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SHORT COMMUNICATION

SANITATION AND HYGIENE STATUS OF BUTCHERIES IN KAMPALA DISTRICT, UGANDA

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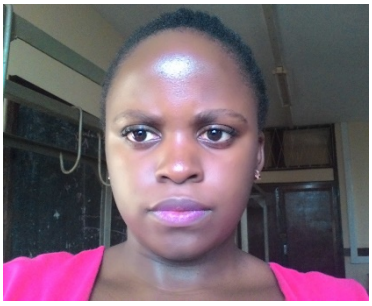

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ABSTRACT

There is a growing trend in the consumption of animal products such as meat in the developing world especially due to a growing population, urbanization and rising incomes. This poses a risk of food borne illnesses from meat consumption due to poor sanitation and hygiene. The purpose of this study was to assess the sanitation and hygiene status of butcheries in Kampala district, Uganda. The study was cross-sectional in design and involved quantitative data collection methods. The study units were butcheries from which one respondent was randomly selected to answer the questionnaire. An observational checklist was used to assess the status of sanitation and hygiene of the butcheries. Data were entered and analysed in Epi Info 3.5.1 statistical software. A total of 73 butcheries were visited, 51 (69.9%) of which were permanent structures, 7 (9.6%) semi-permanent and 15 (20.5%) temporary. Observations revealed that 24 (32.9%) butcheries had cracked walls and 66 (90.4%) had damaged floors. The main water source used by the butcheries was tap 67 (91.8%) with the rest collecting water from nearby protected springs. Hand washing facilities were present in 56 (76.7%) of the butcheries of which only 5 (6.8%) had soap for hand washing. Only 19 (26.0%) of the butcheries had receptacles for waste storage. Cleaning practices varied among butchers with 55 (75.3%) cleaning their butcheries daily. Most of the equipment (pangas and knives) found in the butcheries 66 (90.4%) were clean. Regarding personal hygiene, 57 (78.1%) of the respondents wore clean clothes, 65 (89.0%) had short finger nails and only 23 (31.5%) had personal protective wear. From the study, it was observed that the sanitation and hygiene status of butcheries in Kampala district was poor. There is, thus, need for the local authority to put in place stringent measures to ensure proper hygiene and sanitation which will reduce on the risks of meat contamination.

Key words: butcheries, hygiene, knowledge, sanitation, Uganda

INTRODUCTION

In the developing world, there is a growing trend in the consumption of animal products such as meat especially due to a growing population, urbanization and rising incomes. The traditional methods of handling, processing and marketing of meat undermine meat quality. There is also a risk of food borne illnesses from meat consumption due to poor sanitation and hygiene [1]. Other factors affecting meat quality in developing countries are prevailing poor food handling and sanitation practices, inadequate food safety laws, weak regulatory systems, lack of financial resources to invest in safe equipment and lack of education for food-handlers [2]. The use of unclean equipment, contaminated surfaces and unsafe water also pose serious threats to the consumers of meat and meat products in developing countries such as Uganda. Contamination from these sources may also include pathogens such as *Salmonella, Vibrio cholerae, Escherichia coli* and *Listeria* species which could cause severe health problems for consumers [3]. Food-related diseases and hazards are recognized to be a significant public health problem in Uganda and other developing countries. However, due to insufficient data, the quantification of morbidity and mortality of such diseases is not accurate. In Uganda, just like in other developing countries with predominantly agriculture-based economies, fresh meat is mainly distributed through markets or simple meat stalls. This makes achieving basic meat hygiene difficult due to lack of necessary sanitation infrastructure and the poor supply of safe water in many areas around the country. In addition, measures such as registration, licensing, inspections and supervision of butcheries and enforcement of legislations by the relevant authorities are not routine. The knowledge of meat handlers and butchery workers has also been observed to be inadequate elsewhere [1, 4]. This study assessed the sanitation and hygiene status of butcheries in Kampala district, Uganda so as to provide information that can be used to improve the existing situation.

METHODS

The study was conducted in eight purposively selected parishes out of the nineteen in Kawempe division, one of the five divisions in Kampala district. The division is the largest and has the lowest income per capita. It had an estimated population of 268,659 people of which 52% were female and 48% were male in 2002 [5]. The study was cross-sectional in design and involved quantitative data collection methods. The study units were butcheries while the study populations were butchers who included individuals directly or indirectly involved in the handling and selling of meat in the butcheries. The number of butcheries selected from each parish was dependent on the total number of butcheries present therein. Systematic random sampling was employed to select the butcheries that were visited in the study. In each of the butcheries, one randomly selected respondent was administered with the questionnaire after which observations of the sanitation and hygiene status of the butchery was carried out using the checklist. The questionnaire collected demographic information about the respondents and the sanitation and hygiene practices they employed in the butcheries. The observational checklist was used to assess the structure and state of repair of the butcheries, water supply, equipment used, solid waste management practices and use of personal protective wear, among others. Collected data was entered and analyzed in Epi Info version 3.5.1 statistical software. Permission to conduct the study was obtained from the local

authority and respondents gave written informed consent before responding to the questionnaire. The confidentiality of the respondents was also maintained throughout the study.

RESULTS

A total of 73 butcheries were visited of which 62 (84.9%) were located along the road with the rest in the market. The study involved 73 male respondents. Most 42 (57.5%) of them had attained secondary education and majority 62 (84.9%) had worked in a butchery for over 2 years.

Structure of butcheries

Majority 51 (69.9%) of the butcheries were permanent structures, 7 (9.6%) were semi-permanent and 15 (20.5%) temporary. Observations of the floor and walls of the butcheries revealed that 24 (32.9%) had cracked walls and 66 (90.4%) had damaged floors.

Sanitation and water supply

Majority 43 (58.9%) of the butcheries lacked a standard fly screen and fly infestation was high (more than 5 flies estimated) in 57 (78.1%) of them. Ventilation was inadequate in 42 (57.5%) of the butcheries. None of the butcheries had running water within their premises. The main water source used by the butcheries was tap 67 (91.8%) and the rest collected water from nearby protected springs. Majority 56 (76.7%) of the butcheries had functional hand washing facilities, of which 5 (6.8%) were standard and 51 (69.9%) used a jerry can or bucket with water. Majority 53 (72.6%) of the butcheries that had hand washing facilities lacked soap for hand washing. Only 19 (26.0%) of the butcheries had receptacles for waste storage and these were mainly sacks and polythene bags. Majority 55 (75.3%) of the respondents cleaned their butcheries daily and most equipment found there (pangas and knives) were clean 66 (90.4%). However, some of the respondents considered cleaning as simply sweeping meat residues off the chopping surfaces and the floor while others merely mopped the surfaces with a damp cloth.

All the butcheries had chopping surfaces made of wood. These surfaces were unsound with residue pieces of meat stuck in the wood. Only 35 (47.9%) of the butcheries had refrigerators for storage of meat of which 31 (88.6%) were in good condition. However, most of the butcheries shared the refrigerators with retail shops hence meat was kept with other commodities such as beverage, water and other ready-to-eat foods. The main methods used to avoid meat spoilage were: hanging the meat 48 (65.8%), refrigeration 31 (42.5%) and proper estimation of quantities to eliminate remainders 17 (23.3%). When asked about the consequences of poor sanitation and hygiene in their butcheries; most 47 (64.4%) of the respondents stated that it scared away customers. The rest 18 (24.7%) said it would lead to an increase in fly infestation, 15 (20.5%) bad odour and 5 (6.8%) meat spoilage. Other reasons given by respondents were that poor sanitation and hygiene could attract rodents and cause diseases to both customers and butchers.

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Health and personal hygiene

Majority 53 (72.6%) of the respondents said they usually underwent medical examination although this was done at varying intervals of once a year 36 (68.0%), twice a year 5 (9.4%), more than once a year 5 (9.4%) and only when sick 7 (13.2%). However, this could not be verified as their examination certificates were not available. Regarding personal hygiene, 57 (78.1%) of the respondents wore clean clothes, 65 (89.0%) had short finger nails and only 23 (31.5%) had personal protective wear. All respondents said it was important to wash hands to keep them clean and remove germs. Respondents further stated that they washed their hands at different times with 30 (41.1%) doing so after visiting the latrine, 19 (26.0%) on returning from outside the butchery, 8 (11.0%) before touching meat, 14 (19.2%) at their convenience and 10 (13.7%) during other times.

DISCUSSION

The sanitation and hygiene status of the butcheries was generally poor as most of them did not meet the sanitary requirements for operation as stipulated in the Public Health (Meat) Rules [6]. Meat hygiene was not properly observed as factors that directly affect it such as storage conditions and hand washing practices were improper. Additionally, practices such as use of protective wear were low and other requirements such as medical examination of meat handlers were neither consistent nor verifiable.

The poor state of sanitation and hygiene in butcheries has been reported by previous studies [1, 7]. Ventilation of the butcheries was inadequate and could affect meat quality as air in such places has been shown to contain flora [8, 9]. The walls and floors were cracked making them hard to clean and disinfect. These must be free from dirt and cleaned effectively if the high microbial load that would contaminate meat is to be dealt with [8, 10]. The handling of meat needs to be in a well-ventilated area and the presence of flies around the meat must be controlled.

Contamination of meat may also result from the quality of water used during meat handling, the working surfaces, equipment used and the butchers' hands. Even though most respondents were using tap water which undergoes treatment before distribution, the lack of running water within the premises would impact the amount used to maintain sanitation and hygiene. There is need for butcheries to have potable running water and facilities for staff to wash their hands. This study found that other sanitation facilities such as solid waste storage receptacles and hand washing facilities were not available in many butcheries. Other studies have also reported similar inadequacies in places where meat is handled [7, 11, 12]. In the study, some respondents referred to the sweeping of meat residues as the only cleaning required which is insufficient. This needs to be improved by ensuring that appropriate cleaning mechanisms involving use of detergents are employed. The disinfection of premises should also be carried out frequently if meat contamination is to be avoided.

Most respondents lacked personal protective wear such as aprons which means that they used their personal clothing in the butcheries. This increases chances of contamination of meat and indeed meat handlers have been reported as probable sources [3, 7, 13]. The

lack of personal protective wear among butchery workers has also been reported by other studies [1, 4, 11, 13]. Meat handlers must use clean aprons, overalls or gowns, footwear, and hair cover to protect both the meat and themselves from cross contamination. The equipment used in the butcheries including knives and pangas were found to be clean although chances of them being contaminated could not be ruled out given the several sanitation deficiencies found in the butcheries [1, 9, 14]. Poor sanitation and hygiene might lead to the contamination of fresh meat and this could eventually affect the health of the consumers [1, 3, 8].

The respondents in the study did not have enough knowledge on the importance of maintaining sanitation and hygiene in their butcheries. The most common reason given was worry that unsanitary conditions would scare away customers. Respondents did not understand that sanitation and hygiene is important even for their own health. Indeed, very few respondents highlighted the public health significance of maintaining sanitation and hygiene in the butcheries. Various studies have also reported that food handlers usually lack adequate knowledge on sanitation and hygiene in their line of work [1, 4]. There is, therefore, need for health education and training programs targeting butchers so that they can appreciate the public health significance of maintaining good sanitation and hygiene as has been recommended by other studies [4, 15, 16]. This could translate into improved sanitation and hygiene of butcheries and thus improved meat quality.

CONCLUSION

The sanitation and hygiene status of butcheries was inadequate and the butchers lacked adequate knowledge regarding the importance of maintaining it. The local authority should put in place stringent measures to ensure proper hygiene and sanitation and certify that butcheries meet these requirements before they are allowed to operate. This will ensure that meat made available for public consumption is free from contamination, which is the prime objective of meat hygiene and safety programmes.

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