

EFFECT OF COVID-19 LOCK DOWN ON DOMESTIC MEAT TRADE AND CONSUMPTION OF MEAT AND MEAT PRODUCTS IN INDIA

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ABSTRACT

This paper deals with survey of the impact of COVID-19 on domestic meat trade and consumption of meat and meat products in India. The survey has a specific focus on the domestic trade of meat and meat products during the pandemic COVID-19 lock down and was conducted by preparing a questionnaire and uploaded in google form and communicated to the respondents through email/Whatsapp. Based on the response offered by the respondents it appeared that during April and May 2020, there were likely to be widespread meat and meat product shortages in country due to difficulties associated with functioning of slaughter houses, availability of labours and supply of food animals. During COVID-19 lockdown period only 50 % of panchayat/municipal slaughter houses functioned of which nearly 81% of slaughterhouses functioned, occasionally, while 100 % of them had restricted working hours and 58.6 % restricted availability of skilled and 53.6 % restricted availability of unskilled labours. Moreover, movement of animals, raw materials were mostly restricted due to pandemic situation COVID-19. This disrupted the supply of meat and meat products to the consumers. Due to this there were changes in the wholesale rate of different types of meat especially on the rate of beef, mutton and chevon. There were also changes in the attitude of the consumer towards the purchase of hygienic and safe consumption of meat. The consumers also preferred to purchase the meat through online meat traders as restriction for migration of people prevailed during that time. Due to these factors the organized meat and poultry retail outlets have witnessed increased growth in sales. The domestic meat trade in India was adversely affected and suffered as an impact of COVID-19 lockdown.

Keywords: Domestic meat trade, COVID-19 lockdown, slaughterhouse, retail outlet hygiene and safe meat

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INTRODUCTION

In India in response to COVID -19 pandemic lock down was clamped on the entire nation from March to June, 2020 in most part

of the country it extended well in to the second half of the year, to prevent the spread of corona virus. Due to this pandemic situation the domestic farm trade as well as consumption of meat was highly disrupted (TNIE, 2020). This was exacerbated by the spread of Covid-19 among the workers and inspectors which brought even greater disruption as the disease continued to spread. The prices of meat particularly beef and pork were lowered due to the myth that nonvegetarian food and the corona virus can be transmitted from animals to human or vice versa, transiently switching their choice to vegetarian diet. The situation did not improve much even after the Ministry of Fisheries, Animal Husbandry and Dairying had sent advisories to all states and Union territories that consuming eggs, chicken, meat and fish is completely safe (TP, 2020). The markets for different types of meat products were also uneven. At the same time farmers were struggling to sell their animals at price that covers their cost of production. Thus, there was a huge drop in the domestic demand for meat, huge disruption in various channels of the meat value chain, reduced profit for producer, absenteeism in meat industry and trade owing to medical causes and mass migration of personnel in the lockdown. In order to study about the situation that prevailed during the domestic meat trade, an online survey was conducted to collect the information during and in the after math of COVID-19 outbreak in India.

MATERIALS AND METHODS

The survey was conducted through online by creating multiple questions in web based google form seeking information about

the prevailing conditions of domestic slaughter houses, domestic retail outlets, availability of raw materials, labors and changes in wholesale rate of different types of meat during COVID-19 lock down (March to June 2020). The respondents included professionals from the discipline of Meat Science and Technology, n-16 (senior executives from the meat industry – 8; including one chief operating officer; scientists working in cadre of senior and principle scientists in government of India -5; faculty of veterinary universities – 3); entrepreneurs from meat industry (n-5); other faculty of veterinary universities (n-2); field veterinarians (n-2); employee of Government of India associated with food safety (n-1); chief operating officers of a meat plant (n-1) and social activists (n-3). The Google form was sent by sending a link, via emailing or embedding it into a webpage or blog post. The responses from the respondents (30 Nos.) were collected and analyzed statistically by using frequencies and percentages in SPSS software version 17.0.

RESULTS AND DISCUSSION

Survey on impact of domestic meat market due to COVID -19 lock down

Functioning of slaughterhouse

The data on the survey on impact of functioning of slaughterhouse due to COVID-19 lockdown is presented in Table 1. Based on the response from the respondents during COVID-19 lock down only 50 % of slaughter houses were functional of which nearly 81 % slaughterhouses functioned on occasional basis, while 100 % of them had restricted working hours. The remaining

50% of the slaughterhouses closed shutters completely. Similarly several meat factories suspended their operation in Brazil, England and Wales as well as fish processing factory in Gana due to identification of COVID-19 positive cases among worker (BBC, 2020; Gulland, 2020; Kaur, 2020; Ziady *et al.*, 2020). In respect of skilled labours nearly 24.1% were available, 58.6 % with restrictions either in number of days worked per week or number of hours worked per day and nearly 17.2% were not available. Unskilled labours were also mostly restricted with about 53.6 % having restricted working hours and remaining only 25 % were available and 21.4 % were not available. Stephens *et al.* (2020) also reported labour shortage due to COVID-19 crisis caused severe disruptions in sectors such as livestock production, horticulture, planting, harvesting, and crop processing which are relatively labour intensive. COVID-19 lockdown had an effect on movement of animal meant for slaughter and only 24.1 % had unfelted free movement while the remaining 75.9 % had to restrictions to free movement. The sources of live animals and birds were 66.7 % from within the same districts, 2.6 % from within the same state and only 3.7 % from other states. Transporters accorded greater priority to transport of essential commodities such as vegetables, fruits, groceries, etc., so there was severe and serious paucity of vehicles for transporting meat animals such as cattle or as they were not considered as part of 'essential services' that were allowed to operate during lockdown (TP, 2020). The dairy and livestock production sectors were significantly impacted, transport of livestock was restricted or became extremely complicated, while slaughterhouses shut down and so were some trading companies. The

agents and cattle farmers at the main markets in the city increased the price of livestock and this resulted in increase in the prices of the meat. Small meat producers also struggled as they were unable to sell their products (Ijaz *et al.*, 2021). They either faced difficulties in selling animals, or could not sell them or were marketing them at lower prices. The slump in sales and the concomitant increase in feed prices due to transport disruptions, pushed many of them out of business in 2020. Fear of the COVID-19 among drivers and the lockdown in the states resulted in severe shortage of supply in the market (TNIE, 2020).

Functioning of retail outlets

The data on the survey on impact of functioning of retail outlets due to COVID-19 lockdown is presented in Table 2. Nearly 76.7% of domestic retail meat outlets/shops functioned regularly with all of them functioned too for restricted working hours and the remaining 23.3 % did not function during COVID-19 lockdown period. About 44.8 % of raw materials were freely available, 10.3 % were not available in running the domestic retail outlets and the remaining 44.6 % had restrictedly availability.

Availability of meat

Based on the responses the meat was available for the consumers through the following sources, directly from villages, export unit, private approved slaughterhouses such as Suguna and Suprieya, nearby live and frozen market for poultry, organized slaughter house, retail outlets, unorganized slaughtering / local butchers only. Some consumers reported non availability of meat through any sources.

Table 1. Survey on the impact on functioning of slaughterhouse due to COVID-19 lockdown

Sl. No	Parameters	Particulars prevailed during COVID-19 lockdown
1	Panchayat/Municipal/ Corporation slaughterhouse during lock down	Functioning - 50 %; Not functioning - 50.0 %
2	If functioning	Regular - 19 %; Occasionally - 81 %
3	Working hours	Normal - 0%; Restricted - 100%
4	Availability of skilled labour (butcher)	Available - 24.1%; Not available - 17.2%; Restricted - 58.6%
5	Availability of unskilled labour	Available - 25%; Not available - 21.4 %; Restricted - 53.6%
6	Animal/ bird meant for slaughter	Free movement - 24.1%; Restricted - 75.9%
7	Sources of live animals/ birds	Within district - 66.7 %; Within state - 2.6 %; Other state - 3.7 %

Table 2. Survey on the impact on retail meat outlets due to COVID-19 lockdown

S l . No.	Parameters	Particulars prevailed during COVID-19 lockdown
1	Retail meat outlet/shops in panchayat municipality / Corporation	Functioning - 76.7%; Not functioning - 23.3%
2	If functioning, working hours	Normal - 0%; Restricted - 100%
3	Availability of raw material	Available - 44.8%; Restricted - 44.6%; Not available - 10.3%

Changes in prices of wholesale rate of meat

The data on the survey on the impact of changes in prices of wholesale rate of meat due to COVID-19 lockdown is presented in Table 3. In case of price of the carabeef nearly 84.2 % of the respondents, responded that price of the carabeef increased and 15.8% reported there were no changes and rate of carabeef remained the same. Nearly 72.2 % reported an increase, 5.6 % a decrease and remaining the 22.2 % no changes in the wholesale rate of beef. Regarding price of pork, 58.8 % averred that there was increase in rate, 11.8 % of them reported a decrease in rate and remaining 2.4 % opined that there were no changes in the rate of pork. 91.7 % responded that there was an increase and 8.3% responded that there were no changes in wholesale rate of mutton. About 83.3 % averred that there was an increase in price, 12.5 % vouched for no change and while 4.2 % proclaimed a decrease in price of chevon. In respect of chicken meat an increase in price was chosen by 70.4 %, status quo by 3.4 %, and a drop in price by 25.9 % of the respondent respectively. Likewise, for whole sale rate of Japanese Quails 77.8 % averred that there was an increase in price, 22.2 % vouched for no changes in price. Based on the responses from the respondents it implies that there was sharp increase in wholesale rate of all type of meat such as carabeef, beef, pork, mutton, chevon, chicken and Japanese quail during pandemic COVID -19 lockdown period. This corroborated with reports of EDP, 2020 that COVID-19 outbreak caused a significant rise in food price related to lockdown restrictions accompanied by panic buying, as well as supply chain disruptions.

Changes in retail rate of meat in domestic market

The data on the survey on impact of changes in prices of retail rate of meat due to COVID-19 lockdown is presented in Table 4. In case of carabeef there was an increase, and remained same or no changes according to 70.6 % and 29.4 % of the respondent respectively. Survey revealed that there was an increase, decrease and no changes in the price of beef by 77.8 %, 5.5 % and 16.7 % of the respondent respectively. In respect of pork an increase in price was chosen by 61.1 %, status quo by 27.8 %, and decrease in price by 25.9 % of the respondent respectively. For mutton, survey revealed that 96 % respondent believed there was increase and while the remaining 4 % felt there was no change respectively. About 82.6 % averred that there was an increase in price, 17.4 % vouched for no change and while none of the respondent proclaimed decrease in prices of chevon. In respect of chicken an increase in price was chosen by 66.7%, status quo by 7.4 %, and a decrease in price by 25.9 % of the respondent. Survey on price of Japanese quail revealed that there was an increase and decrease in prices by 76.5 % and 23.5 % of the respondents respectively. Based on the responses for changes in the prices of different types of meat in retail outlets, it appeared there was increase in the retails rate of all the types of meat namely carabeef, beef, pork, mutton, chevon, chicken and Japanese quails.

Changes in consumer's attitude and meat sales from retail outlets

The data on the survey on impact of changes in consumers attitude and meat sales from retail outlets due to COVID-19 lockdown

Table 3. Survey on the impact on changes in prices of wholesale rate of meat due to COVID-19 lockdown

Sl. No	Changes in price of whole sale rate of meat	Increase	Decrease	Remains the same
1	Carabeef	84.2 %	0 %	15.8 %
2	Beef	72.2 %	5.6 %	22.2 %
3	Pork	58.8 %	11.8 %	2.4 %
4	Mutton	91.7 %	0 %	8.3 %
5	Chevon	83.3 %	4.2 %	12.5 %
6	Chicken	70.4 %	25.9 %	3.7 %
7	Japanese quails	77.8 %	0 %	22.2 %

Table 4. Survey on the impact on changes in prices of retail rate of meat due to COVID-19 lockdown

Sl. No	Type of meat	Increase	Decrease	Remains the same
1	Carabeef	70.6 %	0 %	29.4 %
2	Beef	77.8 %	5.5 %	16.7 %
3	Pork	61.1 %	11.1 %	27.8 %
4	Mutton	96 %	0 %	4 %
5	Chevon	82.6 %	0 %	17.4 %
6	Chicken	66.7 %	25.9 %	7.4 %
7	Japanese quails	76.5 %	0 %	23.5 %

Table 5. Survey on the impact on changes in consumer's attitude and meat sales from retail outlets due to COVID-19 lockdown

Sl. No.	Particulars	Increase	Decrease	Remains the same
1	Changes in consumers preference to meat	48.1 %	33.3 %	18.5 %
2	Consumers attitude towards retail meat sales	37 %	55.6 %	7.4 %

is presented in Table 5. Based on the responses given by the respondents it becomes clear that 48.1 % of the respondent reduced, 33.3 % of them increased and remaining 18.5 % had no changes in the consumption of meat. The domestic meat sales had decreased, increased and remained the same according to 55.6 %, 37 % and 7.4 % of the respondent respectively. The job loss during the lockdown hits them hard and left them with no option but to cut on the meat consumption. Increase in prices of meat also made non vegetarians' food less accessible to consumers below poverty line. Trend clearly indicated that becomes people had to cut down their protein intake amid the pandemic as their spending capacity went down as well as the affordability of these items. Hughes, 2020; Muscogiuri *et al.*, 2020 also reported changes in the food buying behaviour to consume healthy foods, but at the same time to achieve this without exceeding normal budget.

Negative and positive media messages on consumption of meat

There were also negative media messages about consumption of meat during lockdown that CORONA virus will spread through meat consumption of raw meat along with rumours that meat could contain the novel coronavirus and the myth about COVID - 19 was transmitted by chicken. There were also positive media messages about consumption of meat that an increase in protein consumption through consumption of meat and meat protein will build up immunity in the body. Some of the consumers started to eat frozen meat because as no one was sure when the shops would remain open. Once the

stock at home got over and consumers had to depend on egg white as a protein supplements till they could replenish their stocks (TT1, 2020).

Online markets for domestic meat sales

The data on the survey of impact on online markets for domestic meat sales due to COVID-19 lockdown is presented in Fig. 1. The domestic meat mostly sold by online of which about 50 % through Tendercuts, Fipola, Licious and Fresh to home, directly and 44.4 % through home delivery through Swiggy, Zomato, Bigbasket and Shakthi Healthy and paradise, 5.6 % from door to door from known suppliers. Similarly During COVID -19 lock down in French 29% reported buying more local food and 20% went online shopping (Askew, 2020). The total meat consumption from regular meat retail outlets (wet market) consequently declined due to the economic recession due to the pandemic. Owing to COVID 19 consumers started attaching greater importance to hygiene and safety in respect of consumption of meat. Due to these factors organized meat and poultry meat retail outlets have witnessed increased growth in sales during lockdown and the same trends expected to continue even during the extended period of lock down.

Consumers' attitude towards online domestic meat sales

During COVID-19 lockdown the consumers' attitude to online meat sales, 56 % reported for increase, 36 % a decrease and 8 % reported that remained the same. This might be due to Tendercuts which operates in Chennai and Hyderabad had registered

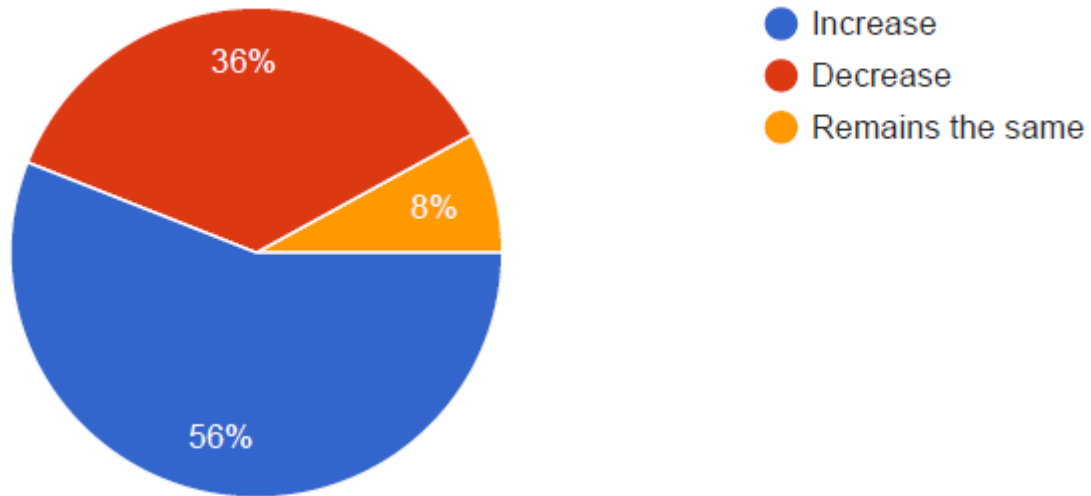


Fig. 1. Survey on the impact on online markets for domestic meat sales due to COVID-19 lockdown

a growth of over 300 % and has planned to double its stores from existing 20 to 40 Nos during the financial year was reported by TNIE (2020). Similarly, Fipola Retail India Pvt Ltd has similar plans of opening modern meat retailing stores in Chennai city and it also tied up with Swiggy and Zomato, aimed at serving fresh and high-quality meat to the consumers. Due to higher demand meat Fresh to Home and Zapp Fresh had also introduced home delivery to the consumers. While the unorganized markets remained closed during the initial few days, all these online meat markets opened shop and operated with home delivery options. Consumers from all age categories started buying meat from online and hence online meat purchase had increased

during lockdown. Similar findings of Serpil Aday and Aday (2020) reported that 70 % of the consumers reduced the frequency of food shopping and preferred online shopping during COVID-19 outbreak in USA. Consumers also, have understood the need for buying meat at safe and hygienic places (TH, 2020). There was surge in their prices and have almost doubled due to shortage in supply chain of meat.

Precautionary measures taken while purchasing meat

People wear face mask, gloves, maintain social distancing, use sanitizers and all other instructions specified by the government were followed.

CONCLUSION

The increased volume of sales recorded by online meat market is a testimony to the fact that COVID-19 outbreak has motivated all of us to strive towards hygiene and safety, hence meat from organized retail outlets being preferred over that from wet markets due to the fear in the mind of consumers during pandemic COVID-19. This should serve as a clarion call the panchayat or Municipal or corporation slaughterhouses need to take necessary safety measures starting from transportation of live animals, slaughtering and till it reaches the consumers with proper disinfection of animal or carcass, handling materials and equipments, surfaces that attain contact with meat and meat packaging materials. Further, the workers or operatives in both slaughter house and retail outlet also need to sanitize their hands, wear caps, gloves, masks and googles always and they should not wear any jewelry, amulets or other accessories in the hands. This would serve to dispel the doubts about the safety of meat in our wet markets. However, there are no scientific reports associating consumption of meat and meat products with transmission of COVID 19, till date. The consumers should maintain proper social distance and not less than 6 feet at retail meat outlets, washing the meat with 1 % turmeric water and under after safe handling of meat till cooking and to stay safe and protected against spread of COVID-19.

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