Preventive Medicine 114 (2018) 149–155

Contents lists available at ScienceDirect

Preventive Medicine

journal homepage: www.elsevier.com/locate/ypmed

Acceptability of self-sampling and human papillomavirus testing among non-attenders of cervical cancer screening programs in El Salvador

M. Maza[a,h], M. Melendez[a,h], R. Masch[a,h], K. Alfaro[a,h], A. Chacon[b], E. Gonzalez[b], M. Soler[a,h,*], G. Conzuelo-Rodriguez[a,h], J.C. Gage[c], T.A. Alonzo[d], P.E. Castle[e], J.C. Felix[f], M. Cremer[a,g,h]

[a] Basic Health International, Colonia San Francisco, Avenida Las Camelias 14, San Salvador, El Salvador
[b] Ministry of Health, San Salvador, El Salvador, Calle Arce 827, San Salvador, El Salvador
[c] National Cancer Institute, 9000 Rockville Pike, Bethesda, MD 20892, United States of America
[d] University of Southern California, 222 East Huntington Drive, Suite 100, Monrovia, CA 91016, United States of America
[e] Albert Einstein College of Medicine, 300 Morris Park Avenue, Bronx, NY 10461, United States of America
[f] Medical College of Wisconsin, 9200 W. Wisconsin Avenue, Milwaukee, WI 53226, United States of America
[g] Cleveland Clinic, 9500 Euclid Avenue, Cleveland, OH 44195, United States of America
[h] Basic Health International, 25 Broadway, 9th Floor, New York, NY 10004, United States of America

ARTICLE INFO

Keywords:
HPV
Self-sampling
Cervical cancer
El Salvador

ABSTRACT

In a cross-sectional study carried out in El Salvador between February 2016 and July 2017, self-sampling and human papillomavirus (HPV) testing was found to be highly acceptable among 2019 women who had not attended a cervical cancer screening in at least 3 years. Within this population, HPV positivity rates differed according to age, marital status, number of children, and lifetime sexual partners. The proportion of women who tested HPV positive or who were diagnosed with cervical intraepithelial neoplasia grade 2 (CIN2) or more severe diagnoses (CIN2+) was similar to the general population of the area. Among the reasons for failing to participate in previous screening programs, non-attending women described logistic concerns, but also erroneous beliefs regarding HPV and cervical cancer, misconceptions regarding the screening procedure, discomfort with male providers, and confidentiality fears. The aim of this study was to identify opportunities and challenges that emerged from the use of self-sampling and HPV testing as part of a public cervical cancer control effort in a low-resource setting.

1. Introduction

Cervical cancer is preventable but remains one of the most commonly diagnosed cancers around the world (Vaccarella et al., 2013). More than 80% of new cases occur in low- and middle-income countries (LMICs), which bear 90% of cervical cancer mortality (Ferlay et al., 2014). Since cervical cancer is preceded by persistent infections with specific (high-risk) types of the human papillomavirus (HPV), several screening tests have been developed to detect the presence of these high-risk HPV types. HPV testing is more sensitive than the traditional cervical cancer screening modality, cytology (Pap smear) (Mayrand et al., 2007; Ronco et al., 2010). Unlike cytology, HPV testing can use either a provider-collected cervical swab or, with appropriate instruction, a vaginal specimen that can be collected by the woman (self-sampling). Self-sampling can potentially improve access to and uptake of screening (Snijders et al., 2013), particularly among under-screened women and non-attenders of clinic appointments (Broberg et al., 2014; Darlin et al., 2013; Gök et al., 2010; Sancho-Garnier et al., 2013; Szarewski et al., 2011).

The cost of HPV testing assays has restricted the use of this method to high-income countries. The careHPV test (QIAGEN, Gaithersburg, MD, USA) was developed to be a lower-cost assay, and has facilitated the introduction of HPV screening to LMICs (Jeronimo et al., 2014; Labani et al., 2014; Qiao et al., 2008). In El Salvador, a country with one of the highest cervical cancer mortality rates in the world (11.9%, age-standardized) (Ferlay et al., 2014), careHPV was recently utilized in the Cervical Cancer Prevention in El Salvador (CAPE) program. This 3-phase initiative was designed to assess the feasibility of a screen-and-treat approach as an alternative to conventional colposcopy and cytology management (Ferlay et al., 2014; Cremer et al., 2016; Cremer

* Corresponding author at: Basic Health International, 25 Broadway, New York, NY 10004, United States of America.
E-mail addresses: mmaza@basichealth.org (M. Maza), mmelendez@basichealth.org (M. Melendez), rmasch@basichealth.org (R. Masch), kalfaro@basichealth.org (K. Alfaro), msoler@basichealth.org (M. Soler), gconzuelo@basichealth.org (G. Conzuelo-Rodriguez), gagej@mail.nih.gov (J.C. Gage), talonzo@childrensoncologygroup.org (T.A. Alonzo), jcfelix@mcw.edu (J.C. Felix), cremerm@ccf.org (M. Cremer).

https://doi.org/10.1016/j.ypmed.2018.06.017
Received 21 March 2018; Received in revised form 21 May 2018; Accepted 25 June 2018
Available online 26 June 2018

Fig. 1. Self-sampling visual aid used to explain the procedure to non-attending women performing the HPV test at home in El Salvador, 2016–2017.

et al., 2017). In CAPE Phase 1, a sub-sample of participants who underwent both self-sampling and provider-sampling reported acceptance of screening via self-sampling, and viewed it as equally or more desirable than provider-sampling (Rosenbaum et al., 2014). However, data also revealed that approximately 12% of targeted women who attended a CAPE Phase 1 informational session did not schedule screenings appointments or failed to show up (Alfaro et al., 2015). A pilot study of these non-attending women demonstrated the feasibility of self-sampling to increase screening uptake in this population, as 41 out of 60 women (68%) accepted the method (Laskow et al., 2017). Studies in other LMICs (e.g., Argentina, Mexico, Uganda, Kenya, Thailand) have also shown that self-sampling is acceptable to most women (Arrossi et al., 2015; Arriba et al., 2010; Ogilvie et al., 2013; Rositch et al., 2012; Trope et al., 2013), although preference for the method over provider-sampling may be mediated by education level and lack of knowledge about cervical cancer prevention (Berner et al., 2013; Tisci et al., 2003; Oranratanaphan et al., 2014).

The purpose of this study, conducted by the non-profit organization Basic Health International (BHI) in partnership with the Ministry of Health (MOH) of El Salvador, was to assess whether availability of self-