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# SITUATIONAL ANALYSIS FOR DIAGNOSIS AND TREATMENT OF CERVICAL CANCER IN MAINLAND TANZANIA

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## ABSTRACT

***Objective:*** **To determine factors influencing early diagnosis and treatment of cervical cancer in Tanzania women.**

***Design:*** **A cross-sectional study.**

***Setting:*** **Forty primary health care facilities, twenty district/regional and four referral (tertiary) hospitals in mainland Tanzania.**

***Results:*** **The most basic equipment for cytology-based cervical cancer were available at all health care facilities. However, screening against cervical cancer was appallingly inadequate at all levels of health care delivery system. Apart from medical doctors at tertiary level, other medical personnel including nurses were poorly or hardly utilised for cervical cancer screening. Treatment facilities for pre-cancerous lesions in most district, regional and even tertiary hospitals were inadequate or non-existent despite being very simple, cheap and yet very effective. There was total lack of organised institutional or national policy guidelines on cervical cancer screening in Tanzania.**

***Conclusion:*** **There is an urgent need to introduce systematic screening against cervical cancer and treatment of precursor lesions at all levels of health care delivery system in Tanzania. A national policy guideline should be urgently drawn addressing specifically frequency of screening and at what age to start screening.**

## INTRODUCTION

Invasive cervical cancer is the commonest malignant tumour affecting women in developing countries. It is the leading cause of cancer-related deaths among women(1). In Tanzania, cervical cancer is a major health problem although its magnitude is unknown. The available scanty data put estimates ranging from 5/100,000 to 20.1/100,000 or more(2).

Review of 2911 cases of gynaecological admissions in Muhimbili Medical Centre, the National Referral Hospital during the year 1997, revealed that 932 (32%) were admissions due to cervical cancer. This was the leading cause of all gynaecological admissions(3).

In Ocean Road Cancer Institute where all patients with invasive cancers are referred for radiotherapy and chemotherapy showed that between 1992 - 1994 of all in patients 45% were due to cervical cancer.

This is a "tragedy" because cervical cancer is today almost totally preventable. Most invasive cervical cancers can be prevented by screening for and treating asymptomatic precursors of invasive cervical cancer. Tanzania together with other countries in East, Central and Southern Africa conceded that cervical cancer as a disease deserved urgent attention so as to facilitate planning of services in areas of prevention, early diagnosis and treatment.

## MATERIALS AND METHODS

This was a cross-sectional study which was conducted over a period of three months beginning in August 1997. Pre-trained medical students using interview administered questionnaires were used to collect data from randomly selected dispensaries, health centres, district, regional and referral hospitals. The questionnaire focussed on issues pertaining to diagnostic and treatment facilities, human resources, treatment modalities, communication and existing referral structure for cervical cancer patients. Onsite observational visits to all selected institutions were recorded being guided by a pre-designed check list to document existing facilities for screening, diagnostic facilities, communication and treatment procedures available.

**Table 1**

***Sampling distribution of health facilities surveyed.***

| Institutional level | Existing facilities | Selected facilities |
|---|---|---|
| Tertiary | 4 | 4 |
| Regional | 17 | 16 |
| District | 63 | 8 |
| Health centre | 103 | 32 |
| Dispensaries | | |
| Total | 187 | 64 |
| Population | 20 million people | |

For each of the health care level selected at least one health worker was interviewed.

(i) Dispensary and Health Centre - Person in-charge

(ii) District and Regional Hospitals - Medical officer in-charge or specialist gynaecologist.

(iii) Tertiary Hospitals - Specialist gynaecologist and hospital administrator

*Data management*: All questionnaires were counter checked by the principal investigator, and coded before entry into the computer. Analysis was done using the Epi-Info programme.

## RESULTS

The study was carried out in thirty two dispensaries, eight health centres and twenty district/regional hospital and all four tertiary (referral) hospitals.

Table 2 shows that over 95% of the dispensaries and health centres in the country are equipped with a speculum with which they can inspect the cervix. Sixty seven per cent of the health workers are aware of what a Pap smear was but only four per cent of staff could perform a Pap smear. Well over 70% of the staff had seen frank cervical cancer in the preceding year.

**Table 2**

*Distribution of diagnostic facilities at dispensary and health centres in Tanzania*

| Diagnostic facility | | N = 40 N | % |
|---|---|---|---|
| • Equipment for cervical examination | | 38 | 95 |
| • Average number of staff performing speculum examination | YES | 4 | 10 |
| • Know about Pap smear? | YES | 25 | 67 |
| When did you past perform a Pap smear? | | | |
| • last six months | | 0 | 0 |
| • last 12 months | | 0 | 0 |
| • last 24 months | | 8 | 22 |
| • Average number of staff able to perform a Pap smear | | 3 | |
| • Who does the Pap smear screen | | – | |
| – Medical Assistant/Clinical Officer | | 1 | |
| – Registered nurse | | 0 | |
| – Auxiliary | | 0 | |
| • Average number of Pap smear per month | | 1 | |
| • Where are Pap smear | | | |
| – District hospital | | 0 | |
| – Regional hospital | | 0 | |
| – Referral/Tertiary hospital | | | |
| Have you seen a case of frank Ca cx? | YES | 30 | 75 |

Table 3 shows that on the average, there are eight trained staff at the dispensary/health centre level.

**Table 3**

*Staff distribution at dispensary and Health Centres (n=40)*

| Human resource | N | % |
|---|---|---|
| Average trained staff per clinic | 8 | 20 |
| Level of training | | |
| Nurse | 6 | 15 |
| Medical Assistant/Clinical Officer | 0 | 0 |
| Registered nurse | 2 | 5 |
| Auxiliary | 2 | 5 |

**Table 4**

*Referral system at primary health care level*

| Action taken for abnormal smear | Referral | N=40 N | % |
|---|---|---|---|
| | • No action | 0 | 0 |
| | • Treat | 0 | 0 |
| | • Refer | 18 | 41 |
| Where referred | • District hospital | 4 | 10 |
| | • Regional hospital | 2 | 5 |
| | • Tertiary hospital | 1.9 | 48 |

Forty one per cent of PHC would refer patients with abnormal smear results to a higher level mostly the tertiary hospitals. The referral system was reported to be working well by 90% of the PHC facilities.

**Table 5**

*Source of information on cervical cancer at PHC (n=40)*

| Information | N - 40 N | % |
|---|---|---|
| • Is there any health information on Ca Cx Yes | 2 | 5 |
| • Any Counselling service at the time of screening | 4 | 10 |
| • How are women informed about Ca cx | | |
| - Health Education | 3 | 8 |
| – Radio | 2 | 5 |
| - Pamphlets | 2 | 5 |
| - New papers | 2 | 5 |
| - TV | 0 | 0 |

As little as eight per cent of the PHC facilities indicated that they had provision for sensitising women on cervical cancer screening through health education. Public media channels contributed very little.

**Table 6**

*Check list of diagnostic facilities available at dispensary and health centres – Mainland Tanzania*

| Information | N = 40 N | % Age |
|---|---|---|
| Examination room | 40 | 100 |
| Examination couch | 31 | 78 |
| Light source | 22 | 55 |
| Screens | 36 | 90 |
| Latex gloves | 35 | 88 |
| Sterilisers (Biolers) | 37 | 93 |
| Kidney dishes | 37 | 93 |
| Vulsellum | 27 | 68 |
| Speculum | 32 | 87 |
| Spatula | 31 | 78 |
| Glass slides | 38 | 95 |
| Fixatives | 20 | 50 |
| Slide holders | 27 | 73 |
| Stationery | 38 | 95 |
| Marker pencils | 37 | 94 |
| Detergents | 40 | 100 |

Basic facilities to perform Pap smear were in place in most of the PHC facilities in the country. Basic diagnostic facilities, namely, examination room, couch, fixatives screens speculums were present in all district and regional hospitals but screening for cervical cancer is hardly done(5%). In situations when it was done, this was usually performed in post natal and family planning clinics only (10%). One of the main reasons for not performing screening was lack of guidelines on who should be screened for cervical cancer and by whom.

**Table 7**

*Distributing of existing treatment facilities in district and regional hospitals*

| | N = 20 N | % |
|---|---|---|
| *Methods for pre-cancer treatment* | | |
| • None | 10 | 50 |
| • Cryotherapy | 0 | 0 |
| • Electro coagulation | 5 | 25 |
| • Leap | 1 | 5 |
| • Cone | 3 | 15 |
| *What methods available for treatment of Ca Cx* | | |
| • None | 10 | 50 |
| • Surgery | 4 | 20 |
| • Radiotherapy | 0 | 0 |
| • Chemotherapy | 0 | 0 |
| *Enabling facilities* | | |
| • Operating theatre | 20 | 100 |
| • Anaesthetic machine | 19 | 95 |
| • Anaesthetic drugs | 18 | 90 |
| • Radiotherapy equipment | 13 | 65 |
| • Isotopes | 0 | 0 |
| • Microscopes | 0 | 0 |
| • Reagents | 16 | 80 |
| | 15 | 75 |
| *Treatment procedures available* | | |
| • Radiotherapy | 12 | 60 |
| • Hysterectomy | 11 | 55 |
| • Cone | 1 | 5 |
| • Leap excision | 0 | 0 |
| • Cryotherapy | | |

Table 7 shows that 50% of all district and regional hospitals do not have in place methods for treating pre-cancerous lesions of the cervix. Of the hospitals which were able to offer such treatment, electrocautery and cone biopsy were the commonest modalities. In the event of invasive cancer, the only treatment modality offered was radical surgery in 20% of the institutions.

**Table 8**

*Distribution of treatment facilities in the four tertiary institutions*

| | N = 4 N | % |
|---|---|---|
| *Methods for pre-cancer treatment* | | |
| • Cryotherapy | 0 | 0 |
| • Electrocoagulation | 1 | 25 |
| • Leap | 0 | 0 |
| • Cone | 4 | 100 |
| *Methods available for cancer cx treatment* | | |
| • None | 12 | 60 |
| • Surgery | 11 | 55 |
| • Radiotherapy | 1 | 5 |
| • Chemotherapy | 0 | 0 |

Table 8 shows existing diagnostic and treatment facilities in the country. Routine screening was done in only 25% of the tertiary institutions. Most of this screening was performed in Gynaecology and Family Planning clinics. The average "turn round time" for results was about four weeks with only ten patients being screened per week. Most of the Pap smears were however processed and reported on site. Cone biopsy and electrocauterisation were the only methods available for treatment of pre-cancerous lesions. None of the centres hard colposcopy services however all the four tertiary institutions had adequate facilities for screening and diagnosis of cervical cancer (Table 8).

**Table 9**

*Policy guidelines for cervical cancer screening in tertiary institutions*

| | | N=4 | % |
|---|---|---|---|
| Policy guideline for screening | YES | | 0 |
| If yes groups of women screens | | | |
| - All | | N/A | |
| - PN women | | N/A | |
| - FP clients | | N/A | |
| - Symptomatic women | | N/A | |
| Health cadre performing screening | | | |
| • Registered nurse | | | 0 |
| • MA/Clinical officer | | | 0 |
| • Doctors | | | 100 |
| Classification of Pap smear | | | |
| • Class I-IV | | | 50 |
| • Mild-moderate severe dysplasia | | | 25 |
| • CIN | | | 75 |
| • Bethesed | | | 0 |
| Action taken on abnormal results | | | |
| • Treat | | | 75 |
| • Refer | | | 75 |
| How many positive Pa get lost | | DK | 100 |
| Are women informed about cancer screening | YES | | 50 |
| Any social cultural barriers | YES | | 0 |

There were no national or institutional policy guidelines for cervical cancer screening even at tertiary hospitals. Where screening activity was available, it was done by doctors only. On information, only 50% of institutions said women in their community were informed about cervical cancer screening.

## DISCUSSION

Cervical cancer is the most common cancer and the leading cause of cancer-related deaths among women in developing countries. It is estimated that 200,000 to 300,000 women die from cervical cancer every year and that most of them are from poorer developing countries(4). Even more sobering is the fact that of the 500,000 new cases of cervical cancer detected each year in the world, almost 80% are from the developing countries with highest incidence being reported in East and Southern Africa(5).

In Dar es Salaam, cervical cancer is the leading cause of all gynaecological admissions (32%). Rates as high as 80% have been reported in some east, central and southern African countries(2,6). Death resulting from cervical cancer is alarmingly high because this form of cancer takes a very long time to develop; it has easily detectable precursor conditions which are easily cheaply and effectively treated(7). Results from this study show that over 95% of dispensaries, health centres, district and regional hospitals were well equipped to inspect the cervix and screen against cervical cancer.

Sixty seven per cent of the health workers were aware of what a Pap smear was. However, no fewer than four per cent had actually performed a Pap smear in the preceding year. This sharply contrasts with observation that well over 70% of staff had seen frank invasive cancer over the same period. These findings compare very well with those of WHO 1986 which found that only five per cent of women in developing countries at any point in time had been screened within the preceding five years. In developed countries 45% - 50% of women are screened every year(5).

This study clearly showed that there exists no national or institutional guidelines for screening against cervical cancer; where screening was done at all this was to symptomatic women at gynaecology or Family Planning clinics and this was invariably done by doctors only. This practice naturally does not benefit women with pre-invasive lesions. Furthermore, non-involvement of nurses and other medical cadres in screening is surely a gross under utilisation of available staff.

All the four tertiary institutions had adequate facilities for screening and diagnosing cervical cancer. However only 25% of all tertiary institutions were performing routine screening; none had a colposcopy and the only methods used for treating pre-cancerous lesions were either cone biopsy or electrocauterisation. Arguably there is a need to put more emphasis on training of medical doctors on cone procedure so that more and more patients at district and regional hospital level can benefit.

These notwithstanding, cytology-based screening is very complex and invariably costly. Performing a Pap smear may appear deceptively simple but from clinical and programmatic logistics, a large number of steps are required to take an adequate smear, process, analyses the specimen and eventually inform patients of the results(8).

From this study, all the steps mentioned were problematic: the little screening that was being done was only offered in tertiary hospitals which are located in urban areas.

Futhermore, in those urban areas the number of adequately trained cyto-technicians and cytopathologist was dismal; the turn around times for processing and reporting specimen is equally slow. As a result there are delays in patients receiving results and loss to follow up was high. There is an urgent need to train more cyto-technicians, involve the nursing staff in the screening process, educate people, prepare national guidelines and find alternatives to cytology based screening against cervical cancer.

Involving men "help women" have shown to be quite beneficial in some parts of rural Hondurus(9). Educating men about family planning and reproductive health resulted in an increase in contraceptive prevalence from 51% to 58% and the proportion of women who obtained a Pap smear rose from 30% to 43%(9). Education saves lives. Educated women are more likely to make greater use of existing health facilities, including availing themselves to cervical cancer screening, thereby reducing the morbidity and mortality that goes with it.

In conclusion, most of the basic requirements for cervical screening are available at all health care levels (primary to tertiary) in Tanzania. Screening against cervical cancer is totally inadequate at all levels of health care delivery care. Other than doctors it tertiary level, other medical personal including nurses are not adequately utilised for screening against cervical cancer. There is total lack of policy quick lines on cervical cancer screening in Tanzania. Treatment facilities for pre cancerous lesions which are cheap, simple and yet very effective are inadequate or non-existent at district/regional and tertiary hospitals.

## RECOMMENDATIONS

Cervical cancer is an important public health problem whose prevention should be integrated in all existing primary health care and women's health programmes in Tanzania. There is an urgent need to train nurses and other medical personal including more cyto-technicians for cervical cancer screening. More emphasis should be placed on providing treatment facilities of pre-cancerous lesions in district and regional hospitals (leap excision, cone biopsy and cryotherapy). National policy guidelines on cervical cancer screening should be urgently drawn addressing specific age at risk groups and frequency of screening. For adequate assessment on impact of cervical

cancer screening programme cancer registries should be established at district, regional and national levels.

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