

Full Length Research Paper

Control measures followed by livestock owners with respect to zoonotic diseases

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Accepted 06 September, 2013

Zoonoses are infections naturally transmitted between vertebrate animals and humans. An exploratory Interview- schedule based study of livestock owners (n=120) was carried out in Basti and Gorakhpur Districts of Uttar Pradesh, to assess control measures followed by livestock owners with respect to zoonotic diseases. A combination of closed and open-ended questions and ranking techniques were employed to gather information on perceptions concerning the type of zoonoses prevalent in the study area, level of risk, mode of transmission, methods of preventing disease transmission from animals to humans. The results demonstrated that livestock owners regular clean shed and their animals, treat their animal by para-veterinarians and used practice like cleaning of teat of animals etc., These results suggest that in the Basti and Gorakhpur Districts of Uttar Pradesh, had low awareness of zoonoses, combined with food consumption habits and poor animal husbandry are likely to expose respondents to an increased risk of contracting zoonoses. Public health promotion on education and inter-disciplinary one-health collaboration between vets, public health practitioners and policy makers should result in a more efficient and effective joint approach to the diagnosis and control of zoonoses in Uttar Pradesh.

Key words: Veterinarians, zoonoses, transmission, para veterinarians, awareness.

INTRODUCTION

A zoonosis is any infectious disease that can be transmitted from animals, both wild and domestic, to humans (Coleman, 2002; WHO/FAO/OIE, 2004). Brucellosis, rabies, human African trypanosomiasis, bovine tuberculosis (BTB), cysticercosis, echinococcosis and anthrax, are listed as seven endemic zoonoses of concern (WHO, 2006). The majority of pathogenic species causing disease in humans are zoonotic – being estimated at > 60% of all human diseases (Morse, 1995; Palmer & Soulby, 1998; Murphy, 1998). Zoonoses are also considered to be twice as likely to be associated with emerging diseases as non-zoonoses (Taylor et al., 2001). The emergence and re-emergence of zoonoses and their potentially disastrous impact on human health is a growing concern around the globe (Woolhouse and Gowtage-Sequeria, 2005). In developing countries they constitute an important threat to human health (Wastling et al, 1999).

Zoonotic diseases have both direct and indirect effects on livestock health and production (Smits and Cutler, 2004). Indirect effects occur as a result of the risk of human disease, the economic impact on livestock producers through barriers to trade, the costs associated with control programmes, the increased cost of marketing produce to ensure it is safe for human consumption and the loss of markets because of decreased consumer confidence (McDermott and Arimi, 2002) modern farrowing crate designs permit improved management and safe working access to the piglets, automation of manure removal, improved hygiene, and better protection for the stockperson from any aggression that may be displayed by the sow when handling piglets to carry out routine management procedures. Cronin (1998), reported that when considering the consequences of Japanese Encephalitis, immunization emerges more clearly as the most cost-effective measure for controlling not only the death and disability caused by JE, but also the hidden emotional and economic toll on survivors, their families and their communities (W.H.O. 2006).

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RESEARCH METHODOLOGY

Study Area

This study was conducted in Gorakhpur & Basti Divisions. Gorakhpur division consists 04 districts namely Gorakhpur, Deoria, Kushinagar, Maharajganj, whereas, Basti division consists 03 districts namely Basti, Santkabirnagar and Siddarthnagar. Division headquarters from both the division i.e. Gorakhpur and Basti district have been selected purposively for the investigation due to following reasons.

According to National Vector Borne Diseases Control Programme, during 2007 to 2010 country's more than 65 to 78 percent suspected cases and deaths due to zoonotic diseases particularly Japanese Encephalitis was reported in the Uttar Pradesh state particularly from Gorakhpur and Basti division.

Gorakhpur & Basti division are mainly a paddy growing area, with clay soil and a very high water table. The village ecosystem comprised rivers, lakes, irrigation canals, reservoirs and rice fields during zoonotic diseases particularly Japanese Encephalitis transmission season (July-November). In addition, high temperature and relative humidity provided a suitable environment for zoonotic diseases transmission in the region. Most of the zoonotic diseases are seasonal, that usually occurs in the summers and in the rainy season. During this time mosquito breeding is extensive due to floodwaters from Nepal and stagnant waters in the state particularly in these divisions. The geographic features of this region are conducive for the spread of zoonotic diseases an abundance of rice fields and a bowl-shaped landscape allow water to collect in pools. Heavy rains saturated the ground, which caused ideal breeding conditions for mosquitoes.

Study Design and Data Collection

To draw the sample for the study structured open-ended interview schedule was developed to study the control measures followed by livestock owners with respect to zoonotic diseases. The focus of interview schedule was on livestock owners (Gorakhpur & Basti) control measures, a purposive sampling technique was followed in selection of districts and stratified simple random sampling technique was applied to select community development blocks (CDB), villages and farmers key information asked included what control measure followed by livestock owners during handling of their animals and their husbandry practices like water management, cleaning of their surroundings and pattern of waste disposal of their home as well as animal sheds, regular vaccination to their animals, clean of animal tests before and after milking, concerned with veterinarians or para veterinarians and avoid eat/drinking in animal sheds

etc. Respondents were asked to so many questions related to control measures they followed in rural area. A complete list of the question asked is given in Tables.

Data Analysis

A personal interview schedule was developed looking in view the objective and variables of study, background information of the study area was obtained through personal observation, consultation with officials before the actual data collection several visits were made to build rapport with the respondents of the randomly selected villages and officials. Quantitative and qualitative data were collected through observation, interaction dialogue, detailed discussion with lay informants aged persons, housewives and traditional leaders. The data were collected, compiled, tabulated and analysed using frequency, percentage thus researcher will exploit all possible opportunities to collect the relevant primary and secondary information for descriptive analysis.

RESULTS

Table 1 indicated that majority of respondents (95.00%) clean animals shed regularly followed by check their animals (90.00%) regularly, concerned with para veterinarians (87.50%) regularly, clean teat (77.50%) before and after milking and prevent animals overcrowd, avoid eat /drink in animal (75.00%) shed area. Respondents (43.33%) clean their animals regularly, use of mosquito (26.67%) coil, discussion with Veterinarians (21.67%), maintain proper drainage (20.83%) home as well as animals shed, regular vaccination (16.67%) for their animals and none of respondents clean their hand with soap or dettol after animals handling.

Table 2 indicated that majority of respondents (80.00%) in Basti district use tube well as a source of water for bathing purpose followed by 20.00 per cent use canal as a source of water for bathing purpose for animal and human being, whereas in case of Gorakhpur district majority of respondents (65.00%) use tube well as a source of water for bathing purpose for animal and human being, followed by 35.00 per cent use canal as a source of water for bathing purpose for animal and human being.

Same table also indicate that in pooled data majority of respondents (72.50%) use tube well as a source of water for bathing purpose followed by 27.50 per cent use canal as a source of water for bathing purpose for animal and human being in the study area.

Table 3 indicated that majority of respondents (80.00%) in Basti district used open drain around home purpose followed by 20.00 per cent use soakage pit, whereas 93.33 per cent use open drain around livestock shed followed by 6.67 per cent soakage pit around livestock

Table 1. control measure followed by livestock owners for zoonotic diseases.

Particular Control measures	Basti				Gorakhpur				Pooled (N=120)			
	Yes		No		Yes		No		Yes		No	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Vaccination regular	12	20.00	48	80.00	8	13.33	52	86.67	20	16.67	100	83.33
Discuss with Veterinarians	10	16.67	50	83.33	16	26.67	44	73.33	26	21.67	94	78.33
Wash hand with dettol	0	0.00	60	100	0	0.00	60	100	0	0.00	120	100
Avoid eat /drink in shed	49	81.67	11	18.33	41	68.33	19	31.67	90	75.00	30	25.00
Chek animal regular	52	86.67	8	13.33	56	93.33	4	6.67	108	90.00	12	10.00
Concerned with para veterinarians	50	83.33	10	16.67	55	91.67	5	8.33	105	87.50	15	12.50
Clean shed regular	58	96.67	2	3.33	56	93.33	4	6.67	114	95.00	6	5.00
Prevent animal crowd	42	70.00	18	30.00	51	85.00	9	15.00	93	77.50	27	22.50
Clean animal regularly	12	20.00	48	80.00	40	66.67	20	33.33	52	43.33	68	56.67
Mentain proper drainage	8	13.33	52	86.67	17	28.33	43	71.67	25	20.83	95	79.16
Clean teat before & after milking	42	70.00	18	30.00	51	85.00	9	15.00	93	77.50	27	22.50
Use mosquito coil	13	21.67	47	78.33	19	31.67	41	68.33	32	26.67	88	73.33

Table 2. Distribution of respondents according to use of water.

Particular Source of water	Basti						Gorakhpur						Pooled (N=120) Freq %
	For Home		Livestock		Bathing		ForHome		Livestock		Bathing		
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	
Ponds	0	0.00	30	50.00	0	0.00	0	0.00	34	56.67	0	0.00	64 53.33
Canal	0	0.00	20	33.3	12	20.00	0	0.00	15	25.00	21	35.00	68 56.67
Wells	6	10.00	0	0.00	0	0.00	2	3.33	0	0.00	0	0.00	8 6.67
Hand pump	54	90.00	10	16.67	0	0.00	58	96.67	11	18.33	0	0.00	133 110
Tube- well	0	0.00	0	0.00	48	80.00	0	0.00	0	0.00	39	65.00	87 72.50

shed. In case of Gorakhpur district that majority of respondents (86.67%) use open drain around home followed by 13.33 per cent soakage pit and 83.33 per cent used open drain for livestock shed followed by 16.67 per cent used soakage pit around livestock shed.

Same table also indicated that in pooled data majority of respondents (83.33%) use open drain around home followed by 16.67 per cent soakage pit, whereas 88.33 per cent used open drain around livestock shed followed by 11.67 per cent used soakage pit around livestock shed in the study area.

Table 4 indicated that majority of respondents (60.00%) in Basti district through indiscriminately their house waste followed by 40.00 per cent use cover pit for their home waste disposal, 70.00 per cent use cover pit for livestock waste disposal purpose, 30.00 per cent use compost pit for their animal waste whereas in case of Gorakhpur

district majority of respondents (51.67%) use covered pit their household waste followed by 48.33 per cent use through indiscriminately their home waste, 81.67 per cent use cover pit for livestock waste disposal purpose, 18.33 per cent use compost pit for their livestock waste disposal purpose.

Same table also indicate in pooled majority of respondents (54.17%) through indiscriminately their house waste followed by 45.83 per cent use cover pit for their home waste disposal, 75.83 per cent use cover pit for livestock waste disposal purpose, 24.17 per cent use compost pit for their for livestock waste disposal purpose.

DISCUSSIONS

Study revealed that regular clean shed of their animals and

Table 3. Distribution of respondents according to drainage pattern.

Particular	Basti				Gorakhpur				Pooled (N=120)			
	Open drain		Soakage pit		Open drain		Soakage pit		Open		Soakage pit	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
For House	48	80.00	12	20.00	52	86.67	8	13.33	100	83.33	20	16.67
For livestock	56	93.33	4	6.67	50	83.33	10	16.67	106	88.33	14	11.67

Table 4. Distribution of respondents according to waste disposal pattern.

Particular	Waste Disposal	Basti				Gorakhpur				Pooled (N=120)								
		Compost		Covered pit		Throwing indiscriminately		Compost		Covered pit		Throwing indiscriminately						
		Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%					
House	0	0.00	24	40.00	36	60.00	0	0.00	31	51.67	29	48.33	0	0.00	55	45.83	65	54.17
Livestock	18	30.0	42	70.00	0	0.00	11	18.33	49	81.67	0	0.00	29	24.17	91	75.83	0	0.00

regular check up of their animal's play an important role in control of zoonoses. Treatment with para veterinarians which is also helpful in control of infection with the help of proper treatments of their animals and cleaning of teat of animals prevent so many chance of infection so helpful in control of diseases.

Study revealed that majority used ponds water for livestock which may be harmful for livestock there may be a chance of infection for animals and same parasite may be enter in animals body through water. Many incidences of diseases occurs due to unsafe water source in this regards developmental agencies should take initiatives for creating awareness about safe water for livestock as well as for human beings. Deoras et al. (2004), found that the majority of animal sheds in rural areas had improper drainage, whereas in urban areas 17.2 per cent farmers were using two row systems in Rajanandgaon city of Chhattisgarh.

Study revealed that majority of respondents throw indiscriminately their house hold waste and which is harmful and create problem because dirty place is home of infectious species like bacteria, mosquitoes, fungus so harmful for our as well as for animals health. Whereas in case animal use covered pit but in place of this pit we use to make it compost for further use. Singh and Singh (2000) reported that very less percentage of livestock farmers used dewormer and due to this the per cent of calf mortality was very high in rural Haryana. Garg et al. (2005), observed that very few milkers (10%) appeared dirty at the time of milking majority of the farmers washed udder before milking their cows and full hand milking was not in practice in Baran district of

Rajasthan. Malik and Nagpaul (1999), observed that 61.10 per cent of milkers used to milk their buffaloes at a separate dry places, whereas 38.90 per cent milked at the same place, 41.70 per cent and 55.30 per cent of livestock farmers washed and cleaned the hind quarters and udder as well as teats, respectively prior to milking.

By the help of study we can says that livestock owners had low awareness regarding zoonoses and how they manage their animal and what control measures should be follow for zoonoses. This can be used to guide the development of a coordinated, efficient and effective one health approach to the guide, create awareness among livestock owners for management and control of zoonotic diseases.

CONCLUSIONS

The results from this study suggest that zoonoses can pose a significant health risk to the population and that, in some cases. The high prevalence of Japanese encephalitis in Gorakhpur and Basti district of Uttar Pradesh, further increases the risk of zoonoses, respondents through indiscriminately their house and animal shed waste, they were not provide clean water to their animals, not regular vaccinate to their animals.. House and animal shed waste provide breeding environment of zoonoses. The developmental agencies should work for creating awareness among the farming communities about harmful effect of throwing discriminately their house and animal shed waste.

Study revealed that majority of respondents had low literacy level that's why they had low awareness that how

they manage their animal and what control measures should be followed in control of zoonotic diseases and symptoms.

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