Dear Editor-in-Chief,

Re: Breast cancer screening in a resource poor country: ultrasound versus mammography by Omidiji O.A.T, Campbell P.C, Irurhe N. K, Atalabi O.M and Toyobo O.O *Ghana Med J* 2017;51(21):6-12
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We have read the article entitled "Breast cancer screening in a resource poor country: ultrasound versus mammography[1], published in the Ghana Medical Journal (2017; 51 (1): 6–12). We want to congratulate the authors for this successful article, and make some contributions.

In the article it has been indicated that the sensitivity of ultrasound compared with mammography in the detection of breast lesion was 100%. However, the systematic random sampling technique of selection for the 300 patients was not described. Seven women had ductal carcinoma in-situ (DCIS) and one invasive ductal carcinoma (IDC). This very high prevalence of DCIS or IDC in women predominantly 30-39 years of age represents a very high prevalence of disease strongly suggestive of major selection bias. In addition, not all DCIS progresses to invasive breast cancer and it is only the sensitivity to detect invasive breast cancer that can be used to predict the impact of screening. There were too few women with DCIS or invasive cancer to enable precise measures of sensitivity to be calculated. The authors did not make clear whether verification of the results of the index texts was performed using a gold standard and whether this was done for all subjects. If disease status is not ascertain for all study subjects, verification bias may occur which can result in overestimation or underestimation of the sensitivity of ultrasound. The authors have also failed to mention that the lower sensitivity reported for mammography might be due to the high proportion of younger women included in the study since ultrasound is mostly complementary to mammography for dense breasts which is common in younger women. There is little evidence to support the use of ultrasound as the first line of screening tool for breast cancer in rural areas.

Reference

1. Omidiji O.A.T, Campbell P.C, Irurhe N. K, Atalabi O.M and Toyobo O.O Breast cancer screening in a resource poor country: ultrasound versus mammography Ghana Med J 2017;51(21): 6-12.

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Conflict of interest: None disclosed

Response by authors:

Thank you so much for your interest and thorough evaluation of our article.

A minimum sample size of 300 was calculated using the Buderer's formula for sensitivity. Every second eligible patient who met the inclusion criteria was recruited into the study. The first participant was selected by balloting and every second participant selected until the desired number was reached.

The participants were randomly selected and results documented as shown. Moreover studies have shown that the awareness of younger women about breast cancer has increased and perhaps may cause them toseek more medical attention compared with the older age group due to breast cancer campaigns in schools, market places and religious organizations.

DCIS is also referred to as early breast cancer and is treated by surgery, radiation and chemotherapy (tamoxifen) to prevent it from becoming invasive. In our centre, mastectomy is the surgical procedure of choice rather than lumpectomy, hence our inclusion of the cases in the data.

This was noted in our earlier write-ups as a limitation. We agree that the cases were few but we had to work with the figures we had. We are however planning a larger scale, multicenter study that will perhaps give a more precise measure.

Majority of the participants however had normal index tests with no lesion to biopsy. Others had obviously benign lesions such as breast cysts. Our standard in our hospital is that only suspicious lesions (BIRADS 3 and above) are subjected to the gold standard (histology). The index tests are taken as gold standard with normal or benign lesions.

The study does appear skewed toward the 30 – 39 age group, however as noted in the study, fatty parenchyma (BIRADS A and B) predominated across all age groups. This has also been noted in other African studies, as discussed in the article. Majority of the women who had breast cancer in the 30 – 39 age group also had fatty breasts, as shown in the Table 4.

As mentioned earlier, studies are underway to assess more women in the older age group using both ultrasound and mammography.

Based on our findings, there is some evidence. The findings may not be generalized, as a much more large sample size is required and better still if a multicenter approach is done. This is however a preliminary study and a multicenter study with a larger sample size may alter the findings in the study. The findings are however useful for our local use and further studies are on going.

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