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ASSESSMENT OF RISK FACTORS FOR BOVINE TUBERCULOSIS AMONG RURAL WOMEN FARMERS IN KWARA STATE, NIGERIA.

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ABSTRACT

In sub-Saharan Africa, bovine tuberculosis (BTB) causes significant economic losses and public health hazard but has received little attention in Nigeria. The aim of this study is to investigate the potential risk factors, level of knowledge and practices that enhance BTB among the female rural dwellers in five Local Government areas of Kwara State and to document the records of tuberculosis from community health centres that are situated in the study area. Four hundred and fifty questionnaires were used to carry out a survey for randomly selected female farmers. Of the four hundred and fifty women, 210/450 (46.7%) respondents fell within the ages of 16-30, (396/450) 88.0% were married. Of the 450, 141(31.3%) were aware of BTB and 117 (20.0%) got to know at the hospital. Eating of raw animal meat, Consumption of unpasteurized milk extracted from animals, Consumption of meat of diseased or dead animals, Untimely and improper vaccination of the animals, Treating diseased and sick animals at home rather than consulting experts, Consumption of raw animal parts for medicinal purpose and Improper hygiene before and after attending to animals. This study showed that numerous people are predisposed to bovine tuberculosis despite the threats posed by bovine tuberculosis.

Keywords: Bovine tuberculosis, rural women farmers, raw animal meat, unpasteurized milk,

INTRODUCTION

Most human prehistory was spent by groups of hunter-gatherers usually with fewer than 150 individuals that were not often in contact with other bands but were only living with their animals. Because of this, epidemic or pandemic diseases which depend on a constant influx of humans who have not developed an immune response, tended to burn out after their first run through a population.

Nigeria is ranked 4th among the 22 high burden countries for tuberculosis in the world and 1st in Africa, with a 2007 estimate of 460,000 new cases occurring per year most especially among the cattle rearers. The burden of TB in Nigeria is not precisely known, but the steady rise of the number of case notifications since 1996 is evidence that the case burden of bovine tuberculosis disease on the Nigeria population is enlarging and heavier with time. Beyond case finding factors in the Nigeria Tuberculosis and Leprocy Control Programme (NBTLCP), the growing TB incidence rate is, doubtlessly, epidemiological evidence that the transmission of the deadly disease is continuing in Nigerian communities (NBTLCP, 2010). Tuberculosis is of three types and they are; human, avian and bovine. A total of 90,301 of all forms of TB cases were notified from the 36 states in 2008. About 85% of the 83,263 new cases detected were smear positive and investigations and reports have shown that brucellosis is endemic in Nigeria and evidence of infection as well as frank outbreaks have occurred in cattle (Esuruoso and Hill, 1971; Esuruoso and Van Blake, 1972; Esuruoso, 1974ab). Studies have also revealed that high mortality rate (Cascio *et al*., 2011); infertility (Abdul, 2012), low productivity, poor standard of living and high prevalence of bovine tuberculosis are on the increase in the developing countries in general and Nigeria to be specific.

In Nigeria, an annual loss of 5 million United States dollars in meat products has been reported (Garba, 2002). The Nigerian government and numerous foreign agencies have instituted interventions to reduce its impact. These measures are increasingly being hampered by several other factors, including rising poverty, poor housing, poor diet, inconsistent government policy on tuberculosis control, and expensive and not readily available antimycobacterial drugs (Okpeh, 2005).

About 36% of the Nigerian meat supply comes from beef alone, as reported by (Aniebo, 2009), and about 40% of the cattle population is from eastern Nigeria. An 8-month study was conducted by Maxwell *et al*. (2012) to determine the prevalence of bovine tuberculosis (BTB) in the three major zonal abattoirs of Imo State, south-eastern Nigeria. During this period, 7,164 cattle were slaughtered and examined, 7 (3.4%) were infected with bovine tuberculosis.

MATERIALS AND METHODS

The study was carried out in five different villages in Kwara state namely Gaa wara, Bolorunduro, Alhaji Abdulkadri, Tukasi and Aladii. A well structured questionnaire and interview schedule were administered to women who had contacts with cattle or their products. The results were analyzed using frequency and percentages.

RESULTS

A total of 450 respondents were involved in this study. Of these, (210) 46.7% fell within the age range of 16-30, (396) 88.0% were married, (441) 98% had no formal education, (222) 49.3% were involved in the making of cheese while (258) 57.3% had a household size of 6-10.

Table 1 reveals that most of the respondents identified eating of raw animal meat as the highest practice that enhanced bovine tuberculosis transmission with a mean weight of 4.43, followed by consumption of unpasteurized milk extracted from animals (4.40) then, treating diseased and sick animals at home rather than consulting experts (4.16), with the fourth being consumption of meat of diseased or dead animals (4.02), then (3.85) followed by consumption of raw animal parts for medicinal purpose (3.66) and lastly, improper hygiene before and after attending to animals (3.63).

Forty six percent of the respondents knew that weakened immune system was a risk factor of BTB; 83.3% were malnourished: 84.7% were overcrowded; 75.3% were exposed to aborted home-owned animals and 83.3% ate home-made milk products as shown in Table 2.

DISCUSSION

This study was prompted because women account for 70% of the world's poor, women in developing countries

Table 1: Practices that enhanced transmission of bovine tuberculosis

Variables	Weighted score	Weighted mean	Rank
Eating of raw animal meat	1995	4.43	1st
Consumption of unpasteurized milk extracted from animals	1980	4.40	2nd
Consumption of meat of diseased or dead animals	1812	4.02	4th
Untimely and improper vaccination of the animals	1734	3.85	5th
Treating diseased and sick animals at home rather than consulting experts	1872	4.16	3rd
Consumption of raw animal parts for medicinal purpose	1647	3.66	6th
Improper hygiene before and after attending to animals	1632	3.63	7th

Table 2: Risk factors that predisposed individuals to bovine tuberculosis

Risk factors	Frequency	Percentage
Weakened immune system		
Yes	207	46.0
I don't know	195	43.3
No	48	10.7
Total	**450**	**100.0**
Overcrowding		
Yes	381	84.7
I don't know	48	10.7
No	21	4.7
Total	**450**	**100.0**
Malnutrition		
Yes	375	83.3
I don't know	57	12.7
No	18	4.0
Total	**450**	**100.0**
Eating home-made milk product		
Yes	375	83.3
I don't know	66	14.7
No	9	2.0
Total	**450**	**100.0**
Exposure to aborted home owned animals		
Yes	339	75.3
I don't know	60	20.0
No	21	4.7
Total	**450**	**100.0**

are disproportionately affected by tuberculosis (WHO, 2011). TB places pregnant women and their babies at risk. Women with BTB are twice as likely to give birth to a premature or low birth babies and four times more likely to die in childbirth. TB progresses more quickly in women of reproductive age than men of the same age group. Women with BTB are often too ill to engage in farm work leading to decrease in their productivity and a resultant reduction in income (GAP, 2010).

This study confirmed Eating of raw animal meat, Consumption of unpasteurized milk extracted from animals, Consumption of meat of diseased or dead animals, Untimely and improper vaccination of the animals, Treating diseased and sick animals at home rather than consulting experts, Consumption of raw animal parts for medicinal purpose and Improper hygiene before and after attending to animals as practices the women farmers engaged in. This is supported by findings of Bikas *et al.* (2003) which stated that transmission to humans can be via direct contact with infected livestock or through consumption of animal products such as unpasteurized milk and undercooked meat. Other dairy products prepared from unpasteurized milk such as soft cheese, yoghurts and ice-creams may serve as an important cause of BTB. According to Radostits (2000) vaccination has been shown to minimize losses due to tuberculosis and also reduce the prevalence of tuberculosis.

Today in Nigeria, there are records of numerous deaths from TB, many of which are recorded in the primary health care (PHC) centers of the rural areas (WHO, 2011). Major challenges to control BTB in Nigeria include poor primary health-care infrastructure in rural areas of many states, unregulated private health care leading to widespread irrational use of anti-TB drugs, inadequate knowledge of the risk factors of bovine tuberculosis, poverty and lack of political will. Therefore, there is need for training programmes on preventive practices especially the rural women who have closest proximity to livestock in order to prevent human and animal morbidity, reduce the burden of BTB as reservoir, avoid potential economic disorders created by trade which in turn have impacts on urban food securities and safety. Hence, further research is needed on the subject; a greater geographical area - including more owners interviewed - is necessary for providing results and facts on the eve of a presumable continued and improved national control programme.

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