2010) and a recent survey of women confirmed the predominance of annual testing (Chen et al., 2012).

Patients' unfavorable attitudes about lengthening intervals have been recognized as a potential barrier to implementing current guidelines (MacLaughlin et al., 2011; Meissner et al., 2010; Sirovich and Welch, 2004; Sirovich et al., 2005). While some have found that patients are suspicious of motivations behind the guidelines (Sirovich et al., 2005), the wider variety of reasons behind patient resistance have not been fully explored.

As part of the Centers for Disease Control's Cervical Cancer (Cx3) Study, we surveyed a sample of women being screened for cervical cancer at Federally Qualified Health Centers (FQHC) on their knowledge about the Pap test, beliefs about extending screening intervals, and intentions to extend screening intervals.

Methods

Participants

Data were obtained from baseline surveys conducted October 2009 to May 2011 as part of Cx3, a study to identify barriers to appropriate cervical cancer screening practices and to implement an educational intervention to promote evidence-based screening practices. The study was conducted in 15 clinics associated with six FQHCs serving low income women in Illinois. FQHCs provide comprehensive primary health care services to medically underserved communities and vulnerable populations in high-need areas across the United States. A baseline survey was completed by a convenience sample of 984 women 30 to 60 years old who were undergoing a regular screening Pap test (i.e., no: abnormal Pap test in the last year, cervical cancer, HIV, hysterectomy, or other known risk factors). Eligible patients were identified through medical chart review by clinic staff and were invited to participate when they arrived at the clinic for their visit. No records were kept on those who refused participation; thus, we could not calculate a response rate. Women were offered a $5 cash incentive for participation. Baseline questionnaires were self-administered in the clinic waiting room prior to the woman's exam and were available in English and Spanish. They elicited information on demographic characteristics, cervical cancer screening history, risk factors, knowledge and beliefs about cervical cancer screening, and cost of health care services. The questionnaire was pilot tested with nine women at a FQHC clinic in Atlanta, Georgia. This study was approved by CDC's Institutional Review Board and informed consent was obtained from study participants.

Measures

Knowledge about the purpose of the Pap test was assessed by questions modified from previously published research (Hawkins et al., 2011). Questions asked, "Do you agree or disagree that the Pap test is used to check for…" Nine conditions were listed with the following response options: "Agree," "Disagree," and "Not Sure" (see Fig. 1 for the conditions). Women (n = 26) who did not answer any of the nine items but answered other questions on the same and subsequent pages of the survey were categorized as answering "Not Sure" to all conditions. Those who did not answer any items nor adjacent questions (n = 22) were categorized as having missing responses.

Knowledge about the purpose of the Pap test was summarized in two ways. First, as shown in Fig. 1, participants were categorized by believing the Pap test screens for: (a) cervical cancer exclusively, (b) other conditions exclusively, or (c) cervical cancer plus other conditions. Second, a score was created to represent participants' "general Pap understanding," which prioritized knowing that the Pap test screens for cervical cancer and ignored beliefs about the Pap test's link with two conditions: HPV and vaginal cancer. Beliefs about HPV and vaginal cancer were excluded from this score because of HPV's close connection with cervical cancer and because in rare circumstances it is clinically advisable to use a Pap test to detect vaginal cancer. Participants who did not check *cervical cancer* were categorized as having poor general Pap understanding. Participants who checked *cervical cancer* but also checked *pregnancy, HIV, gonorrhea, chlamydia, yeast infections* and/or *vaginal infections* were also categorized as having poor general Pap understanding. Participants who checked *cervical cancer* and no additional conditions (excluding *HPV* and *vaginal cancer*) were considered to have good general Pap understanding.

Seven items developed for this study elicited participants' beliefs about waiting three years between Pap tests. This series of questions began with the introductory language, "*Waiting three years for my next Pap test …*" and followed with seven beliefs (displayed in Fig. 2). The specific beliefs assessed by these items were based on previous research (e.g., Sirovich et al., 2005). Participants were instructed to indicate whether they agreed, disagreed or neither agreed nor disagreed with each statement.

Intention to wait three years between Pap tests was assessed by a question developed for this study: "If your health care provider recommends that you have your next Pap test in 3 years, how likely are you to wait that long?" Five response options from "Very unlikely" to "Very likely" with a "Neither"/"Not sure" midpoint were offered.

Statistical analysis

We present descriptive statistics for all measures. Analyses of beliefs and intentions to wait three years between Pap screenings were conducted on a subset of respondents (n = 663), as skip patterns in the survey necessitated excluding those who had never heard of HPV (n = 194) and who were above average risk for cervical cancer based on the following: they were told to return in less than a year based on their last Pap test results (n = 61); they had tested positive for HPV (n = 8); or, they had an abnormal Pap test result in the previous three years (n = 51).

Ordered logit regression was conducted to examine the association between general Pap understanding and intentions to follow a three-year screening interval (outcome variable). The ordered logit model assumes the proportionality of the odds-ratio. The proportionality assumption was tested with the Brant test; no violation was found (chi-square = 1.37 with d.f. = 3, p = .7412). Stata release 12.1 was used to fit the ordered logit models using maximum likelihood estimation. Estimation of standard errors accounted for the clinic-based clustered sampling design using the Stata survey (*svyset*) option. The significance level was set as two-sided p = 0.05.

Results

Demographic characteristics for the whole sample and subsample are presented in Table 1. Study participants were females between the ages of 30 and 60 (mean 45 years; standard deviation [SD] 7.5), 32% Hispanic, 39% non-Hispanic white, and 26% non-Hispanic black. Educational attainment was varied, with 32% not having completed a high school diploma, 23% with a high school diploma, and 45% having attempted or completed degrees in higher education. Only 21% held private insurance while 45% had no insurance, and 40% had public or another type of coverage (percentages add to >100% because respondents could check more than one category of insurance).

As Table 1 shows, the majority reported receiving annual Pap tests (61%) and were advised to return annually (66%) after their last Pap test. While 28% reported ever having an abnormal Pap test result, the average time since most recent abnormal test was 9.8 (SD 7.8) years (not in table).
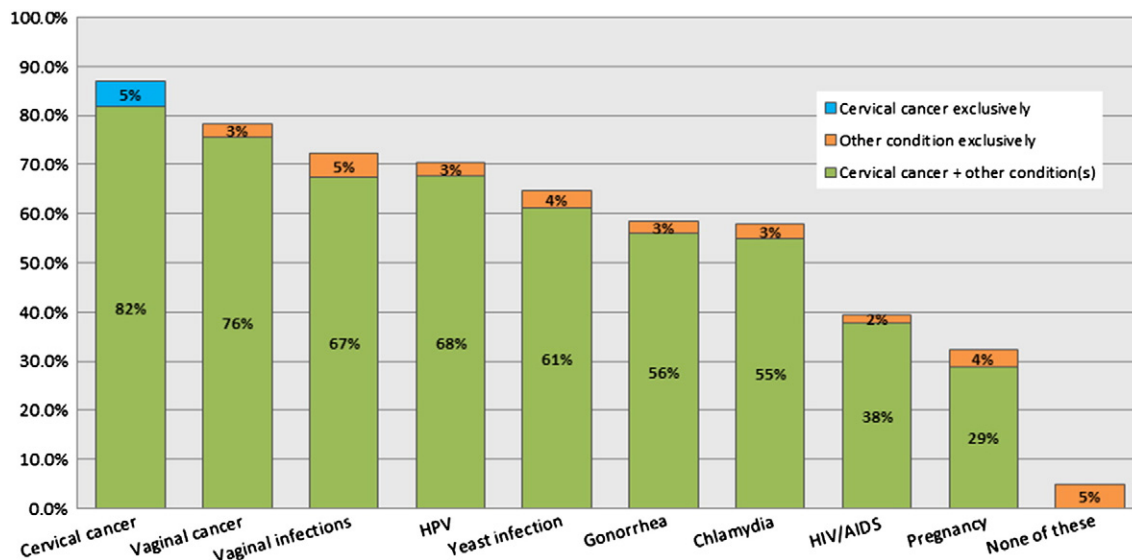

Fig. 1. Knowledge about the purpose of the Pap test in screening for cancer and other conditions (n = 962). (Study was conducted in 15 Federally Qualified Health Center clinics in Illinois, USA, 2009–2011.)