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# Original Research

## Assessment of awareness regarding zoonotic diseases among butchers and hygienic practices followed by them in Jammu city: A cross sectional study

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***ABSTRACT:***
**Background:** Butchers constitute a potential vulnerable risk group for zoonotic diseases. This study attempts to explore the awareness of the butchers regarding various zoonotic disease and hygienic practices followed by them during butchering. **Methods:** This was a field based descriptive, cross sectional study conducted in Jammu district. Using purposive sampling, 82 eligible butchers who agreed to participate and were involved in poultry and meat slaughtering practice from chosen areas of Jammu city were interviewed in our project. Data was collected using a semi-structured questionnaire and checklist. **Results:** Majority of the butchers were in the age group of 31-50 years (60.98%).Diarrhea (18.29%), gastritis (17.07%) and fever (14.63%) was reported as most common symptom /disease occurring following consumption of meat. The most common butchering related symptom/disease reported was Itching (23.17%) followed by Bird flu (21.96%) and fever (10.98%).All the butchers were seen using soap for washing hands and body parts. However, only 46 butchers (56.09%) were found to using detergent/chemical disinfectant for cleaning and sanitation purposes. Even though, there was easily availability of cold water but 66% of the establishments lacked availability of hot water. Light and ventilation was adequate in most of shops (N=65 and 75 respectively). In most of the shops (N=80), leftover byproducts was carried by municipal vehicles for disposal. **Conclusion**: There is a large scope of health education and training for improving awareness and practices followed during butchering.
**Keywords:** Awareness, zoonotic diseases, hygienic practices, Butchers

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### INTRODUCTION

Zoonosis is a disease or infection which is transmitted from vertebrate animals to humans.[1] It is estimated that about 60% of all infectious diseases in human are transmitted from vertebrate animals. Moreover, around 75 percent of all emerging infectious diseases discovered during the last decade were zoonotic.[2]

Zoonotic diseases are emerging as a major threat to human health, reflected by fact majority of public health emergency of international concern (PHEIC) in last 20 years were related animal transmitted diseases as illustrated by pig origin H1N1 influenza A pandemic in 2009,Bat origin Ebola virus disease in 2014 the emergence of camel-origin Middle-East Respiratory Syndrome, etc.[3,4] The occurrence of a disease may lead to large economic losses and a considerable public health impact.[5]

The main reason for increases in risk of transmission of these animals diseases to humans is occupational exposures in stables , slaughterhouse in farms and zoos; domestication of animals, agriculture and deforestation leading in close contact with other wild vertebrate animals. In majority of cases, these infections are having potential for human to human spread.

In India, there is not only lack of awareness regarding zoonotic diseases but also lack of effective disease control and surveillance portal for reporting of zoonotic diseases of public health relevance. Butchers constitute a unique group of individuals who not only contract the diseases from animals/birds but also

transmit it through improper handling of meat. In this study, we tried to explored the awareness of the butchers regarding various zoonotic disease and observe the hygienic practices followed by them during slaughtering.

## METHODOLOGY

### STUDY TYPE

This is a descriptive field based cross sectional study conducted in Jammu district.

### STUDY SETTING

The present study was conducted in Jammu district of Jammu and Kashmir State. Total population of Jammu is 15, 29,958. (Census, 2011).During the year 2018, under Department of labour Jammu Division, there are 375 poultry and 301 meat shops & establishments are registered.

### STUDY PARTICIPANTS

The study population consisted of butchers involved in poultry and meat slaughtering practice in Jammu 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.

### STUDY PERIOD

1st April 2018 to 15 May 2018

### 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 Jammu 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 slicing of the poultry

### DATA COLLECTION TOOL

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.

### DATA ANALYSIS

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 91 shops visited by us, 82 shops owner/butchers agreed to participate in our study.

About 81.70% 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 (84.14%) 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

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 during the 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.(**Table.4**).

**Table 1.Details of meat/poultry shops**

| Features | Category | Number of shops (%) |
|---|---|---|
| **Location of shop** | **Market** | 67(81.70) |
| | **Residential** | 15(18.29) |

| | | |
|---|---|---|
| **Shop license status** | **present** | 80(97.56) |
| | **absent** | 2(2.44) |
| **Status of shop** | **rented** | 69(84.15) |
| | **owned** | 13(15.85) |

**Table 2: Sociodemographic Details of Butchers**

| Features | Category | Number (%) |
|---|---|---|
| **Age (in completed years)** | <20 | **5(6.10)** |
| | 21-30 | 18(21.95) |
| | 31-40 | 29 (35.37) |
| | 41-50 | 21(25.61) |
| | 51-60 | 7(8.54) |
| | >60 | 2 (2.44) |
| **Educational status** | Illiterate | 6(7.31) |
| | Primary | 24(29.27) |
| | Middle | 25(30.49) |
| | Secondary | 16(19.51) |
| | High sec. | 10(12.20) |
| | Graduate | 1(1.79) |
| **Years of butchering** | <1years | 1(1.79) |
| | 1-5 years | 8(14.28) |
| | 6-10years | 32(39.02) |
| | 10-15years | 23(28.05) |
| | 16 -20years | 7(8.54) |
| | >20years | 11(13.4) |

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

| Symptom/Disease reported associated with | Disease | Number of Response butchers (%) |
|---|---|---|
| **Consumption of meat** | Diarrhea | 15(18.29 ) |
| | itching | 14(17.07) |
| | Gastritis | 14(17.07) |
| | fever | 12(14.63) |
| | cough | 9(10.98) |
| | Birdflu | 10(12.20) |
| | Don't know any | 67(81.71) |
| **Slaughtering/butchering** | Itching | 19(23.17) |
| | Bird flu | 18(21.96) |
| | Fever | 9(10.98)` |
| | Warts | 7(8.54) |
| | Cough | 5(6.10) |
| | Diarrhea | 5(6.10) |
| | Tb | 2(2.43) |
| | Rabies | 1(1.22) |
| | Don't know any | 63(76.83) |

**Table 4: Observation made regarding Setting/facilities**

| Setting/ facilities | Feature | Yes(%) |
|---|---|---|
| **Floor** | Clean | 66(80.48) |
| | Good drainage | 44(53.66) |
| | Sloppy | 69(84.15) |
| | Disinfected | 41(50) |
| **Sewage** | Good drainage | 73(89.02) |
| **Whether insects/pests/rodents/other animals were seen** | | 46(56.10) |
| **Cage** | Clean feed | 53((64.63) |
| | Clean drinking water | 54(65.85) |
| **Soap** | for washing the body parts | 56(68.29) |
| **Detergent** | Using for cleaning | 49(59.76) |

| | | |
|---|---|---|
| **Disfectant** | Using for sanitation | 48(58.54) |
| **Water** | Easily available hot water all the time | 28(34.14) |
| | Easily available cold water all the time | 82(100) |
| **Lighting** | Adequate | 65(79.26) |
| **Disposal of byproducts** | Frequent | 80(97.56) |
| | Safe | 80(97.56) |
| **Ventilation** | Adequate | 75(91.4) |

**Table Personal habits of butchers of butchers observed during butchering**

| | | |
|---|---|---|
| Using P**rotective Clothing Equipments** | Clean aprons/shirts | 58(70.73) |
| | cleanable footwear | 6(7.31) |
| | using gloves | 5(6.09) |
| **Personal habits of butchers observed** | Butcher touch own nasal cavity while at work | 6 (7.31) |
| | No open cuts in the hands of butchers, or if so, it was covered with wash proof covering while at work | 80(97.56) |
| | wash hands before start of the work during the work | 76 (92.68) |
| | wash hands after start of the work during the work | 82(100) |
| | Butcher used tobacco products in between the work | 11(13.4) |
| | Meat did touch the floor | 29(35.36) |
| | Butcher did not count money in between the work | 73(89.02) |

## DISCUSSION

Lack of awareness about the zoonotic diseases is one of the most important reasons for the outbreak of zoonotic diseases. Good hygienic practices can serve as tool in curbing these diseases. With this aim, we conducted this study for exploring levels of awareness and hygienic practices followed during butchering of animals by butchers working in Jammu district.

In the present study, majority of the shops were located in market areas, mostly, small constructed shops with single person doing all jobs like butchering and meat selling. We found only two shops without license. None of the butcher had undergone any formal training. Proper registration and licensing of the facilities should be made mandatory by the Municipality/ Deptt. Of Labour division and only workers who had undergone proper training on hygienic slaughtering should be allowed to work in these facilities.

More than two third of the sample of the butchers were in the age group of 31-40 years (35.37%). This is comparable to results reported by Khanal *et al*.(2017)[8].In the present study, majority of the participants were literate. Our results concur with the results of Khanal *et al*.(2017) [9] and Prabhakar *et al*, Kumar (2016) [11]. In a study by Prabhakar et al.(2016) [11]most of the sample has completed their schooling. Most of the butchers were into the profession for more than five years. This experience of butchering might plays a favourable role in the easy identification of the diseased carcass and act as a control point for the spread of Zoonotic diseases, thereby also preventing the economical loss to butchers and health hazards in meat consuming .

In our study, butchers were found to have little knowledge regarding zoonotic diseases related to meat consumption and occupational hazard to them. This is in agreement to studies conducted in Indian subcontinent and Ghana. Lack of awareness about the zoonotic diseases is one of the most important reasons for the outbreak of zoonotic diseases in people Educational level of the respondents can plays an important role in educating the butchers about zoonotic diseases, their route of transmission, hygienic practices and proper disease prevention control measures.

A large number of butchers were engaged in unhealthy habits such as counting money in between work and, touching nose during work. A study conducted in Patna (2006)[9] reported similar results.

Majority of the respondents were not found following any personal protective measures. Even though, our results are in agreement to Kumar (2006)[9] and Paudel (2013)[10] but our results differ from that Khanal (2017)[8].All the participants practiced hand washing with soap and water However, Paudel *et al.* (2013)[10] reported only 26 % of the respondents washed hands with soap and water.

The emphasis on IEC could act as an important pillar in generation of awareness and enhancing accessible to high risk grounds including butchers and other food handlers to existing control measures. It is restated that majority of zoonotic diseases can be controlled through simple measures like vaccination, regular animal health checkups, compensation to livestock owners for infected animals. But these control measures are not very feasible in developing countries because of limited resources.

## 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.

**SOURCE(S) OF SUPPORT**
Nil

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**PRESENTATION**
Part of this study was presented in National IAPSMCON, Shimla.

**CONFLICT OF INTEREST**
Nil

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