



Facilitators to cervical cancer screening in a minority, urban, underserved population

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ABSTRACT

Objectives: Cervical cancer has markedly declined due to widespread use of screening, but Hispanic women continue to bear a disproportionate amount of the cervical cancer burden due to under-screening. Previous studies have explored barriers to screening but have failed to identify targetable facilitators in this group. We aimed to assess facilitators to cervical cancer screening among a predominantly urban, Hispanic population who presented to a no-cost, community-based clinic.

Methods: Patients completed demographic and health information, a validated social determinants of health (SDOH) screen, and a self-reported facilitators survey on factors which enabled them to present to clinic. Descriptive statistics were conducted to assess patients' sociodemographic characteristics, SDOH, and perceived facilitators.

Results: 124 patients were included. 98 % were Hispanic, 90 % identified Spanish as their preferred language, and 94 % had no insurance. Median age was 41. 31 % of patients reported a history of abnormal screening. On SDOH, over 80 % of patients screened positive in at least one domain, with the most common being food insecurity (53 %) and stress (46 %). The most frequently reported facilitator was encouragement from a family member/friend (30 %). 26 % of patients reported time off from work and 25 % reported availability of child/elder care as facilitators.

Conclusions: Identifying facilitators among patients who present for cervical cancer screening is critical to designing care plans to reach all populations. Our survey showed that the single greatest facilitator to patients presenting for cervical cancer screening was encouragement from a family member/friend. These findings suggest that increasing community involvement and awareness may help to improve cervical cancer screening in a minority, urban, underserved population.

1. Introduction

Cervical cancer incidence and mortality in the United States have declined by more than 75 % since the 1940s, a decrease largely attributed to the widespread use of cervical cancer screening through cervical cytology (Pap) and the treatment of precancerous lesions (Scarinci et al., 2010; Yang et al., 2018). This decline in cervical cancer rates is considered one of the greatest successes in cancer prevention to date (Scarinci et al., 2010). However, not all populations in the United States

have experienced such declines, and underserved communities bear a disproportionate amount of the cervical cancer burden. More than 60 % of invasive cervical cancer cases in the United States occur in underserved populations, notably among low-income women and racial/ethnic minorities (Scarinci et al., 2010; Yang et al., 2018). Hispanic women are at especially high risk; compared to non-Hispanic White women, they are 40 % more likely to be diagnosed with cervical cancer and 30 % more likely to die from it (Cancer and Hispanic Americans, 2022). These disparities in cervical cancer incidence are directly linked

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to under-screening. A recent survey found that 13.5 % of Hispanic women had never had a Pap test, compared to 11.7 % of non-Hispanic Black and 5.9 % of non-Hispanic White patients (Ventura et al., 2021).

In recognition of the need for increased cervical cancer screening uptake among vulnerable populations in Houston, physicians affiliated with our institution established a program to provide no-cost screening to a predominantly Hispanic, urban population. The program provides services monthly at two locations in the city and is staffed by physicians affiliated with the project. The project provides Pap and HPV co-testing, as well as diagnosis and treatment of cervical dysplasia, including colposcopy and loop electrosurgical excision. Providers see 30–50 patients per clinic and have a nearly 100 % follow-up rate for the treatment of cervical dysplasia.

Previous studies have identified barriers to cervical cancer screening among women of Hispanic origin (Byrd et al., 2007; Mehta et al., 2021; Moore de Peralta et al., 2015; Watts et al., 2009; Zeno et al., 2022). Commonly reported barriers include lack of health insurance, financial cost, poor healthcare access, fear of pain or discomfort, embarrassment, language barriers, and fear of cancer diagnosis. While barriers to cervical cancer screening among Hispanic women have been well-described, previous studies have failed to identify targetable facilitators for screening in this vulnerable group. Therefore, we aimed to determine factors that enabled patients to present to our no-cost Pap clinic.

2. Methods

To capture facilitators to cervical cancer screening among patients at our clinic, a written survey was administered to patients upon their arrival. Participants were asked in the survey, “What helped you come to clinic today?”. They were presented with seven choices, as well as a free text “Other” option, and instructed to select all statements that apply (Table 1). Additionally, patients completed a demographics and health information questionnaire and a validated screening tool capturing social determinants of health (SDOH) (Chew et al., 2004; The Hunger Vital Sign, 2023; Hall et al., 2009; Sandel et al., 2018; National Association of Community Health Centers AoAPCHO). In the demographics questionnaire, participants indicated their age, preferred language, marital status, race/ethnicity, insurance status, address, and relevant history of cancer screening and gynecologic problems. The SDOH screen assessed health literacy, transportation access, housing instability, food insecurity, financial strain, and stress. Patients screening positive in at least one SDOH domain were connected to community resources or received support from a community health worker. All materials were available in English and Spanish. Patients who completed all three surveys during four consecutive clinics were included in this study. Descriptive statistics were performed to assess patients’ sociodemographic characteristics, SDOH, and facilitators to cervical cancer screening.

3. Results

One hundred and twenty-four individuals were included in our analysis. As shown in Table 2, 90 % of patients identified Spanish as their preferred language, and 98 % identified as Hispanic or Latino. Ninety-four percent had no health insurance at the time of their appointment. The median driving distance to clinic was 19 miles,

Table 1
Facilitators to cervical cancer screening survey.

What helped you come to clinic today? (Select all that apply.)	
_I had care for children or others I care for.	_My doctor/healthcare provider encouraged me to come.
_I took time off work.	_A family member/friend encouraged me to come.
_I don't usually work on this day.	_The providers here speak Spanish.
_The clinic is close to my home.	_Other:___

despite each clinic being in an urban setting (Table 2). Almost one-third of patients reported a history of abnormal cervical cancer screening. Only 6.5 % of patients had been vaccinated against human papillomavirus (HPV), and almost 10 % of patients had undergone previous cervical procedures (Table 3).

The vast majority of patients (82 %) screened positive on the SDOH questionnaire, underscoring the unmet needs of the population at our clinic. Individuals most commonly screened positive for food insecurity (52 %), stress (46 %), and housing instability (37 %). Financial strain (27 %), assessed by asking patients how difficult it is to pay for basic needs, and transportation difficulties (26 %) also impacted patients. Health literacy (19 %), measured by asking patients how confident they are filling out medical forms on their own, also affected a significant number of individuals, although patients screened positive in that domain the least often (Fig. 1).

In the survey capturing facilitators to cervical cancer screening, patients most often identified encouragement from a family member or friend as a facilitator, with 30 % of patients endorsing that item on the questionnaire. Other commonly reported facilitators were time off from work (26 %) and the availability of child or elder care (25 %). Only 19 % of patients identified Spanish-speaking providers as a facilitator despite the fact that almost all providers at the clinic are fluent in Spanish. Interestingly, the least commonly reported facilitator to cervical cancer screening was encouragement from a physician or other healthcare provider (5 %) (Fig. 2).

4. Discussion

There were four important findings from this study of a predominantly urban, Hispanic population that presented to our no-cost cervical cancer screening clinic. First, over 80 % of patients screened positive in at least one domain of the SDOH questionnaire and nearly all patients did not have health insurance. These results confirm the need for no-cost cervical cancer screening resources in our community and that our clinic does provide care to vulnerable patients. Additionally, patients traveled a median of 19 miles to clinic despite each clinic being in an urban setting, a finding that suggests a scarcity of local no-cost screening programs. Providing accessible, low-cost cancer screening and treatment services is essential, as previous studies have shown that long distance to clinic is associated with lower screening rates (Engelman et al., 2002), increased odds of abnormal screening results (Kim et al., 2013), cancer diagnosis at more advanced stage (Huang et al., 2009; Parsons and Askland, 2007; Silverstein et al., 2002), lower cancer clinical trial participation (Avis et al., 2006; Donnelly et al., 2017; Lara et al., 2001; Prieske et al., 2018), and increased odds of being lost to follow-up during treatment (Hoyle et al., 2022; Wysham et al., 2015).

Secondly, nearly one-third of patients identified encouragement from a family member or friend as a facilitator to cervical cancer

Table 2
Demographic characteristics among patients who presented to the no-cost Pap clinic.

Demographic characteristic	Number of patients (N = 124) (%)
Age (median)	41
Preferred Language	
Spanish	112 (90.4 %)
English	12 (9.6 %)
Marital status	
Single	24 (19.7 %)
Married/Life Partner	76 (61.5 %)
Divorced/Separated/Widowed	22 (18.9 %)
Race/ethnicity	
Hispanic or Latino	120 (97.6 %)
Black	2 (1.6 %)
Native American/Alaskan Native	1 (0.8 %)
No insurance	116 (93.5 %)
Median driving distance to clinic in miles	19.1 (IQR 13.7–24.4)

Table 3
Health history among patients who presented to the no-cost Pap clinic.

Health history characteristic	Number of patients (N = 124) (%)
Previous Pap test?	118 (96.7 %)
Date of last Pap	
Last year	9 (7.6 %)
Last 2 years	22 (18.6 %)
Last 5 years	75 (63.6 %)
Last 10 years	12 (10.2 %)
History of abnormal Pap?	36 (30.5 %)
Received HPV vaccine?	8 (6.5 %)
Previous cervical procedures?	12 (9.8 %)
Previous mammogram?	38 (30.6 %)
Date of last mammogram	
Last year	12 (32.4 %)
Last 2 years	1 (2.7 %)
Last 5 years	17 (45.9 %)
Last 10 years	7 (18.9 %)

screening. This finding suggests that for a predominantly urban, Hispanic population, future interventions should utilize a community-based approach to cancer screening education so that providers can capitalize on the value of patients' social networks. For example, our institution has existing partnerships with community organizations such as churches that we utilize to host educational events about cervical cancer prevention. Our study provides evidence that we should broaden these efforts. Numerous interventions across cancer types have demonstrated improved screening utilization using a community-based approach to screening education (Attipoe-Dorcoo et al., 2021; Gibbons and Tyus, 2007; Gözümlü et al., 2010; Haynes et al., 2023) among minority populations and support this approach.

Next, the second- and third- most commonly reported facilitators to screening were time off from work and the availability of child or elder care. These findings are consistent with prior work that reported that

underserved patients without childcare support are less likely to receive regular Pap tests than their counterparts with childcare support(Clark et al., 2011). With these facilitators in mind, we schedule our Pap clinics for Saturday mornings to accommodate many patients' work and caregiver obligations. We encourage other physicians providing healthcare services to vulnerable patients to consider patients' outside responsibilities as well. Prior interventions have improved screening rates by offering flexible hours(CfDCa et al., 2023; Dontchos et al., 2019; Wang et al., 2020) and connecting patients to childcare services(Alvarez et al., 2022) and uphold this strategy.

Finally, the least commonly reported facilitator to screening was encouragement from a physician or other healthcare provider. One possible mechanism underlying this observation is that survey participants do not see primary care providers (PCPs) regularly due to poor healthcare access. Often, patients without access to PCPs must seek primary care services at emergency departments or other acute care settings. Even though there was not a way to identify recent medical visits in our study, our findings suggest a missed opportunity for PCPs and other health care providers to promote cervical cancer screening awareness in vulnerable populations. To address the issue of limited primary care access in our study population, we invited community health workers to our clinics to help patients apply for a local health financial assistance program and to connect patients with low- or no-cost health services in our community. In addition, we encourage all providers, regardless of specialty or practice setting, to educate patients on appropriate cancer screenings when possible.

There are several additional limitations in our study. First, we included only patients who successfully presented to our clinic for cervical cancer screening. Patients unable to receive care at our clinic, including those scheduled for screening but who missed their appointments, may report different facilitators. Additionally, our study captured only facilitators in our questionnaire, in addition to a free text "Other" option. It is possible that participants have other facilitators to cervical

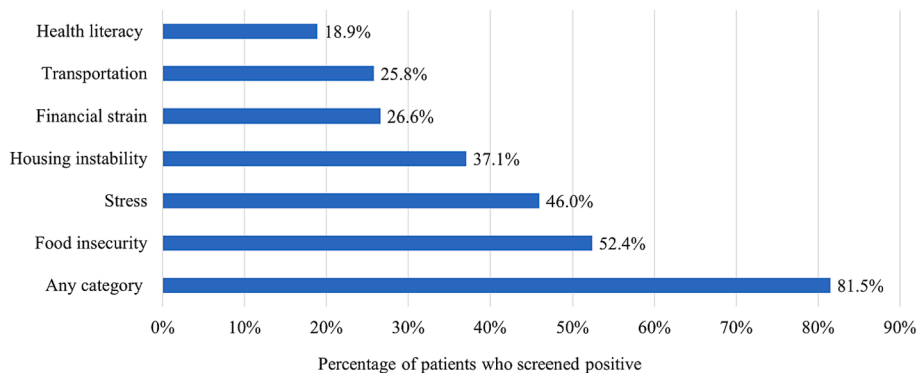


Fig. 1. Positive results on SDOH screen, by domain.

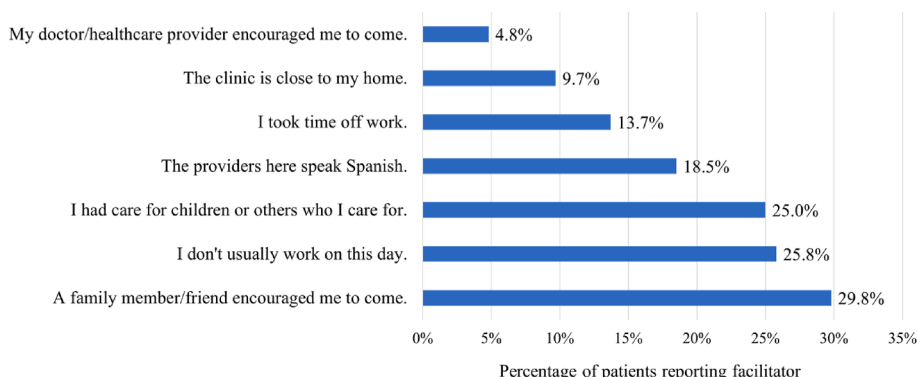


Fig. 2. Patient-reported facilitators to cervical cancer screening.

cancer screening that were not included in the survey. Finally, for survey simplicity, a scale was not included. Therefore, there was not a way for patients to indicate the relative importance of each facilitator they identified.

5. Conclusions

Nearly all patients who presented to our no-cost cervical cancer screening clinic screened positive in at least one domain of the SDOH questionnaire, indicating significant barriers to screening in this group. The most commonly reported facilitator to screening was encouragement from a family member or friend, followed by time off from work and the availability of child or elder care. These findings suggest that employing community-based interventions to screening education and accommodating patient obligations may be important ways to improve cervical cancer screening uptake in a predominantly urban, Hispanic population. Finally, less than 5 % of participants identified encouragement from a healthcare provider as a facilitator to screening, highlighting significant room for improvement among providers to facilitate screening among vulnerable groups.

CRedit authorship contribution statement

Noel Higgason: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Linh Nguyen:** Methodology, Writing – review & editing. **Yen-Chi Le:** Methodology, Writing – review & editing. **Ogochukwu Juliet Ezeigwe:** Methodology, Writing – review & editing. **Tong Han Chung:** Methodology, Formal analysis, Writing – review & editing. **Natalia Williams:** Methodology, Writing – review & editing. **Xochitl K. Olguin:** Methodology, Writing – review & editing. **Abigail S. Zamorano:** Conceptualization, Supervision, Methodology, Writing – review & editing.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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