

# Perspectives of Screening-Eligible Women and Male Partners on Benefits of and Barriers to Treatment for Precancerous Lesions and Cervical Cancer in Kenya

KATHLEEN R. RAGAN,<sup>a</sup> NATASHA BUCHANAN LUNSFORD,<sup>a</sup> JUDITH LEE SMITH,<sup>a</sup> MONA SARAIYA,<sup>a</sup> MILLICENT AKETCH<sup>b</sup>

<sup>a</sup>Centers for Disease Control and Prevention, Division of Cancer Prevention and Control, Epidemiology and Applied Research Branch, Atlanta, Georgia, USA; <sup>b</sup>Kenya Medical Research Institute, Kisumu, Kenya

Disclosures of potential conflicts of interest may be found at the end of this article.

**Key Words.** Cervical cancer • Focus groups • Kenya • Perceptions • Treatment

## ABSTRACT

**Background.** Cervical cancer is the leading cause of female cancer mortality in Kenya. Kenya's National Cervical Cancer Prevention Program Strategic Plan outlines efforts to reduce the burden; however, treatment services remain limited. This study identified male and female perspectives regarding benefits, facilitators, and barriers to treatment for precancerous lesions and cervical cancer.

**Materials and Methods.** Ten focus groups were conducted in Nairobi and Nyanza in 2014 with females aged 25–49 years ( $n = 60$ ) and male partners ( $n = 40$ ). Participants were divided into groups dependent on screening status, sex, language, and geographic location. Qualitative analytic software was used to analyze transcribed and translated data.

**Results.** Treatment was endorsed as beneficial for the prevention of death and the improvement of wellness, quality of life, symptoms, and family life. Barriers reported by males and

females included the following: (a) concerns about side effects; (b) treatment-related fear and stigma; (c) marital discord; (d) financial and access issues; (e) religious and cultural beliefs; and (f) limited knowledge. Male endorsement of wanting to improve knowledge and communication with their partners, in spite of stigmatizing beliefs and misperceptions regarding females with abnormal screening results or those who have been diagnosed with cancer, was novel.

**Conclusion.** Incorporating qualitative data on benefits of and barriers to treatment for precancerous lesions and cervical cancer into Kenya's national priorities and activities is important. These findings can be used to inform the development and successful implementation of targeted, region-specific community outreach and health messaging campaigns focused on alleviating the country's cervical cancer burden. *The Oncologist* 2018;23:35–43

**Implications for Practice:** This article provides important insight into female and male partner perspectives regarding benefits, facilitators, and barriers to treatment for precancerous lesions and cervical cancer. These novel research findings can inform the development of targeted community health interventions, educational messages, and resources and aid stakeholders in strengthening strategic plans regarding treatment coverage and cervical cancer prevention. Because several treatment barriers identified in this study are similar to barriers associated with cervical cancer screening in low- and middle-resourced countries, effective messaging interventions could address barriers to receipt of both screening and treatment.

## INTRODUCTION

Cervical cancer is the fourth most common cancer and the fourth most common cause of cancer death among women worldwide, with over half a million new cases and a quarter million deaths occurring each year [1, 2]. Eastern Africa has higher cervical cancer incidence and mortality rates than any other Sub-Saharan region [1]. According to Nairobi Cancer Registry data, cervical cancer is one of the most common cancers diagnosed in Kenya and accounts for 21% of cancers among women [3]. Causing almost 2,500 deaths annually, it is

also the leading cause of cancer death among women in Kenya [1]. Lack of resources, infrastructure, and trained personnel, coupled with high costs of treatment services, continues to impede progress in addressing Kenya's cervical cancer burden.

Estimates from the Kenya Ministry of Health suggest that although approximately 300 sites provide screening services in Kenya, only 10% provide outpatient treatment services consistent with see-and-treat approaches for precancerous lesions and treatment of diagnosed cervical cancer outlined in the National Cervical Cancer Prevention Program (NCCPP) Strategic

Correspondence: Kathleen R. Ragan, M.S.P.H., C.H.E.S., Centers for Disease Control and Prevention, 4770 Buford Highway N.E., MS F-76, Atlanta, Georgia 30341, USA. Telephone: 404-718-6626; e-mail: Kathleen.Ragan@cdc.hhs.gov Received February 1, 2017; accepted for publication July 14, 2017; published Online First on August 10, 2017. <http://dx.doi.org/10.1634/theoncologist.2017-0053>

Plan (2012–2015) [4]. Individuals who are able to access screening may not also have access to treatment services, especially in underserved regions. Treatments such as Loop Electrosurgical Excision Procedure (LEEP) and cryotherapy, and staff trained in conducting them, are not widely available.

In the public sector, diagnostic and treatment options are limited to the Kenyatta National Hospital in Nairobi and to some district hospitals. There are also a limited number of pathologists in Kenya, and availability of radiotherapy in public health facilities is inadequate [4]. Although radiotherapy is available at several private hospitals, private care is expensive and unattainable for many patients [4]. Due to financial restraints, few women who are prescribed concurrent chemo/radiotherapy are able to receive recommended treatment [5]. Some women may utilize traditional medicine and low-cost herbal remedies in lieu of or in addition to medical services [5–7].

Kenya's NCCPP Strategic Plan aimed to address barriers related to cervical cancer and provided strategies to increase high quality, timely treatment services closer to screening locations; improve infrastructure and maintenance services for essential equipment; and provide health personnel with refresher training and on-the-job certification opportunities [4]. Although plans to address institutional obstacles have been developed, research is lacking in identifying barriers and facilitators to cervical cancer treatment in Kenyan communities and informing implementation of national strategies [4]. Exploration of male perspectives is particularly important because the plan also advises that in order to increase awareness and utilization of services, the development of behavior change communication strategies should involve both women and their male partners.

Research suggests that high loss to follow-up and poor treatment coverage may still occur even when aggressive strategies are used and basic infrastructure is available [8]. In preparation for the increased provision of treatment services as proposed by the NCCPP Strategic Plan, benefits, facilitators, and barriers to treatment for precancerous lesions and cervical cancer were assessed in Nairobi and Nyanza via focus groups with females and male partners.

## MATERIALS AND METHODS

Study methodology including participant recruitment, eligibility procedures, and discussion protocol questions were previously described [9]. Briefly, community mobilizers were invited by local leaders to recruit study participants from health care and community forums. Participants were given the option to immediately participate in a study screening session or participate in a session at a later date. Study selection criteria included “being a woman aged 25–49 years or a man aged  $\geq 18$  years and married to a woman aged 25–49 years, a resident of Nairobi or Nyanza, and willingness to participate in an audio-recorded focus group for up to 2 hours” [9].

Ten focus groups (6 female groups [ $n = 60$ ]; 4 male groups [ $n = 40$ ]) were held in Nairobi (urban) and Nyanza (rural). Focus group discussion guides were pilot tested prior to the implementation of the primary focus groups ( $n = 4$  males; 4 females). Focus groups were held in facilities considered to be convenient to participants, were audio-recorded, and lasted

approximately 2 hours. Travel reimbursements and a standard, culturally appropriate token of appreciation were provided.

A total of 100 participants (60 females; 40 males) were included in the study. Participant place of residence was evenly divided between Nairobi and Nyanza. All participants spoke Kiswahili, and half were Dholuo speakers. The majority of female participants (66%) and fifty percent of male participants' female partners (50%) never received a cervical cancer screening test. The mean age was 32.5 years for female participants and 37.1 years for male participants.

Participants were divided into focus groups dependent on screening test status (previous receipt of a screening test by the female participant or the wife of a male participant), sex, language, and geographic location [8]. There were 10 participants per focus group. Division criteria resulted in eight group classifications: (a) unscreened women in Nairobi ( $n = 20$ ; US-Nai women) or (b) Nyanza ( $n = 20$ ; US-Ny women); (c) screened women in Nairobi ( $n = 10$ ; S-Nai women) or (d) Nyanza ( $n = 10$ ; S-Ny women); (e) male partners of unscreened women in Nairobi ( $n = 10$ ; US-Nai men) or (f) Nyanza ( $n = 10$ ; US-Ny men); or (g) male partners of screened women in Nairobi ( $n = 10$ ; S-Nai men) or (h) Nyanza ( $n = 10$ ; S-Ny men). Informed consent was obtained from all participants. In Nairobi, discussions were conducted in either English or Kiswahili, whereas those in Nyanza were conducted in Dholuo.

## Statistical Analysis

Analysis procedures were previously described [9]. Audio recordings from each focus group were transcribed and translated into English. To ensure accuracy, all responses were back translated and team members compared transcripts to focus group notes before placing final transcripts into Microsoft Word 2013 (Microsoft, Redmond, WA, <https://www.microsoft.com/en-us>). QSR International's NVivo 10 software (QSR International, Melbourne, Australia, <http://www.qsrinternational.com>) was used for data analysis. During analysis, two themes were identified by both male and female respondents—“treatment benefits and facilitators” and “treatment barriers.” Supplemental online Appendix 1 provides the focus group moderator guide questions and treatment definitions that were used to assess these themes.

## RESULTS

### Perceived Benefits and Facilitators to Receiving Treatment

Participants generally perceived that detecting and subsequently being able to treat cancer at earlier stages, spreading awareness about treatment availability, and receiving support and encouragement from male partners to receive treatment were facilitators. Reported benefits to treatment included prevention of death and the improvement of wellness, quality of life, symptoms, and family life.

### Treatment at Early Stages and Associated Awareness

S-Nai women described treatment as beneficial and effective when cancer was detected at earlier stages. US-Nai and S-Ny men uniquely discussed the importance of spreading awareness about treatment availability, with several suggesting that women who have undergone treatment can help encourage

**Table 1.** Benefits and facilitators to cervical cancer treatment, supporting quotes by theme, Kenya Qualitative Assessment Study, 2012–2015

Theme	Supporting quote	Sex	Group	Location
Treatment availability and awareness	(q1) "There is treatment that is why you are screening people. You only screen for what is treatable, there is no use screening for what is not treatable. We should teach people that this disease is there and is treatable at an early stage."	M	S	Ny
	(q2) "Those who have had such problems are open so that they can help others. Advocating and informing others to come out and go for treatment."	M	US	Nai
	(q3) "You must be at forefront, at least help her go get treatment."	M	US	Nai
Prevention of death	(q4) "It lengthens the time I have to live."	F	US	Ny
	(q5) "When they get treatment, aahh that means the cancer will not kill her so fast, you'll still have a life."	F	US	Nai
	(q6) "It prevents death. Treatment prevents untimely death."	M	US	Ny
Wellness and quality of life	(q7) "I think they will be healed from cancer and they will live healthier."	F	US	Nai
	(q8) "When a woman is sick, she might get stressed and even start talking to herself, but when she is treated, she will feel lighter and won't be stressed."	F	S	Ny
Improvement of symptoms	(q9) "...maybe she wouldn't be smelling anymore."	F	US	Nai
	(q10) "There are stimulants that they use to reduce pain."	M	US	Ny
Family life	(q11) "It brings love because the problem that your wife had has been treated."	M	US	Ny
	(q12) "The woman's health directly affects the man, so, for your own well-being, you will want your wife to be healthy."	M	S	Nai
	(q13) "Even if my wife is under treatment I would love her to take care of her kids therefore I will let her rest until she recovers. There is nothing as good as a healthy mother."	M	S	Ny

Abbreviations: F, female; M, male; Nai, Nairobi; Ny, Nyanza; q, quote; S, screened; US, unscreened.

others to seek treatment in earlier stages (Table 1; supporting quote 1 [q1]–q3).

### **Prevention of Death**

Prevention of death as a treatment benefit was mentioned by participants in all groups, with the exception of S-Nai and S-Ny women (Table 1; q4–q6).

### **Wellness and Quality of Life**

All groups perceived treatment as a beneficial method to increasing a woman's overall wellness and quality of life (Table 1; q7, q8). Women in all groups reported that treatment can provide hope for healing and recovery from cancer. S-Nai women also expressed that treatment allows a woman to feel well so she can "continue with her duties."

### **Improvement of Symptoms**

Women in Nairobi and men in Nyanza felt that symptom improvement was another important treatment benefit. US-Nai women suggested that symptoms such as discharge, abnormal bleeding, odor, and pain would stop after treatment (Table 1; q9). Nyanza men also mentioned pain relief as a benefit (Table 1; q10).

### **Family Life**

One S-Ny woman and one S-Nai man both suggested that treatment provides women with the ability to have children. Men in Nairobi and Nyanza suggested that it was important to support

women receiving treatment because it is beneficial to one's family unit (Table 1; q11–q13).

### **Perceived Barriers to Receiving Treatment**

The majority of respondents from all groups reported treatment barriers. Common barriers reported included the following: (a) concerns about side effects; (b) treatment-related fear and stigma; (c) marital discord; (d) financial and access issues; (e) religious and cultural beliefs; and (f) limited knowledge. Only a few US-Ny men suggested that there were no barriers to treatment.

### **Side Effects**

Compared with those from Nyanza, respondents from Nairobi more routinely expressed concerns about treatment-related side effects as a barrier. Concerns about treatment being painful were primarily voiced by S-Nai women, although a few participants from Nyanza also suggested there is pain or burning after treatment (Table 2; q1, q2). Among US-Ny women, the possibility of being unable to give birth if the cervix was removed was uniquely identified as a problematic treatment-related side effect. Although not a primary theme, the possibility of ongoing bleeding after receiving treatment was a deterring factor reported in a group of S-Nai men.

Nairobi women were concerned about possible long-term effects such as those from receiving chemotherapy, including hair loss, scaly skin, extreme fatigue, inability to eat, and unknown effects within the body. US-Nai women were uniquely

**Table 2.** Barriers to cervical cancer treatment, supporting quotes by theme, Kenya Qualitative Assessment Study, 2012–2015

Theme	Supporting quote	Sex	Group	Location
Side effects	(q1) "It's very painful and even after the injections, you get very tired you cannot even eat."	F	S	Nai
	(q2) "I've heard that they usually suffer continuous excruciating pain that usually calls for very strong pain-killers."	F	US	Ny
	(q3) "From the experience I've seen, some people who have cancer are treated and it goes away, other than the psychological effects. Some are physically affected if it keeps coming."	F	US	Nai
Fear and stigma	(q4) "I think some women might get scared and they might decide to hide their result, or keep it a secret and they end up suffering alone, which definitely is not good and they might end up being depressed as she said. Yea so it would have a very negative impact on their lives, on their marriage, and their relationships with everyone."	F	US	Nai
	(q5) "They get discriminated against, people fear being close to them."	M	US	Nai
	(q6) "You will be afraid because not many people have the disease. It is not common and it is expensive to get treatment, so you will be afraid to say."	M	US	Nai
	(q7) "Some don't tell others due to stigma. When she keeps to herself, she will not be encouraged to go to hospital yet there is treatment."	F	S	Ny
Marital discord	(q8) "Also being avoided by her husband can make her not go. She will just assume that nothing is happening."	F	S	Ny
	(q9) "If he were to refuse she will view it as if she has been neglected. The man should let her know that she can go so that she would feel like they are together in it. She told you she will be going for testing and she is back with this result, you will have to encourage her to seek treatment."	M	S	Nai
	(q10) "We must encourage them because men have left women who have problems with their cervix. You find someone marrying another woman because his wife is ever complaining of stomach pains. You should encourage such women and even escort. That will encourage many women to go to such places."	M	S	Ny
	(q11) "It depends with the husband and how much they understand each other. There are men who when the wife comes with such news become violent. But if it is the kind of man who is understanding, he will treat that as a problem of the household, the wife will tell it to him and he will accept it responsibly."	M	US	Nai
	(q12) "He should invite the man because there are conditions that he would want to be met but the woman can't clearly explain to the man if they were not counseled together."	M	US	Ny
	(q13) "Mostly men do not think that they carry the disease, he thinks it is the woman who brings it, so, he will be thinking that the woman cheats on him. . . I think this affects the women but since the man has not been tested and maybe he is the one who infected her, he thinks the wife is the bad one."	M	US	Nai
Abstinence	(q14) "Yes it may be your decision, but sex is a two way, you'll have to convince your husband."	F	US	Nai
	(q15) "Women can take long without sex, but men can't so men should be involved. Even if we insist that we make independent decisions we still must involve them."	F	S	Ny
	(q16) "If it is your wife undergoing treatment, ah, you won't be having intercourse, you might find the man having extra marital affairs, this will bring problems."	M	US	Nai
	(q17) "She can ask me not to have sex with her, but I cannot accept unless I am told by the doctor."	M	US	Ny
	(q18) "It is we men who should lead in creating a harmonious atmosphere in the house. You should dialogue with your wife. Sometimes she sneaked and went for treatment without your knowledge yet you want sex. This is where sneaking brings problems because she has been scraped off and new cells need to grow yet the husband doesn't know."	M	S	Ny
	(q19) "I will accept even if she sneaked. Let us leave old cultures that say you must sleep with your wife during planting season."	M	S	Ny

(continued)

**Table 2.** (continued)

Theme	Supporting quote	Sex	Group	Location
Financial concerns	(q20) "The treatment is expensive so even if I was diagnosed with cervical cancer, I'll just go home and wait for the day a miracle occurs for me to get treatment."	F	US	Nai
	(q21) ". . .in Nairobi, especially in the slums, so many people has the information that when they go to SHOFCO, CDC they can be helped. . .but in the villages, so many people don't have the money to get treatment."	F	S	Nai
	(q22) "The spirit is willing so we will pay if there are resources. Nobody can let his wife die. Someone just dies because there is no alternative."	M	S	Ny
Access issues	(q23) "You can sometimes find when there is a long line but the treatment machine is accessible, going to Kenyatta is expensive. It is easy here because if it is discovered at precancerous stage you can be booked and you finish the procedure in one or two months."	F	S	Ny
	(q24) "If the venue for treatment is far away, she might decide to go for traditional medicine instead."	M	S	Nai
	(q25) "I might want to do it but the person doing it might not be there or the things needed to do it might not be available."	F	S	Ny
	(q26) "There are some CHW, they are also nurses in hospitals, so they'll try to treat them but not all community members will trust them, they consult."	F	US	Nai
Religion and culture	(q27) "There are religions that believe that only Jesus can heal a sick person. So everything is left to God."	M	S	Ny
	(q28) "Some people who get such results can refuse to go to the hospital and resort to traditional medicine. After a short time you hear that the disease has advanced and she is bed ridden."	F	S	Ny
	(q29) "We should try all those ways of advising and treating them, we should explain to them that no illness is so impossible for God to treat, all things are possible with God."	F	S	Nai
Knowledge about treatment	(q30) "Yea, but the treatment, is it it's not as if you are really treated. Actually it's prevention. It just reduces the cells but you will never be healed right? Sometimes, they always kill the cells. . . Definitely by the time you already have it, it's not at the early stage and can't be treated."	F	US	Nai
	(q31) "A woman who has turned positive for cervical cancer will be shocked because of what she has heard that cancer has no drugs and treatment is expensive. She will not have hope in life and such thoughts will destroy her health."	F	S	Ny
	(q32) "They think, they'll waste money but eventually, you still die that's why they won't treat you."	F	US	Nai
	(q33) "I think the whole treatment depends with how large the cancer is. In most cases they will do surgery and remove the part and in extreme cases the whole uterus is removed. The advice on treatment will come after testing."	M	S	Nai
	(q34) "Cancer treatment is impossible unless the affected organ is removed. If you don't remove the affected organ you can't treat cancer."	M	US	Ny

Abbreviations: CDC, Centers for Disease Control and Prevention; CHW, community health workers; F, female; M, male; Nai, Nairobi; Ny, Nyanza; q, quote; S, screened; SHOFCO, Shining Hope for Communities; US, unscreened.

concerned about psychological effects and reported that women become "sickly" once they start chemotherapy and are deterred from undergoing treatment because it "seems like a gruesome affair" (Table 2; q3).

### **Fear and Stigma**

Across most groups, participants endorsed fear of the overall treatment process as a barrier. For many, feelings of fear were related to cultural stigma, such as the belief that having cancer suggests a woman may also have a sexually transmitted infection or has been unfaithful. Nairobi women reported fear that stigma could occur when women who are receiving treatment are seen in the hospital or out in

the community and they have noticeable side effects of treatment (e.g., hair loss). According to them, implications of this might include having others talk negatively about treated women and their spouses, being told that they will not be able to acquire a husband because they are sick, or losing friends who would be embarrassed to be seen around someone undergoing treatment.

US-Nai women seemed more concerned about stigmatization than screened women and were more likely to discuss negative stigma-related psychosocial impacts. They expressed that fear and stigma can lead to diminished self-confidence, negative attitudes, depression, hiding results, and a general fear of "facing society" (Table 2; q4). Women might also believe that

they will become a burden to the community and their family members because they need expensive treatment.

US-Nai women and men endorsed difficulties with talking about treatment without being gossiped about or experiencing discrimination (Table 2; q5). Additionally, men suggested that because “the community relates cancer to human immunodeficiency virus (HIV) infection,” people might assume that those with cancer will also have HIV. Nyanza participants echoed concerns expressed by those in Nairobi regarding keeping treatment a secret (Table 2; q6, q7).

### **Marital Discord**

All groups expressed concerns about treatment causing problems within families and between partners, primarily related to fear of marital discord, separation, and lack of spousal support or approval. Consequently, some women may not consult with their husbands when considering treatment. According to male and female respondents, after a woman has received a positive screening result, their partner is not always accepting or supportive of the woman receiving treatment (Table 2; q8). Even though some men suggested they would support their partner and help them seek treatment, other participants raised many concerns (Table 2; q9, q10).

According to one S-Nai woman, a woman might be unable to get treatment because the “husband will refuse.” Nairobi men were specifically concerned with the need for wives to talk to husbands about their diagnosis and their desires to receive treatment (Table 2; q11). They suggested, however, that women should be cautious, because some husbands would not be understanding, may become “violent,” and/or require that a doctor explain the situation to them directly (Table 2; q12). According to them, if treatment involved surgery, they would need to be present in order to provide signed approval or consent.

Nairobi men also reported that women who do not discuss treatment options with their husbands or secretly receive services could be perceived as cheating (Table 2; q13). Similarly, Nyanza men suggested that women who receive treatment without their husband’s knowledge may be viewed as behaving “contrary to your word,” which can result in blame, heated arguments, or separation.

### **Abstinence**

Nairobi and Nyanza women expressed concerns about the ability to remain abstinent and reported that marital discord occurs when women are instructed to abstain from sexual intercourse after treatment (Table 2; q14). One US-Nai woman believed that if she were undergoing treatment and had an understanding spouse, they would “know the need to not have sex,” although another suggested that treatment is “destructive to family life.” According to one S-Nai woman, challenges may arise because “the husband might look for other ladies to satisfy.”

Nyanza women expressed that husbands might become hostile, blame the women for getting treatment that results in a need for temporary abstinence, accuse them of having a sexually transmitted disease, or “chase them away” if he thought she might be unable to have children as a result of treatment. Some women reported that they would be able to abstain until “health is restored,” but others suggested they would only be

able to abstain if a medical provider directed them to in the presence of their husband (Table 2; q15).

Nairobi men had differing opinions about women needing to abstain from sex. Some suggested that they would have to abstain because “whatever affects them affects the whole family,” so they would “just persevere” while their wife healed. Others, however, suggested that men wouldn’t care if their wife had been treated and would still “insist on sex” or end up having affairs (Table 2; q16). Nairobi and Nyanza men suggested that they would be more likely to practice abstinence if their wives consulted with them, they were present at their wives’ appointments, and they were able to speak with a doctor and receive documentation about the treatment and recovery process (Table 2; q17–q19).

### **Financial Concerns**

All groups discussed financial barriers, primarily regarding lack of money and expensive treatment costs (Table 2; q20). One S-Nai woman suggested that the family might be affected if they have no money to take the woman to treatment, and another alluded to socioeconomic disparities (Table 2; q21). Men from all groups mentioned the importance of doctors involving partners because they will bear transport and treatment costs.

Nairobi men suggested that a husband is more willing to support his wife financially if he is knowledgeable about cancer and aware that his wife is suffering, especially when he benefits from his wife becoming healthy and able to continue bearing children and fulfilling domestic duties. According to S-Ny men, there is a cost advantage when cancer is discovered early because the treatment would be less expensive. Nyanza men also expressed that even if men want to pay for treatment, they may not be financially able to do so (Table 2; q22).

### **Access, Personnel, and Resource Issues**

Although a few S-Nai and S-Ny women mentioned that they could easily access treatment, the majority of respondents raised multiple access barriers (Table 2; q23). Distance to a treatment facility was a barrier mentioned by all Nairobi groups, S-Ny women, and US-Ny men (Table 2; q24). Not knowing where to get treatment, if it was available at all, and if treatment was available at the same locations where screening tests were offered were barriers reported by US-Ny men. US-Ny men also suggested that women would likely seek treatment services at nearby mobile clinics or dispensaries, but that having to go to a “screening dispensary” to get a referral to receive treatment at a different location was a barrier.

Nyanza and Nairobi women identified the lack of personnel able to provide treatment services as a substantial barrier to women seeking treatment (Table 2; q25). The importance of equipment availability in local hospitals was mentioned by a US-Nai man. US-Nai women expressed concerns about health personnel possessing a high level of expertise and the lack of trust in community health workers even though they may provide cheaper services (Table 2; q26).

In addition to physical access issues, barriers related to time required for treatment were also of concern for most groups. US-Nai women commented that treatment can be an “inconvenience to lifestyle in terms of time” and also “in terms of the process that you have to go through.” S-Ny women suggested that lack of time is a barrier and that the process can take

up 2 months. When men were asked about how long it takes for a woman to heal after treatment, most commented that they didn't know, and one S-Nai man suggested that it takes 3 months. One S-Ny man suggested that it depends on a woman's immune system because a weakened immune system leads to a slow recovery, especially if she has other diseases like diabetes.

### **Religion and Culture**

Reliance on God and/or traditional beliefs in lieu of utilizing westernized medicine and treatments was endorsed as a barrier by all groups except US-Nai women and US-Ny men. Nyanza participants identified religion as a barrier because some churches don't want and/or don't allow treatment (Table 2; q27, q28). Similarly, Nairobi participants suggested that some churches don't believe in treatment and some women believe "traditional healers can solve her problems" and might rely on "witch doctors" or cultural treatment methods that would be contrary to treatment regimens prescribed by medical doctors (Table 2; q29).

### **Knowledge About Treatment**

Beliefs that no treatments for cancer are available, that cancer caught in late stages can't be treated, or that treatments aren't effective can prevent women from seeking health services (Table 2; q30). US-Nai women indicated that this may be especially true where "people in [the] community don't know anything about cancer" and "everybody believes cancer can't be treated." Due to lack of knowledge about treatment, women diagnosed with cervical cancer may have fatalistic views (Table 2; q31). S-Nai, US-Nai, and US-Ny women endorsed fatalism, expressing that women might think that their life is "meaningless" and "has come to an end," or that treatment is not worth the expense (Table 2; q32). S-Ny women implied that many women do not seek treatment, with one commenting that "very few come back after screening, but [the] majority disappear."

Nairobi men alluded to treatment being dependent on cancer stage and that, in some cases, the "affected area can be totally removed" (Table 2; q33). One S-Ny man said he had heard that "cancer can be burnt away," and others suggested they had heard of treatment, but weren't sure how it was done or that the only treatable cancers are the "ones that affect women." One respondent, however, commented that "most cancers when discovered early are treatable." Similarly, among US-Ny men, some believed cancer was not treatable, others suggested that to treat cancer, "you must remove the organ that is cancerous," and one commented that drugs are available for treatment (Table 2; q34).

## **DISCUSSION**

Respondents viewed treatment as beneficial and believed it could improve symptoms, prolong life, and allow a woman to be well for her family. Reported concerns about treatment side effects were consistent with studies showing treatment perceptions involving unbearable pain [10] and eliminating a woman's ability to have children [11, 12].

Findings that women rarely discussed their cancer diagnosis or elected to get treatment due to fear of stigma strengthen research identifying cervical cancer-related psychosocial challenges [12]. Because stigma may be more prevalent in communities lacking appropriate educational information, it is not

surprising that participant reports of limited discussion about cervical cancer and related treatment coincide with limited information and misinformation among community members. Because misinformation about cervical cancer and its relationship to and difference from other diseases (e.g., HIV/AIDS) was routinely reported, opportunities to reduce stigma may include the provision of accurate educational messaging resources.

Previous studies have reported concerns of marital discord occurring after a woman informs her husband that she has cervical cancer [9, 11]. We uniquely found that male and female participants' concerns about the need to abstain from sexual intercourse while a woman is undergoing treatment, doctors not discussing the treatment process with husbands, and women's fear of marital discord can negatively impact their decision to seek treatment.

Concerns about economic strain and resources to pay for treatment, medications, and transportation align with previous studies associating cost with a patient's decision to seek or continue treatment [5, 8, 10, 12–14]. One such study found that even when free services were offered to patients, significant barriers still existed due to expenses required to reach referral hospitals [8]. Patients who are unable to afford treatment may end up waiting for long periods; receiving basic care instead of full, recommended treatment; starting treatment at a later stage; choosing to forgo treatment; or dying before beginning treatment [12, 13]. Concerns about seeking treatment and burdening family members also support previous research [10, 12].

Findings regarding reported transportation difficulties, long waits, issues with referrals, healthcare workers' lack of expertise, and shortages of personnel and equipment were consistent with previous studies [5, 7, 8, 12–14]. One such study supports our findings by reporting that providers are challenged with high patient workload, mismanagement of referrals, and inadequate treatment and inpatient facilities and staff specialized in cancer care, which exacerbate delays in timely treatment and poor patient prognosis [13]. Strategies to address these barriers may include the addition of treatment services within or nearby screening facilities, trained personnel, rural facilities, and transportation assistance or incentive programs. Alongside infrastructure investment, constructing an effective referral pathway among health care practitioners may alleviate access barriers [5, 14]. With this foundation, women with premalignant cervical lesions could ideally have cost-effective and timely access to preventive and early treatment through immediate cryotherapy or LEEP based on visual inspection with acetic acid (VIA) or visual inspection with Lugol's iodine (VILI) results [5, 14].

Most groups identified reliance on God and/or traditional beliefs and religious-based medical objections as barriers; however, research exploring these barriers to seeking cervical cancer treatment in Kenya is limited. Studies have reported that cancer patients often rely on religious beliefs for comfort and emotional support [10], view a cancer diagnosis as impending death that is under God's control [10], and experience recurrent anxiety and fear of death, which also affects their caregivers [12]. Studies have also shown that people diagnosed with cancer may forgo medical treatment and rely on traditional medicines and herbs [6, 15], although outcomes do not appear to differ for those who used herbal treatments compared with those who did not [5]. An additional study revealed that some women credit their late cancer diagnosis to the utilization of

herbalists or complementary alternative medicine practitioners who often discourage seeking formal health care, subsequently delaying correct diagnoses and initiation of early treatment [14]. Religious and cultural barriers may be alleviated through outreach about the importance of seeking early medical care for improved quality of life and chance of survival [14].

Findings regarding knowledge barriers and beliefs about treatment being unavailable, expensive, and ineffective were consistent with previous studies [10, 11, 13]. Educational campaigns focused on emergent focus group discussion themes and materials that differentiate between treatment types (e.g., options depending on cancer stage) may help address knowledge gaps. Tailored efforts can help ensure people are knowledgeable about regional availability of treatment services and treatment not always being available through the same doctor and/or location where they may have received screening.

This research uniquely examines Kenyan male partner perspectives of cervical cancer treatment. The segmentation of respondent perceptions by geographic region and screening status is also novel. Results may not be generalizable to geographic regions outside of Nairobi and Nyanza in Kenya, where participants were recruited. Participant treatment knowledge was possibly higher than in other locations given increased treatment availability in study locations. However, due to lack of educational resources, knowledge regarding post abnormal screening test interventions is limited; therefore, a broad definition of treatment was used. Due to the small scale of this study, we were not able to further segment by additional participant characteristics (e.g., HIV status) and maintain a sufficiently powered sample. Despite these limitations, treatment barriers identified in this study may represent regions of Kenya with similar cultural, religious, or behavioral norms.

## CONCLUSION

Several treatment barriers identified in this study are similar to barriers associated with cervical cancer screening, such as knowledge gaps, religious or cultural beliefs, spousal approval, stigma, and access to services [9]. Although the NCCPP Strategic Plan promotes see-and-treat approaches for precancerous lesions and treatment of diagnosed cervical cancer, the majority of screening clinics lack treatment services [4]. Thus, effective messaging interventions should strategically address barriers to receipt of screening and treatment dependent on target locations and populations. Community outreach through the 12,338 estimated cervical cancer survivors in Kenya may help dissipate the common belief that cancer is not survivable [2]. Additionally, it is important for health personnel to discuss comparisons between treatment for cervical cancer versus treatment for chronic conditions (e.g., diabetes) and infectious diseases (e.g., HIV). Although dissemination of information about cancer and treatment options is crucial,

careful consideration about psychosocial implications is needed when communicating about treatment options in regions where services may not be available. Adherence to the NCCPP Strategic Plan, coupled with targeted health messaging based on the findings from this study, could help prevent cervical cancer deaths [1].

## ACKNOWLEDGMENTS

We thank and acknowledge Katherine Roland, Dr. Nikki Hawkins, Dr. Eileen Dunne, Allison Friedman, Dr. Sara Forhan, Dr. Kayla Lasserson, David Baden, and Dr. Muthoni Gichu for their technical assistance and contributions in proposing the KEMRI/CDC Cervical Cancer Assessment Study. We would also like to thank KEMRI staff and contractors who served as administrators, moderators, note takers, transcribers, and social mobilizers during the course of the KEMRI/CDC Cervical Cancer Assessment Study. These individuals include Juma Ouma Robert, Irene Nduku Kioko, Kennedy Anjejo, Amondi Cynthia Barbara, Diana Muushiya, Chebchi Khoyi, Issac Ojino, Steve Wandiga, Winston Ajielo, Frank Odhiambo, Jonathan Kipchoge, Joan Lelei, Faith Maingi-Githui, and Cynthia Osanya.

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention, Kenya Medical Research Institute, or Oak Ridge Institute for Science and Education. The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention. This original manuscript utilizes data whose collection was funded by the Centers for Disease Control and Prevention through the KEMRI/CDC/CGH/OD Cooperative agreement #1U01GH000048-03. Kathleen Ragan's role as an author of this manuscript was also supported, in part, by her appointment to the Research Participation Program at the Centers for Disease Control and Prevention administered by the Oak Ridge Institute for Science and Education through an interagency agreement between the U.S. Department of Energy and CDC.

## AUTHOR CONTRIBUTIONS

**Conception/design:** Natasha Buchanan Lunsford, Judith Lee Smith, Mona Saraiya

**Provision of study material or patients:** Natasha Buchanan Lunsford, Judith Lee Smith, Mona Saraiya

**Collection and/or assembly of data:** Millicent Aketch

**Data analysis and interpretation:** Kathleen Ragan, Natasha Buchanan Lunsford, Millicent Aketch

**Manuscript writing:** Kathleen Ragan, Natasha Buchanan Lunsford, Judith Lee Smith, Mona Saraiya, Millicent Aketch

**Final approval of manuscript:** Kathleen Ragan, Natasha Buchanan Lunsford, Judith Lee Smith, Mona Saraiya, Millicent Aketch

## DISCLOSURES

The authors indicated no financial relationships.

## REFERENCES

1. Ferlay J, Soerjomataram I, Ervik M et al. GLOBOCAN 2012 v1.0, Cancer incidence and mortality worldwide: IARC CancerBase No. 11. Available at <http://globocan.iarc.fr>. Accessed July 24, 2017.
2. Bray F, Ren JS, Masuyer E et al. Global estimates of cancer prevalence for 27 sites in the adult population in 2008. *Int J Cancer* 2013;132:1133–1145.
3. Korir A, Okerosi N, Ronoh V et al. Incidence of cancer in Nairobi, Kenya (2004–2008). *Int J Cancer* 2015;137:2053–2059.
4. Kenya Ministry of Health. National Cervical Cancer Prevention Program: Strategic Plan, 2012–2015. In: Kidula NA, ed. Nairobi, Kenya: ACCESS Uzima Program, 2011.
5. Maranga IO, Hampson L, Oliver AW et al. Analysis of factors contributing to the low survival of cervical cancer patients undergoing radiotherapy in Kenya. *PLoS One* 2013;8:e78411.
6. Ochwang'i DO, Kimwele CN, Oduma JA et al. Medicinal plants used in treatment and management of cancer in Kakamega County, Kenya. *J Ethnopharmacology* 2014;151:1040–1055.



7. Chirenje ZM, Rusakaniko S, Kirumbi L et al. Situation analysis for cervical cancer diagnosis and treatment in east, central and southern African countries. *Bull World Health Organ* 2001;79:127–132.

8. Khozaim K, Orang'o E, Christoffersen-Deb A et al. Successes and challenges of establishing a cervical cancer screening and treatment program in western Kenya. *Int J Gynaecol Obstet* 2014;124:12–18.

9. Buchanan Lunsford N, Ragan KR, Lee Smith J et al. Environmental and psychosocial barriers to and benefits of cervical cancer screening in Kenya. *The Oncologist* 2017;22:173–181.

10. Murray SA, Grant E, Grant A et al. Dying from cancer in developed and developing countries: Lessons from two qualitative interview studies of patients and their carers. *BMJ* 2003;326:368.

11. Friedman AL, Oruko KO, Habel MA et al. Preparing for human papillomavirus vaccine introduction in Kenya: Implications from focus-group and interview discussions with caregivers and opinion leaders in Western Kenya. *BMC Public Health* 2014;14:855.

12. Ngutu M, Nyamongo IK. Exploring the barriers to health care and psychosocial challenges in cervical cancer management in Kenya. *Int J Womens Health* 2015;7:791–798.

13. Kivuti-Bitok LW, Pokhariyal GP, Abdul R et al. An exploration of opportunities and challenges facing cervical cancer managers in Kenya. *BMC Res Notes* 2013;6:136.

14. Korir AR. Barriers to Early Diagnosis of Invasive Cervical Cancer Among Patients Receiving Treatment at Kenyatta National Hospital, Nairobi Kenya [master's thesis]. Nairobi, Kenya: Kenyatta University; 2014.

15. Muthoni A, Miller AN. An exploration of rural and urban Kenyan women's knowledge and attitudes regarding breast cancer and breast cancer early detection measures. *Health Care Women Int* 2010;31:801–816.



See <http://www.TheOncologist.com> for supplemental material available online.

#### For Further Reading:

Geneva DeGregorio, Simon Manga, Edith Kiyang et al. Implementing a Fee-for-Service Cervical Cancer Screening and Treatment Program in Cameroon: Challenges and Opportunities. *The Oncologist* 2017;22:850–859.

#### Implications for Practice:

The Cameroon Baptist Convention Health Services Women's Health Program successfully implemented a nurse-led, fee-for-service cervical cancer screening program using visual inspection with acetic acid-enhanced by digital cervicography in the setting of a large faith-based health care system in Cameroon. It is potentially replicable in many African countries, where faith-based organizations provide a large portion of health care. The cost-recovery model and concept of offering multiple services in a single clinic rather than stand-alone "silo" cervical cancer screening could provide a model for other low-and-middle-income countries planning to roll out a new, or make an existing, cervical cancer screening services accessible, comprehensive, and sustainable.