Predictors of timely attendance for colposcopy following an abnormal Pap test among Hispanic women on the Texas-Mexico border

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Abstract

Introduction: Women with abnormal Pap smears are at an increased risk for developing cervical cancer. Appropriate screening with follow up and interventions should prevent the vast majority of deaths resulting from cervical cancer. However, timely follow-up to colposcopyy following an abnormal Pap smear is a common problem in many populations, especially ethnic minorities and the medically underserved. The purpose of this study is to examine patient characteristics that are associated with an appropriate interval between an abnormal Pap smear and colposcopy.

Materials and Methods: We analyzed data on 362 Hispanic patients attending a colposcopy clinic at an academic medical center in El Paso, Texas. Non-Hispanics were excluded from the current analysis. The dichotomous outcome variable was a timely follow-up to an abnormal Pap smear. Subjects whose interval between the date of their abnormal Pap smear and the date of their colposcopy was 90 days or less were classified as having an optimal interval. Five risk factors for an optimal interval were evaluated, including Hispanic acculturation based on language use as assessed by the Marin Short Acculturation Scale for Hispanics (SASH) and educational status. Univariable analyses with the use of the chi-square test preceded the multivariable analysis. A generalized linear model was fit using a binomial distribution and log link. Risk ratios (RR), 95% confidence intervals (CI), and P values were calculated from this log-binomial model.

Results: After excluding non-Hispanics and records with missing values for the variables under study, a total of 362 records were available for the analysis. Overall, 226 women (62.4%) had an optimal interval. The less acculturated subjects were more likely to be 30 years of age or older at the time of enrollment in the study, less likely to have some college education and more likely to have had an optimal interval to colposcopy than the more acculturated subjects. Two of the five RRs were statistically significant: Women who were 30 years of age or older were 22% more likely to have an optimal interval than younger women after adjusting for the remaining variables (RR = 1.22, 95%CI: 1.03-1.44, P=.020) and the less acculturated were 29% more likely to have had an optimal interval.

Conclusions: Women ≥30 years of age were more likely than younger women to have a timely follow-up to their abnormal Pap smear and women who were less acculturated were more likely, to have had an optimal interval between their Pap smear exam and their follow-up colposcopy.

Introduction

- Lower rates of follow-up after abnormal cervical cytology (Pap smear) in racial and ethnic minorities may contribute to the higher cervical cancer mortality observed in these groups [1]. Follow-up care typically includes colposcopy [2], a procedure that involves close examination of the cervix. According to the Breast and Cervical Cancer Services (BCCS) Program, the interval between initial screening and diagnosis (typically made with the aid of colposcopy) should be ≤90 days for ≥75% of women with abnormal results [3].
- The objective of this preliminary analysis was to identify factors associated with an optimal interval between the time of an abnormal Pap smear and the date of the colposcopy.

Materials and Methods

- Data were analyzed using SAS 9.3 software (SAS Institute, Inc., Cary, North Carolina). A sample of 452 women was initially available for analysis. After excluding non-Hispanics and records with missing value for the variables under study, a total of 362 records were available for analysis.

- The dichotomous outcome variable was a timely follow-up to an abnormal Pap smear. Subjects whose interval between the date of their abnormal Pap smear and the date of their colposcopy was 90 days or less were classified as having an optimal interval. Subjects whose interval was greater than 90 days were classified as not having an optimal interval.

- Univariable analyses with the use of the chi-square test preceded the multivariable analysis. A generalized linear model was fit using the GENMOD Procedure. A binomial distribution was specified with a log link. Risk ratios (RR), 95% confidence intervals (CI), and P values were calculated from this log-binomial model. Five exposure variables were entered in the log-binomial model : Hispanic acculturation as measured by the Marín scale, age of the patient (≥30 years versus <30 years), education (less than high school, high school graduate or GED, and some college or higher), smoking history, (lifetime history of smoking at least 100 cigarettes) and whether or not an immediate family member had a history of cervical cancer.

Results

Table 1. Characteristics of 362 Hispanic Women who Had an Abnormal Pap Smear. Data Are Presented by Acculturation Status as Measured by the Marín Short Acculturation Scale for Hispanics (SASH).

	Less Acculturated N=207 Number (%)	More Acculturated N=155 Number (%)	P
Demographic			
Age≥30 years	135 (65.2)	62 (40.0)	<0.0001
Education			<0.0001
Less than high school	90 (43.5)	10 (6.5)	
High school graduate or GED	58 (28.0)	22 (14.2)	
Some college or higher	59 (28.5)	123 (79.4)	
Smoked at least 100 cigarettes in lifetime	55 (26.6)	35 (22.6)	.38
Immediate family member had cervical cancer	17 (14.5)	16 (12.4)	0.63
Optimal interval (≤90 days) between an abnormal Pap smear and colposcopy	71 (60.7)	91 (70.5)	0.10

Figure 1. Adjusted Risk Ratios for an Optimal Interval (≤90 Days) Between the Date of an Abnormal Pap Smear and Date of Colposcopy in 362 Hispanic Women.
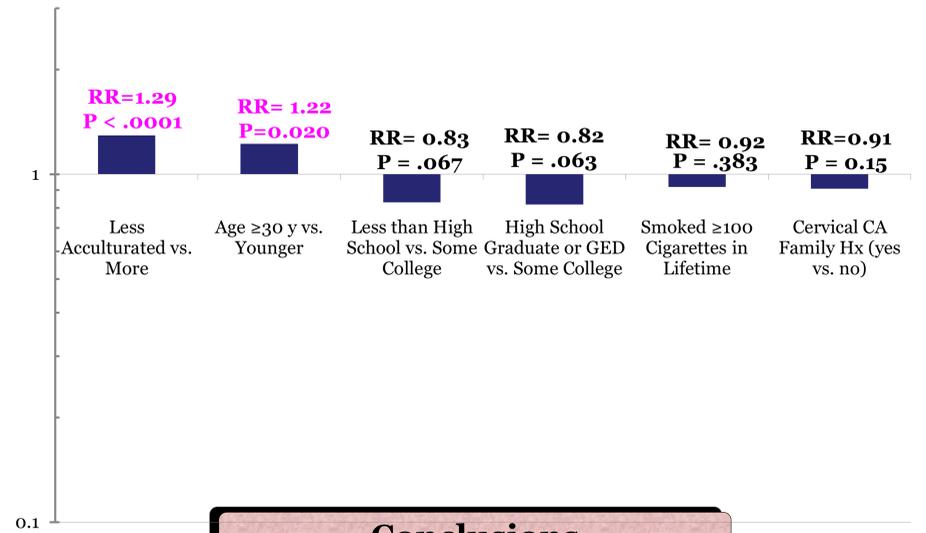
Conclusions

Women who were ≥30 years of age were 22% more likely than younger women to have an optimal interval between the time of their abnormal Pap smear and the performance of the colposcopy (RR=1.22, 95% CI: 1.03-1.44, P=0.020).

Particularly noteworthy is the statistically significant result that the least acculturated women, i.e. women who think, read and speak more in Spanish than English, were more likely to receive a colposcopy exam for a diagnosis of an abnormal Pap result within 90 days. Although other studies have also found that older women are less likely to default from colposcopy [2, 4], to our knowledge a positive association between less acculturation and timeliness of colposcopic evaluation among Hispanic women on the Texas-Mexico border has not been reported in the literature.

The favorable association we observed between the less acculturated patients and timely receipt of colposcopic evaluation will be further studied. In future studies, we will conduct qualitative studies among participants who gave us permission to contact them in the future so that we can learn more about the life experiences of Hispanic women living on the border that would enable some to seek timely care for cervical cancer prevention, while contributing to others' delay of care, or to not seek it at all.

Cited References

1. Percac-Lima S, et al. Barriers to follow-up of an abnormal Pap smear in Latina Women Referred for Colposcopy. J Gen Intern Med 2010; 25:1198-204.
2. Sharp L, et al. Who defaults from colposcopy? A multi-centre, population-based, prospective cohort study of predictors of non-attendance for follow-up among women with low-grade abnormal cervical cytology. Eur J Obstet Gynecol Reprod Biol 2012; 165:318-25.
3. Texas Department of State Health Services, Division for Family and Community Health Services. Policy and Procedure Manual for Breast and Cervical Cancer Services, Fiscal Year 2013.
4. Usha Kiran, TS & Jayawickrama NS. Who are the women who default from colposcopy clinics? J Obs Gynaecol 2002; 22(5): 537-9.