RESEARCH ARTICLE

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Cervical Cancer Screening Promotion in Eswatini: A Cross-Sectional Survey of Community Health Workers' Perceived Barriers

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Abstract

Background: This study examined community health workers' perceived barriers to discussing cervical cancer screening with women eligible for screening and explored factors associated with endorsing a greater number of barriers. Additional exploratory analyses assessed factors associated with endorsing a specific barrier. **Methods:** A telephone survey of 172 community health workers was conducted between July and August 2021. Descriptive analyses were performed to assess participants' socio-demographic and service-related characteristics. Regression analyses were used to assess: the association between socio-demographic characteristics and 1) endorsing a greater number of barriers and 2) endorsing a specific barrier or combination of barriers. **Results:** Commonly endorsed barriers included: perceived inability to convince women to undertake screening, inadequate time to discuss screening, lack of confidence to talk to older women about screening, and women's lack of interest in screening advice. Community health workers with at least some secondary school level education endorsed 40% more barriers than those without secondary school level education. Community health workers in Lubombo and Shiselweni endorsed 47% and 35% fewer barriers than community health workers in Hhohho. Community health workers in Lubombo were less likely to endorse: 1) barrier combination consisting of 'inability to talk to women in a way that will convince them to undertake cervical cancer screening' and 'lack of confidence to talk to older women about screening', and 2) barrier combination consisting of 'thinking that cervical cancer screening is not important' and 'thinking that health education is not effective in promoting cervical cancer screening'. **Conclusion:** Improvements to the training of community health workers with respect to screening-related health promotion may be useful in addressing most of the identified barriers.

Keywords: Early detection of cancer- uterine cervical neoplasms- community health workers- Eswatini

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Introduction

While cervical cancer incidence and mortality rates have declined in developed countries, developing countries, particularly in sub-Saharan Africa, continue to experience high cervical cancer incidence and mortality rates (Ba et al., 2021). Eswatini is a sub-Saharan country with one of the highest cervical cancer burdens in the world. Eswatini's age-standardised incidence and mortality rates are estimated at 84.5 and 55.7 per 100 000 female population, respectively (Bruni et al., 2021).

Cervical cancer screening is an effective method of cervical cancer control (Akinlotan et al., 2017; Ba et al., 2021). The World Health Organisation has recommended that all countries implement cervical cancer screening programs (World Health Organisation, 2013). However, a recent systematic review of sub-Saharan African studies conducted between January 2000 and December 2019 estimated a pooled uptake of cervical cancer screening of only 12.9% (95% CI: 10.20–15.54) (Yimer et al., 2021). Similarly, cervical cancer screening uptake remains very low in Eswatini, estimated at 5.2% in 2017 (Ngwenya and Huang, 2017). This compares with an estimated uptake of 63% in developed countries (Gakidou et al., 2008).

Community health workers are lay health workers typically without a formal post-secondary degree or certification in the health field. They commonly work in developing countries and rural areas, where access to health care is limited (Perry et al., 2014). In cervical cancer programs, community health workers encourage screening participation through education about social and clinical risk factors. In some instances, community health

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workers provide emotional and practical support and assistance to identify and overcome barriers to screening uptake along with education (Sharma et al., 2019). Health education may alter beliefs and attitudes and empower women to make informed decisions and choices regarding screening (Saei Ghare Naz et al., 2018). Previous African research findings suggest that health education is viable for increasing cervical cancer screening uptake (Ducray et al., 2021; Téguété et al., 2021).

There are over 5000 community health workers serving communities in Eswatini. Each of the four regions of Eswatini has an average of three regional program coordinators who coordinate community health workers. Lead community health workers, selected by the Community Health Workers' Program, function as mentors to regular community health workers (Ministry of Health, 2016). There are approximately 696 leads in Eswatini. On average, each lead community health worker mentors 12 community health workers (Ministry of Health, 2017).

The Eswatini National Cancer Prevention and Control Strategy of 2019 endorsed using community health workers to promote cervical cancer screening at the community level. Community health workers in Eswatini conduct routine home visits delivering cervical cancer screening information to eligible women to encourage them to participate in screening (Ministry of Health, 2019).

Previous studies have explored barriers to community health workers' engagement in health promotion related to HIV and AIDS (Olang'o et al., 2010) and maternal and child health (Afulani et al., 2012) and have not explicitly focussed on cervical cancer screening. Barriers reported in the African setting include the following: Workload and time constraints (Dil et al., 2012), lack of monetary earnings, unsupportive families, lack of transport, lack of supplies and equipment (Afulani et al., 2012; Dil et al., 2012), limited supportive supervision, and difficulty engaging the community in health promotion sessions (Perry et al., 2014). While it is likely that these barriers may apply in cervical cancer-related health promotion, it is both crucial and timely to specifically examine community health workers' views about barriers to cervical cancer screening promotion, given this has only recently become part of their role. This will provide valuable insights that may improve cervical cancer screening-related health promotion in Eswatini. Findings from this study will offer community health workers a voice that may inform policies for enhancing their effectiveness in promoting cervical cancer screening.

This study aimed to assess community health workers' perceived barriers to discussing cervical cancer screening with women eligible for screening and investigate factors associated with reporting a greater number of barriers.

Materials and Methods

Design and Setting

Using a cross-sectional telephone survey design, data were collected from community health workers from eight selected constituencies (two from each of the four regions of Eswatini). The four regions of Eswatini are Hhohho, Lubombo, Manzini, and Shiselweni. Each region is divided into several constituencies: 15 in Hhohho, 11 in Lubombo, 18 in Manzini, and 15 in Shiselweni. A constituency is an administrative subdivision comprising a cluster of chiefdoms.

Sample

The study included community health workers meeting the following inclusion criteria: (i) working for the Ministry of Health as a community health worker or lead; (ii) being able to understand and converse fluently in English or siSwati; and (iii) having an active Mobile Telephone Network Eswatini/Eswatini Mobile number.

We randomly selected two constituencies from each of the four regions of Eswatini using a computer-generated random number sequence. Written consent to conduct the study was obtained from the community health workers' program manager. The program manager contacted lead community health workers from the selected constituencies and requested permission to share their contact details with the researchers. Consenting leads sought permission from community health workers under their mentorship to share their contact details with the researchers. Five hundred and fifteen community health workers agreed to be contacted by the researchers. An information sheet about the project was given to all participants who met the inclusion criteria, and they were asked to provide verbal consent within a week.

The current study is part of a larger project; the aims of the main project were used to determine the sample size of 172. Forty-three community health workers (including leads) were randomly selected from those who agreed to be contacted in each region. Prior knowledge of similar numbers of community health workers in each region informed the equal distribution of participants to the regions. A post-hoc power analysis showed that a sample of 172 would allow us to estimate the proportion of participants endorsing each barrier with +/- 7.5% precision. We assessed selection bias by comparing the age distribution of community health workers in Eswatini (from a database provided by the community health workers program) and that of the study participants using Pearson's Chi-squared test.

Data Collection

A trained research assistant conducted telephone interviews in siSwati. They recorded responses on a paper-based survey during interviews and then transferred these to an Excel spreadsheet. Each interview lasted 10 – 15 minutes. Data was collected between July and August 2021.

Measures

Perceived barriers to discussing cervical cancer screening: Items assessing community health workers' perceived barriers to discussing cervical cancer screening with their clients were derived from previous health promotion studies (Dil et al., 2012; Asmelashe Gelayee et al., 2017). Responses to the items were on a four-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree). A question stem preceded these items as follows:

"the following factors prevent me from discussing cervical cancer screening with more of my clients."

Socio-demographic variables: Age, sex, level of education, and region were assessed.

Service-related characteristics: Each participant's position (regular vs lead community health worker), length of service (in years), and workload (<15 vs ≥15 homesteads visited per month) were assessed as part of service-related characteristics. In the Eswatini setting, a homestead is the basic social unit consisting of one or more households.

The survey (containing 11 items on possible barriers) was reviewed by six health behaviour experts, to select the best in terms of clarity of the questions and interpretability. This process reduced the number of items to nine. The preliminary survey was then piloted among 25 community health workers. Changes to the wording of the survey items were made based on the pre-test feedback before using to collect data for this study.

Statistical Analysis

Internal consistency of the survey's barrier items was evaluated using Cronbach's alpha coefficient.

Socio-demographic and service-related characteristics were summarised as frequencies with proportions. Mean, standard deviation, and range were used to describe participants' age before it was transformed into a categorical variable. Responses to each perceived barrier statement were dichotomised: 0 = agree (combining strongly agree and agree) and considered endorsement, and 1 = disagree (combining strongly disagree and disagree) and considered non-endorsement of the barrier statement. For each barrier statement, we calculated the number and proportion (with 95% confidence intervals [CIs]) of participants who endorsed it as a barrier to discussing cervical cancer screening with women eligible for screening. We also calculated the number of barriers endorsed by each participant and estimated the sample range, mean and standard deviation for this variable.

Regression analyses were used to assess the association between socio-demographic and service-related characteristics and endorsing a greater number of barriers. Univariate regression analyses were used to select variables to include in multivariate analysis. Negative binomial regression was used [due to the 'number of barriers' outcome variable being overdispersed] (Selen, 2020) to compute incidence rate ratios (IRRs), 95% CIs and corresponding p-values. A two-sided $p \leq 0.05$ was considered statistically significant via the Wald test.

We conducted additional exploratory analyses to assess the association between socio-demographic characteristics and endorsing specific barriers. To do this, we first assessed monotonic relationships between the nine barrier items and combined correlated ones. Four pairs of barriers were either moderately [Spearman's correlation coefficient of between 0.4 and 0.6] or highly [coefficient of between 0.7 and 1] correlated (Akoglu, 2018), with one barrier not correlated to any of the other eight barriers [see table 3]. Logistic regression analyses were performed to compute odds ratios (ORs), 95% CIs and corresponding p-values with each barrier/barrier combination treated as the dependent variable. We used the Bonferroni correction [dividing alpha –0.05– by the number of regression models conducted –5–] to control Type I error rate for multiple hypothesis testing (Bender and Lange, 2001). Therefore, a two-sided $p \leq 0.01$ was considered statistically significant via the Wald test. Statistics and Data (STATA) software version 16 was used.

Results

All (n = 415) community health workers in the eight selected constituencies met the study eligibility criteria and agreed to be contacted by the researchers. Community health workers were randomly selected and contacted until the target sample size of 172 was reached. Using this process, a total of 205 community health workers were selected and telephoned; 33 were unreachable and thus considered non-responders (response rate = 84%). No differences were found between the age distributions of community health workers in Eswatini and study participants (Pearson's Chi-square = 4.729, p = 0.62).

Socio-demographic and service-related characteristics of the sample

The sample had a mean age of 50 years (standard

Table 1. Community Health Workers' Socio-Demographic and Service-Related Characteristics (N=172).

Characteristics	n (%)
Age group	
30 – 45 years	47 (27)
46 – 55 years	74 (43)
56 and above	51 (30)
Sex	
Female	170 (99)
Male	2 (1)
Education	
No secondary school education	73 (42)
At least some secondary school education	100 (58)
Region	
Hhohho	43 (25)
Lubombo	43 (25)
Manzini	43 (25)
Shiselweni	43 (25)
Position	
Regular community health worker	134 (78)
Lead community health worker	38 (22)
Length of service	
0 – 4 years	0
5 –10 years	47 (27)
11 – 15 years	60 (35)
16 – 20 years	36 (21)
21 and above	29 (17)
Workload	
≤15 homesteads	10 (6)
>15 homesteads	162 (94)

Table 2. Perceived Barriers to Discussing Cervical Cancer Screening with Women Eligible for Screening (N=172).

Perceived barrier	Number (%, 95% CI) of community health workers who endorsed this barrier
Inability to talk to women in a way that will convince them to undertake cervical cancer screening	92 (53, 46 - 61)
Inadequate time to discuss cervical cancer screening with my clients	85 (49, 42 - 57)
Lack of confidence to talk to older women about screening	78 (45, 38 - 53)
Women's lack of interest in cervical cancer screening advice	69 (40, 33 - 48)
Women's lack of trust in community health workers	59 (34, 27 - 42)
Thinking that cervical cancer screening is not important	40 (23, 17 - 30)
Thinking that health education is not effective in promoting cervical cancer screening	40 (23, 17 - 30)
Unavailability of treatment and follow-up care for screen-positive women	34 (20, 14 - 27)
Lack of screening services at the local clinic	33 (19, 14 - 26)

deviation = 8.3) and a median age of 50 years, ranging from 30 to 67 years. Almost all (n = 170, 99%) study participants were female. More than half (58%) of the sample had at least some secondary school education. Each region contributed a quarter (n = 43) of the total participants. Most participants were regular community health workers (134, 78%), and most visited more than 15 homesteads a month 162, 94%). Around three-quarters (73%) of the participants had worked as community health workers for more than ten years (Table 1).

Perceived barriers to discussing cervical cancer screening with women eligible for screening

The perceived barriers scale's internal consistency was confirmed with a Cronbach's alpha coefficient of 0.78. The range, the mean and standard deviation of the number of barriers (out of a possible 9) endorsed were 0 - 9, 3, and 2.45, respectively. As displayed in Table 2, the perceived inability to talk to women in a way that will convince them to undertake cervical cancer screening was the primary barrier (53%) to discussing cervical cancer screening with women. Other commonly endorsed barriers included: inadequate time to discuss cervical cancer screening with clients (49%), lack of confidence to talk to older women about screening (45%), and lack of interest in cervical cancer screening advice (40%).

Factors associated with endorsing a greater number of barriers to discussing cervical cancer screening

Age, level of education, region and length of service were significantly associated with endorsing a greater number of barriers in the univariate negative binomial regression models. In multiple negative binomial regression analysis, community health workers' level of education and region were the only characteristics associated with endorsing a greater number of barriers to discussing cervical cancer screening with women, after adjusting for potential confounders (age and length of service). Community health workers with at least some secondary school level education endorsed 40% more barriers (incidence rate ratio [IRR] = 1.40, 95% CI: 1.05, 1.89, p = 0.02) compared to those with no secondary school level education. Community health workers in Lubombo and Shiselweni endorsed 47% and 35% fewer barriers than community health workers in Hhohho (IRR = 0.53, 95% CI: 0.36, 0.80, p < 0.01; and IRR = 0.65, 95% CI: 0.47, 0.91, p = 0.01, respectively).

Factors associated with endorsing specific barriers to discussing cervical cancer screening

In multiple logistic regression analyses, community health workers in Lubombo were less likely to endorse two barrier combinations: 1) combination consisting of

Table 3. Perceived Barrier Combinations Resulting from Spearman's Correlation Analysis

Perceived barrier combinations	Correlation coefficient (p-value)
Inability to talk to women in a way that will convince them to undertake cervical cancer screening	0.60 (<0.001)
AND	
Lack of confidence to talk to older women about screening	
Women's lack of interest in cervical cancer screening advice	0.61 (<0.001)
AND	
Women's lack of trust in community health workers	
Thinking that cervical cancer screening is not important	0.94 (<0.001)
AND	
Thinking that health education is not effective in promoting cervical cancer screening	
Unavailability of treatment and follow-up care for screen-positive women	0.72 (<0.001)
AND	
Lack of screening services at the local clinic	
Inadequate time to discuss cervical cancer screening with my clients	-

'inability to talk to women in a way that will convince them to undertake cervical cancer screening' and 'lack of confidence to talk to older women about screening' (OR = 0.18, 95% CI: 0.07, 0.48, p < 0.001), and 2) combination of 'thinking that cervical cancer screening is not important' and 'thinking that health education is not effective in promoting cervical cancer screening' (OR = 0.17, 95% CI: 0.04, 0.65, p = 0.001).

Discussion

To our knowledge, this is the first study to explore community health workers' perceived barriers to discussing cervical screening with their clients. In our study, 53% of participants perceived that they could not convince eligible women to screen. This skill is vital to the quality and reach of cervical cancer screening promotion services (O'Donovan et al., 2019). Further, 45% reported a lack of confidence in talking to older women about screening. Our findings mirror previous studies that observed discrepancies in health promotion skills among community health workers in Eswatini (Geldsetzer et al., 2017; Walker et al., 2020) and other African settings (Smith et al., 2014; Glenton et al., 2021). This potentially reflects a weakness in the Swati community health workers' training model (O'Donovan et al., 2019). With the role of community health workers recently expanding to include cervical cancer screening (Ministry of Health, 2018), it is possible that relevant training programs may not yet have been implemented to support this expanded role. For example, ongoing communication and behaviour change skills training may increase community health workers' confidence in encouraging eligible women to screen (Aseyo et al., 2018).

Almost half (49%) of the study participants endorsed 'inadequate time to discuss cervical cancer screening with their clients' as a barrier. In line with this, heavy workloads associated with community health work have been reported in the literature (Johansson et al., 2010; Kardakis et al., 2014). Community health workers often work within under-supported health systems with a personnel shortage (Health Communication Capacity Collaborative, 2015).

Community health workers may also feel overburdened with the ever-increasing scope of their activities (Aseyo et al., 2018). As the number and variety of community health workers' tasks expand, preventive care tends to receive less attention than addressing acute health problems (Puett et al., 2012). Furthermore, like in Mozambique (Glenton et al., 2021), community health workers in Eswatini may have limited time to discuss cervical cancer screening with their clients due to conflicting domestic, income-generating work and community health work responsibilities.

Forty percent of community health workers in the current study endorsed women's lack of interest in cervical cancer screening advice as a barrier to discussing cervical cancer screening with their clients. Establishing strategies to enhance women's engagement with community health workers' cervical cancer screening advice is essential. Previous studies in other African countries suggest that the community's trust in community health workers is one of the critical factors influencing acceptance and uptake of community health workers' services (Rachlis et al., 2016; Grant et al., 2017; Kok et al., 2017; Anstey Watkins et al., 2021).

A third of community health workers participating in this study acknowledged that they might not discuss cervical cancer screening due to their perception that their clients lack trust in community health workers. To develop trusting relationships with their clients, community health workers should have accurate information about cervical cancer screening and maintain confidentiality (Rachlis et al., 2016). Confidentiality is particularly critical in settings like Eswatini, where community health workers are recruited from and live in their service areas (Ministry of Health, 2016; Rachlis et al., 2016; Kok et al., 2017). In addition, strong interpersonal communication and community engagement skills are likely to be helpful to community health workers in generating community interest in cervical cancer screening advice (LeBan et al., 2021).

The current study suggests that community health workers with at least some secondary school level education reported more barriers than those without secondary school level education. A higher level of education is associated with higher levels of knowledge, motivation, and competencies to access, understand, and appraise information to make judgements about health issues (Kawakatsu et al., 2015; Jansen et al., 2018). Community health workers with more education may better identify personal and health system barriers to discussing cervical cancer with their clients.

Compared to community health workers working in Hhohho, those working in Lubombo and Shiselweni endorsed fewer barriers. Consistently, community health workers working in Lubombo were less likely to endorse a barrier combination consisting of 'inability to talk to women in a way that will convince them to undertake cervical cancer screening' and 'lack of confidence to talk to older women about screening', and 'thinking that cervical cancer screening is not important' and 'thinking that health education is not effective in promoting cervical cancer screening'. Research to further explore these associations is warranted. Nonetheless, they suggest that regional differences may exist; therefore, efforts to improve cervical screening should be tailored to regions' needs and/or barriers.

Future directions

The current study provides new information about community health workers' perceived barriers to discussing cervical cancer screening with their clients. Results from this study could be used to develop and test interventions with community health workers designed to overcome barriers to the delivery of cervical cancer screening-related health promotion services in Eswatini. Future research could include qualitative research to provide more in-depth information about the identified barriers to support the development of mitigation strategies.

Strengths and limitations

The study had a high response rate (85%), reducing the likelihood of response bias. However, as we only sampled from 8 constituencies, results may not be generalisable to other areas of Eswatini.

In conclusion, our findings suggest that community health workers promoting cervical cancer screening in Eswatini face important implementation challenges. These include the perceived inability to talk to women in a way that will convince them to undertake cervical cancer screening, inadequate time to discuss cervical cancer screening with clients, lack of confidence to talk to older women about screening, and women's lack of interest in cervical cancer screening advice. Improvements to the training of community health workers with respect to cervical cancer screening-related health promotion may help address most of the identified barriers. Improving cervical cancer screening-related health promotion is a critical step, among others, toward achieving the ultimate goal of increasing cervical cancer screening rates in Eswatini.

Author Contribution Statement

Conceptualisation/design: PGK, MC, LM, and RSF. Data analysis/interpretation: PGK. Supervision: MC, LM, RSF. Drafting article: PGK. Critical revision of the article: MC, LM, RSF.

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Ethics approval

Ethical approval was obtained from the University of Newcastle Human Research Ethics Committee (H-2020-0176) and Eswatini Human Research Ethics Committee (EHHRRB062/2021) before the commencement of the study.

Availability of data

The datasets generated during and/or analysed during the current study are available from the corresponding author upon reasonable request.

Conflict of interest

The authors declare that they have no competing interests.

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