

Pioneering study shows that local volunteers increase early breast cancer detection rates in a low-income rural area

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The study, published in *The Lancet Oncology*, is the first ever assessment of the effect of cancer screening in rural sub-Saharan Africa, and the authors are hopeful that their work, which is on-going, will ultimately show that the increase in early detection of breast cancer results in improved long-term survival chances for women who are screened.

A group of researchers led by Dr Sulma Mohammed, of the University of Gezira in Sudan and Purdue University in the USA, compared rates of [breast cancer detection](#) in two different counties of Gezira State, Sudan. Both counties were remote from modern health-care facilities, had a large proportion of the population employed in agriculture, and had little general awareness of cancer in the population. Keremet county was randomly selected for implementation of [breast screening](#), whereas Abugota county was used as a control, with no screening taking place.

In Keremet, the researchers met with village leaders and provided them with information about cancer and its socioeconomic effects on their community, as well as discussing a simple screening programme for [breast cancer](#), whereby local women would be trained to detect the disease in other women, at no financial cost to the village. Leaders were then invited to choose suitable candidates for training, on the basis of [educational attainment](#) and perceived competency to do the task. All of the 35 villages targeted agreed in principle to take part, with 29 villages eventually sending volunteers to undertake a five day intensive training

course.

The training course was given by health-care workers and included sessions on the biology of cancer, [cancer risk factors](#), the importance of early detection, and how to examine breasts for abnormalities. When the volunteers had been trained and their village leaders had agreed that screening could commence, a cancer awareness programme was also launched in each participating village, where the volunteers' tasks of home visits and breast examinations were carefully explained, and both male and female villagers were educated about breast cancer and the importance of early detection.

Between January 1, 2010 and October 10, 2012, 10 309 women – 70% of the total female population of Keremet county – were screened. As a result of screening, 138 women were referred directly to the nearest specialist cancer centre. 101 of these were diagnosed with benign lesions and given appropriate treatment; 12 were diagnosed with either breast cancer or ductal carcinoma in situ (DCIS), which was subsequently successfully treated, with no signs of progression at the last date of follow-up. 20 of the women referred to the specialist centre did not attend, two of the women diagnosed with breast cancer refused treatment, and two had advanced disease at the time of referral and died. A further woman was already aware of her diagnosis and receiving treatment elsewhere.

By comparison, just four women from Abugota county referred themselves to the cancer centre during the study period; one had a benign lesion, and the other three had advanced disease which was treated, with one woman going into remission and the other two not responding to treatment, with poor prognoses at the time of final follow-up.

According to lead author Dr Mohammed, "Breast cancer is the second

leading cause of death in women in Africa, and although high-income countries are seeing a decline in deaths cause by the disease, due to improved screening and treatments, sub-Saharan African countries do not have the resources, infrastructure or trained personnel to undertake effective treatment and screening programmes like those in high-income countries."

"Most women with breast cancer in low-income and rural areas of Africa, such as Sudan, do not present at specialist medical centres until the disease is already at an advanced stage, meaning that treatment is often too late. As such, earlier detection of breast cancer in [women](#) from these areas should allow significant improvements in the treatment of the disease, and ultimately in their overall survival."

In a linked Comment, Dr Eugenio Panieri of the University of Cape Town, South Africa, welcomes the study, adding that, "To comprehensively deal with breast cancer in such low-income settings, much more will be needed than just willing volunteers and educational campaigns, but to attempt tackle the problem without these interventions would be to omit a cheap, logical, and effective first step."

More information: [www.thelancet.com/journals/lan... \(12\)70583-1/abstract](http://www.thelancet.com/journals/lan... (12)70583-1/abstract)

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