ORIGINAL RESEARCH

Assessment of Pathological and Ocular Risks Related to Zoonotic Diseases Among Butchers: A Cross-Sectional Study

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ABSTRACT

Introduction: The fact that the majority of public health emergencies of international concern (PHEIC) in the last 20 years were associated animal transmitted diseases, as demonstrated by H1N1 influenza of pig origin, indicates that zoonotic diseases are becoming a significant hazard to human health. **Materials and methods:** In particular selected areas, shops were selected by using non probability purposive sampling. At Owners and face to face interviews were conducted with the eligible butchers from chosen areas who agreed to participate in our project. **Results:** It was interesting to note that only six were wearing gloves, clean and cleanable rubber shoes. Fifty eight butchers were wearing clean shirts but no one was seen wearing gown or cap. It was observed that duringthe slaughtering work, about 7% of the butchers touched their own nasal cavity, about 11% of butchers were counting money in between the work and meat touched floor in nearly 35% of the cases, meat touched the floor. **Conclusion:** Few butchers follow strict hygienic practices. Butchers are not having any formal training. Also, there is need to increase the level of knowledge on hygienic practices and awareness among butchers in order to reduce the incidences of diseases and sickness in state.

Keywords: zoonotic diseases, hygienic practices, butchers

INTRODUCTION

Zoonosis is a condition in which people contract an infection or sickness from vertebrate animals. 1 According to estimates, 60% of all infectious diseases that affect humans are spread by vertebrate animals. Additionally, zoonotic infections accounted for almost 75% of all newly found infectious diseases over the past ten years. 2 The fact that the majority of public health emergencies of international concern (PHEIC) in the last 20 years were associated animal transmitted diseases, as demonstrated by H1N1 influenza of pig origin, indicates that zoonotic diseases are becoming a significant hazard to human health. Pandemic in 2009, Ebola viral disease of bat origin in 2014, advent of Middle-East Respiratory Syndrome of camel origin, etc. 3,4 A disease's occurrence may have a significant influence on both public health and the economy. 5

Increased occupational exposures in stables, slaughterhouses, farms, and zoos; domestication of animals, agriculture, and deforestation leading to close contact with other wild vertebrate animals are the main causes of increases in risk of transmission of these animals' diseases to people. The majority of the time, these illnesses have the ability to transmit from person to person.

In India, there is a dearth of both zoonotic disease awareness and an efficient disease control and monitoring gateway for reporting zoonotic diseases that are important for public health. Butchers are a special kind of people who not only catch infections from animals or birds, but also spread them by handling meat improperly. In this study, we attempted to determine the butchers' knowledge of numerous zoonotic diseases and to monitor the hygienic procedures they used when slaughtering animals.

METHODOLOGY STUDY TYPE

This is a descriptive field based cross sectional study conducted from 1st April 2016 to 15 May 2018. The study population consisted of butchers involved in poultry and meat slaughtering practice in This city during the study period. A total 91 butchers of chicken/meat shops were contacted for interview, out of which 82 participated in our study.

INCLUSION CRITERIA

Only one person from meat /chicken shop who was actively involved in slaughtering, defeathering and /or skinning and slicing of the poultry (2) available during the time of the interview.

EXCLUSION CRITERIA

All those butchers who refuse to participate in study by giving oral informed consent were excluded

DATA COLLECTION METHOD

Ten areas were falling under this division were chosen randomly as per the convenience of interviewers. In particular selected areas, shops were selected by using non probability purposive sampling. At Owners and face to face interviews were conducted with the eligible butchers from chosen areas who agreed to participate in our project. In the meantime, investigators made sure note down key observation after observing atleast two event of slaughtering, defeathering and /or skinning and slicingof the poultry A semi-structured questionnaire was prepared after literature review.[6-12]. It consisted of questions regarding the hygienic aspects of poultry slaughtering, checklist to assess adequacy of infrastructure/facilities and observation checklist to assess the practice and Questionnaire to assess the butchers' awareness level. The data so collected was first entered into a master chart on Microsoft Excel spreadsheet. For descriptive statistics, data was grouped, tabulated and represented as percentages.

RESULT

Out of 101 shops visited by us, 92 shops owner/butchers agreed to participate in our study.

About 82.71% of the shops of those who responded were located in market areas. Most of the shops were small constructed shops with single doing all jobs like butchering and meat selling. A large majority of butchers (85.11%) were using rented shop. We found only two shops without license.(Table 1)

As depicted in **Table 2**, majority of the butchers (60.98%) were in the age group of 31-50 years.Only 12.20% of the study butcher had gone for higher secondary or above schooling. Most of butchers N=73(89%) had been engaged in this profession of slaughtering for more than five years.

As we can see from **Table 3**, majority of the butchers reported diarrhoea (18.29%),gastritis(17.07) and itching (17.07%) as most common symptom /disease occurring as result of consumption of meat. Itching (23.17%) was the most commonly reported symptom associated with butchering followed by Birdflu (21.96%).

Table 4 shows only 56.09% of the butchers were using clean and sanitized knife and slab. It was found that all the butchers were using soap for washing hands and body parts but only 59.76% and 58.74% of them were using detergent and chemical disfectant respectively, for cleaning and sanitation purposes

.Even though, there was easily availability of cold water but 66% of the establishments were lacking availability of hot water. Light was adequate in most of shops N=65(79.26%). In most of the shops N=80(97.56%) leftover byproducts was carried by municipality for disposal

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Table 1. Details of meat/poultry shops

Features	Category	Number of shops (%)
Location of shop	**Market**	72 (82.71)
	Residential	20 (19.21)
Shop license status	**present**	85 (98.51)
	absent	7 (3.41)
Status of shop	**rented**	74 (85.11)
	owned	18 (16.81)

Table 2: Sociodemographic Details of Butchers

Features	Category	Number (%)
Age (in completed years)	<20	**7 (7.11)**
	21-30	20 (22.91)
	31-40	31 (36.31)
	41-50	23 (26.63)
	51-60	8(9.51)

	>60	3 (3.41)
Educational status	Illiterate	8(8.30)
	Primary	26(31.21)
	Middle	27(31.41)
	Secondary	18(20.50)
	High sec.	12(13.21)
	Graduate	1(1.79)
Years of butchering	<1years	1(1.79)
	1-5 years	10(15.21)
	6-10years	34(40.01)
	10-15years	25(29.02)
	16 -20years	9(9.51)
	>20years	13(14.5)

Table 3: Distribution of responses of butchers regarding diseases/symptom

Symptom/Disease reported associated with	Disease	Number of Response butchers (%)
Consumption of meat	Diarrhea	17(19.21)
	itching	15(18.03)
	Gastritis	16(18.03)
	fever	14(15.61)
	cough	10(11.93)
	Birdflu	11(13.21)
	Don't know any	68(82.70)
Slaughtering/butchering	Itching	20(24.11)
	Bird flu	19(22.91)
	Fever	10(11.93)`
	Warts	9(9.51)
	Cough	6(7.11)
	Diarrhea	6(7.11)
	Tb	3(3.44)
	Rabies	2(1.23)
	Don't know any	64(77.81)

Table 4: Observation made regarding Setting/facilities

Setting/ facilities	Feature	Yes(%)
Floor	Clean	68(81.41)
	Good drainage	46(54.62)
	Sloppy	71(85.11)
	Disinfected	43(51)
Sewage	Good drainage	75(90.01)
Whether insects/pests/rodents/other animals were seen		48(57.1`)
Cage	Clean feed	55((65.61)
	Clean drinking water	56(66.81)
Soap	for washing the body parts	58(69.31)
Detergent	Using for cleaning	51(60.71)
Disfectant	Using for sanitation	51(59.51)
Water	Easily available hot water all the time	32(35.11)
	Easily available cold water all the time	85(99.2)
Lighting	Adequate	68(80.21)
Disposal of byproducts	Frequent	82(98.51)
	Safe	82(98.51)
Ventilation	Adequate	78(92.3)

Table Personal habits of butchers of butchers observed during butchering

Using Protective Clothing Equipments	Clean aprons/shirts	61(71.71)
	cleanable footwear	9(8.30)
	using gloves	9(7.02)

Personal habits of butchers observed	Butcher touch own nasal cavity while at work	7 (8.30)
	No open cuts in the hands of butchers, or if so, it was covered with wash proof covering while at work	81(98.51)
	wash hands before start of the work during the work	77 (93.61)
	wash hands after start of the work during the work	92(100)
	Butcher used tobacco products in between the work	12(14.2)
	Meat did touch the floor	30(36.31)
	Butcher did not count money in between the work	74(90.01)

DISCUSSION

One of the main causes of the outbreak of zoonotic diseases is a lack of knowledge about these illnesses. The prevention of these infections can be aided by following good hygiene practises. This study was done with the intention of examining the levels of knowledge and hygienic techniques used by butchers working in the This district when butchering animals.

In the current study, the majority of the stores were found in market areas. These stores were typically small and poorly constructed, with a single individual handling all tasks including butchering and selling meat. Only two stores without licences were discovered. All of the butchers lacked formal education. Only employees who have received adequate training in sanitary slaughtering should be permitted to work in these facilities, and proper registration and licencing of the facilities should be made mandatory by the Municipality/Department of Labor division.

More than two thirds (35.37%) of the sample of butchers were in the age range of 31 to 40. This is similar to the outcomes mentioned by Khanal et al. (2017)8. The majority of participants in the current study were literate. The findings of Khanal et al. (2017) 9 and Prabhakar et al., Kumar (2016) 11 are in agreement with our findings. The majority of the sample in a study by Prabhakar et al. (2016, 11) has finished school. The majority of butchers had been working in the industry for over five years. This slaughtering experience may help to identify infected carcasses more quickly and serve as a barrier to the spread of zoonotic infections, sparing butchers financial loss and reducing health risks associated with meat consumption.

According to our study, butchers are at risk for work hazards and lack awareness about zoonotic diseases linked to meat eating. This is in line with studies done in Ghana and the Indian subcontinent. One of the main causes of the spread of zoonotic diseases in humans is a lack of knowledge about these illnesses. The respondents' educational background may have a significant impact on butchers' knowledge of zoonotic illnesses, their transmission routes, hygienic procedures, and effective disease preventive and control techniques.

Many butchers had bad habits, such calculating money while they worked and touching their noses while they worked. The findings of a study carried out in Patna in 20069 were comparable.

The majority of responders were not observed using any personal safety precautions. Although our results concur with those of Kumar (2006)9 and Paudel (2013)10, they diverge from those of Khanal (2017)8. Each and every participant practised washing their hands with soap and water. Only 26% of the respondents, according to Paudel et al. (2013)10, cleaned their hands with soap and water.

The focus on IEC could serve as a key pillar in raising knowledge and improving access to existing control measures for high risk groups, such as butchers and other food handlers. It should be emphasised once more that the majority of zoonotic infections are preventable with straightforward steps like immunisation, routine animal health checks, and payment to livestock owners for diseased animals. However, due to a lack of resources, these regulatory techniques are not very practical in underdeveloped nations.

CONCLUSION

There is lack of adequate knowledge regarding diseases transmitted through contact with infected animals, during slaughtering and through improper handling and storage of meat and poultry. Few butchers follow strict hygienic practices. Butchers are not having any formal training. Also, there is need to increase the level of knowledge on hygienic practices and awareness among butchers in order to reduce the incidences of diseases and sickness in state.

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