

Evaluation of Condition of Meat Shop on Prospective of Meat Act in Madi Municipality, Chitwan, Nepal

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ABSTRACT

There are many meat shop around the country and only few are maintaining standard according to animal slaughter house and meat inspection act, 2057. We are trying to evaluate standard of 122 meat shop of Madi Municipality. We have prepared a questionnaire and surveyed all the meat shop to know the condition of shop and their standard with reference to animal slaughter house and meat inspection act, 2057. Meat shop in Madi is dominated by chicken, 85.71%. Which are equipped with D-freeze (60.65%) for freezing meat for a day with 91.22% having backup support for freezers. 70.08% of the shops are registered as mentioned by act. Similarly, only few (7.09%) of the shop have area met the requirement given by act. Ventilation in 59.02% of the shops are perfectly in line with act whereas tiles in the floor was absent in 83.61% of the shops. Good water supply and Slab in butchering area is in minimal with 8.20% and 4.10% respectively. Good condition mesh wire is present in order to prevent flies in 19.67% of the shops. Furthermore, only 1.64% of the butcher are aware about rules and regulations and 11.48% of the shop uses proper disinfection. Similarly, waste management is mostly done by making manure (28.69%) followed by burning (27.05%). Additionally, consumer's preference is in fresh meat (79.51%) among which demand of chest meat is higher (52.46%) in chicken meat. In conclusion, most of the butcher are unaware of act and are doing their business without any knowledge of act and are not in line with the instructions given by the act.

Keywords: Act, Madi, Meat inspection, Meat shop

INTRODUCTION

Animal means castrated or castrated goat, sheep, Himalayan goat (*Chyangra*), pig, wild pig, he buffaloes or rabbit the females of buffalo, goat sheep, Himalayan goat, pig, or rabbit which are fit for meat other than a cow, an ox a bull, and this word also includes poultry, ducks, pigeon or other species of beasts and birds kept for meat purpose. "Meat" means meat of animals which is fit for human consumption (SMIA-2001). In developing

countries Food Borne Disease and Zoonosis are very common due to poor handling and practices of hygiene, poor food safety law and regulatory bodies, lack of financial resources to invest on well safety equipment and lack of education for food handler (WHO, 2004).

Meat shop and slaughter house is one of the major parts of meat value chain which determines the hygiene of meat products and their quality. According to fish, meat and dairy shop planning and management standard, 2077, there are several criteria which indicate that there must be at least 100 square feet area for small retailer meat shop (MLMAC, 2020).

The animal slaughter house and meat inspection act-2057 requires below conditions to fulfilled: nobody shall establish a slaughterhouse or become a meat seller without obtaining license under this act; there shall be at least 100 sq. meter area for meat shop; there shall be at least 6 feet wall covered with white tiles and floor shall be non-slippery, easy to clean tiles or marble; for culling purpose, there shall be refrigerator with digital display or the D-freeze; equipment/tools which are used in shop shall be of stainless steel; well ventilated shop with fly and other animal preventable mesh wire/window/door shall be present; shop shall have enough clean water, good waste management system and no leakage of water on shop; alternative electricity resource shall be present such as generator or solar; employee who worked in the shop shall wore an apron, gloves, mask, head cover and boot; different meat shall be stored and sold separately and meat cutting slab shall be clean and covered when not in use.

However, this act is yet to be effectively implemented in Nepal. Unhygienic practices of meat shops, inadequate sanitation, unclean water, unskilled manpower, lack for tools for preservation meats, lack of separate areas for different types of meat are major problems of meat shops of Nepal (Bhattaria et.al., 2017). This study was carried out to find condition of meat retailer prevails in Madi valley.

MATERIALS AND METHODS

This study was carried out from February 2022 to May 2022 in retail meat shops in Madi, Chitwan, Nepal. Purposive sampling was done in all retail meat shops (n=122) of Madi municipality. In order to understand the state of the meat shops and their standards in relation to the animal slaughter house and meat inspection act-2057, we devised a questionnaire and assessed every meat shop.

This survey was done to know the status of meat shops. Madi municipality was chooses for the survey because it is a potential area for the production of livestock, because it is surrounded by Chitwan national park and there is larger community forest for the grazing and there is large grassland for the production of livestock. Data were entered

and analyzed into Microsoft Excel 2016.

RESULTS

This study revealed that only 29.92% (Figure 1) of the people have registered their shop among 122 shops and maximum of the total shop i.e., 91.22% (Figure 2) have backup facility for keeping meat in managed cool condition.

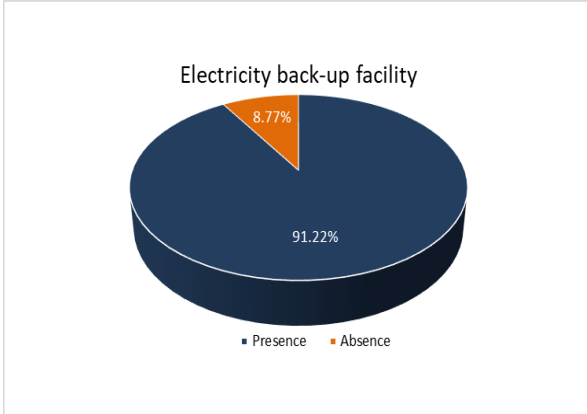


Figure 1. Registration of Shop

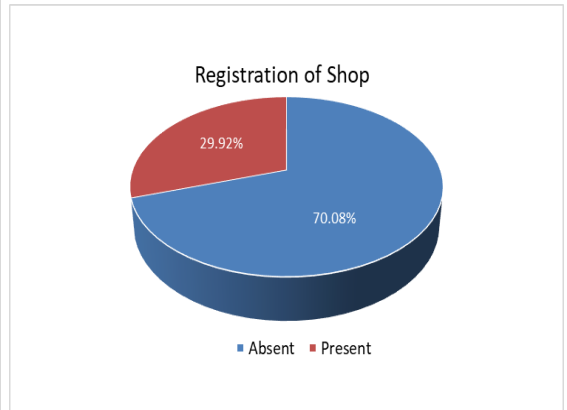


Figure 2. Back-up facility

Figure 3 indicated that the meat shop in Madi is dominated by chicken (85.71%) followed by Mixed type (4.51%) of shop and only 0.75% was occupied by pork meat shop.

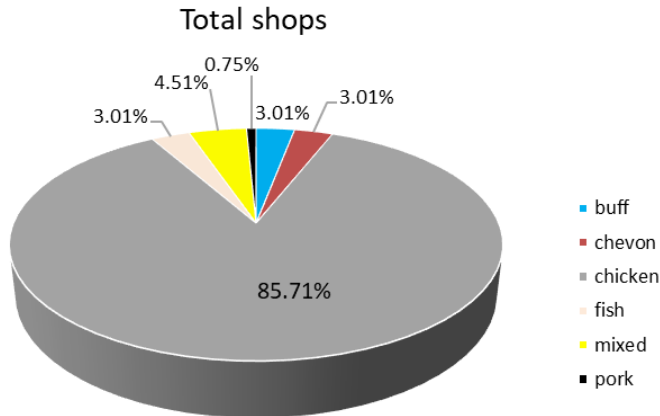


Figure 3. Different types of meat shop in Madi

Table 1 indicates that about 83.61% of the meat retailer shop do not have tiles on their wall and only 3.28% of the shops have tiles all over the area of wall. Similarly, for storage of meat 60.65% have D-freeze with them and only 10% have both D-freeze and normal

freeze.

Table 1. Area covered with marble and equipment for storage

Marble covered area		Equipment for storage	
No tiles	102 (83.61)	D-freeze	74 (60.65)
2 feet tall tiles	15 (12.29)	Freeze	35 (28.69)
3 feet tall tiles	1 (0.82)	Both	13 (10.66)
6 feet tall tiles all over the area	4 (3.28)		

Note: numbers in parenthesis are in percentage

Water supply in the meat cutting area was absent in 91.80% of the shop. Additionally, there were only 4.10% of the shop having marble or tiles slab on the table. However, as indicated by act, 59.02% have a good ventilation in the shop and rest are with bad condition of ventilation. Furthermore, use of mesh wire to prevent flies and other insect was pitiful in 80.33% of the shops (table 2).

Table 2. Management and condition of meat shop

Water supply		Presence of slab		Condition of ventilation		Use of mesh wire	
Yes	10(8.20)	Yes	5(4.10)	Good	72(59.02)	Good	24(19.67)
No	112(91.80)	No	117(95.90)	Bad	50(40.98)	Bad	98(80.33)

Note: numbers in parenthesis are in percentage

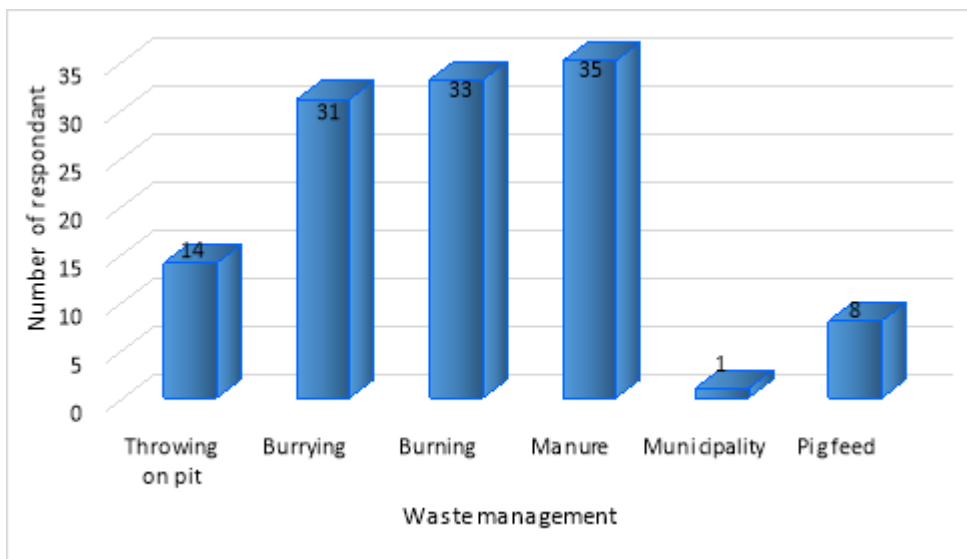
During the survey it is found that the most of the shopkeeper (98.36%) are unaware about the rules and regulation given by animal slaughter house and meat inspection act-2057. Similarly, only 11.48% of the shopkeeper use chemical (mostly phenol) for cleaning the shop and rest do not use any type of chemical. Area of the shop (including butchering area, cutting and selling area) is less than 100 sq. feet in 92.62% of the shop (Table 3).

Aware about Rules and Regulations		Use of Disinfectants		Area	
Yes	2(1.64)	Yes	14(11.48)	≥100 sq feet	9(7.38)
No	120(98.36)	No	108(88.52)	<100 sq feet	113(92.62)

Table 3. rules and regulation, use of disinfection and area of shop.

Note: numbers in parenthesis are in percentage

In this study, it is found that most of the respondents (28.69%) make manure from the waste of meat shop followed by burning (27.05%) and burying (25.41%) and only 0.82% of respondents use waste management vehicle implemented by municipality.



Consumers preference in this study was higher (79.51%) for fresh meat and only 20.49% for the frozen meat. Similarly, preference was different for different part of meat, higher for chest meat (52.46%) followed by leg meat (28.69%).

Table 4. Consumers preference for different type of meat.

Consumers preference			
Fresh meat	97(79.51)	Chest meat	64 (52.46)
Frozen meat	25(20.49)	Leg meat	35(28.69)
		Mixed	23(18.85)

DISCUSSION

Zoonotic and meat-borne diseases are preventable in developing countries, but lack of awareness of zoonotic and meat-borne diseases and poor implementation of SIMA make this a major public health problem in developing countries. In this study, most butcher shops did not meet the minimum requirements of the Animal Slaughterhouses and Meat Inspection Regulations Act (SMIA) of 2057 BS. The legal provision for individuals who do not meet the criteria are a fine of 5,000 (NPR) for the first time, 10,000 for subsequent offenses, or a month's imprisonment, or both. However, there was no evidence of such punishment and no shop met all criteria.

Contamination from dirt, dirty water, intestinal contents, or dirty knives, hands, or clothing from butchers during slaughter operations in slaughterhouses with poor hygiene and unskilled staff. All these lead to meat, bacterial infections (Upadhayaya et al.,2017). Potential for proliferation and toxin production. Lack of basic facilities, cross-

contamination with insects and flies, and many other unhygienic factors all contribute to the risk of consumer infection. There is strong evidence that slaughterhouse conditions and current meat processing practices are a major contributor to the spread of zoonotic diseases in many developing countries (Bhandari et al.,2018). However, the magnitude of public health concern and the importance of meat-borne diseases in developing countries are often underestimated. The frequency, intensity and prevalence of such diseases are increasing dramatically in developing countries (Mann et al., 1983).

We are comparing the condition with respect to animal slaughter house and meat inspection act-2057, according to the study only few have registered according to the act and most of the criteria are not met by shops. However, very few have met (7.09%) the criteria of Act and most of the shop have met only few criteria but not all.

CONCLUSION

This study concluded that condition of meat retailer is not good in madi municipality. Most of the shops do not meet the basic criteria of meat shops criteria although certain shops meet some provision of SIMA. Concern authority should address to uplift the condition of meat shops to provide quality meat for consumer.

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