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Occupational health hazards among veterinarians working in farm sector in Karnataka

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Abstract

The present study aimed to identify the occupational health hazards among farm veterinarians of Karnataka and preventive measures taken by them against occupational hazards. An exploratory research design was adopted for the study. Thirty farm veterinarians were selected and data collection was done through structured questionnaire method. The result from the study revealed that majority of physical hazards (40.00%) encountered were found to be high whereas chemical hazards (40.00%) were found to be low and biological hazards were found to be medium (46.66%). The extent of preventive measures (46.66%) taken were found to be high. In spite of having optimal awareness on various occupational hazards, preventive measures taken are improperly practiced. It may be concluded that farm veterinarians are exposed to variety of hazardous situations during their practice, hence there is need to educate farm veterinarians during their early years of career.

Keywords: Karnataka, health hazards, occupational hazards and farm veterinarians

Introduction

A veterinarian is a practitioner of modern era, uses his or her skills and knowledge for the prevention and treatment of diseases and wellbeing of large and small animals. Such a professional would be called a veterinarian. The different categories of veterinary practice include, large/farm animal medicine, equine medicine, small/companion (Pets) animal medicine, lab animal medicine and wild/zoo animal medicine.

Occupational diseases are usually defined as diseases arising out of or in the course of employment. Veterinarians have multitude health problems, the fact which is often forgotten because of the widespread misconception that occupational health is mainly concerned with industry and industrialized countries. Occupational health is the application of preventive medicine in all places of employment. One of the declared aims of occupational health is to provide a safe occupational environment in order to safeguard the health of the employees (Babeiker, 2008) [1].

Prevention of zoonotic diseases involves recognition and quarantine of infected animals, personal hygiene, and environmental disinfection (Foil, 1998) [2]. The management of occupational health risks in veterinary practices is an important issue and failing in active health risk management systems could be due to lack of training to ensure competence with responsibilities (Souza *et al.*, 1996) [8]. It is important that veterinary personnel make their potential exposure to any infectious agent known to their physicians. An increase in awareness that some of these diseases may be associated with animals could provide a better plan for the prevention and treatment of common and uncommon zoonotic infections (Tan, 1997; Jennifer *et al.*, 2008) [9,5].

Though a few studies on occupational hazards among veterinary professionals in the country have been carried out, information on occupational hazards among farm veterinarians in Karnataka is altogether lacking. To address this lacuna, the study was initiated with the following objectives:

- To identify the occupational health hazards among veterinarians working in farm sector
- To explore the preventive measures taken by veterinarians working in farm sector against occupational hazards.

Materials and Methods

An exploratory research design is adopted for the study. A total of 30 farm veterinarians were

selected from Karnataka. A structured questionnaire was prepared and data collection was done through using simple random sampling technique. Collected data were analyzed using statistical tools viz. frequency and percentage. In the study occupational hazards are divided into three types viz. physical hazards, chemical hazards and biological hazards. Based on the response given by the farm veterinarians ranking were given to the each of the hazard. Finally all the farm veterinarians were distributed based on the occupational hazards.

Results and Discussion

Occupational hazards

a) Physical hazards

The physical hazards encountered by veterinarians working in farm sector are given in the table 1. All the farm veterinarians encountered with stamping on foot by animals as the major physical hazard followed by needle prick injuries (96.66%), kicking by animal (96.66%), slip or fall during work (86.66%), scratches (76.66%), crushing (66.66%), animal bite (43.34%), back injuries (23.34%) and fracture by animal (6.67%).

Animal having vices like pushing, goring, head butting, trampling, run over and falling on the veterinarians, injury from the interaction with the nearby animals, treating the animal without any restraining facility, while escaping from the animal attacks and bone fractures were faced more frequently during handling of animals.

The study conducted by Thigpen and Dorn (1973) reported that injuries to leg were most common among the veterinarians followed by arms, heads and other body parts. The findings are in partial agreement with Hafer *et al.* (1996) and Pillai (2011) [3, 7].

Table 1: Physical hazards encountered by veterinarians working in farm sector

Sl. No.	Physical hazards	Total (n=30)		Rank
		Encountered	Not encountered	
		F (%)	F (%)	
1	Animal bite	13 (43.34)	17 (56.66)	VI
2	Back injuries	7 (23.34)	23 (76.66)	VII
3	Scratches	23 (76.66)	7 (23.34)	IV
4	Crushing	20 (66.66)	10 (33.34)	V
5	Fracture by animal	2 (6.67)	28 (93.33)	VIII
6	Needle prick injuries	29 (96.66)	1 (3.34)	II
7	Kicking by animals	29 (96.66)	1 (3.34)	II
8	Injury by horn	0	30 (100.00)	
9	Stamping on foot	30(100.00)	0	I
10	Slip/fall during work	26 (86.66)	4(13.34)	III
11	Others			
	a) Accidental injury	1 (3.34)		IX
	b) Accidental Mounting	1 (3.34)		IX

b) Chemical Hazards

The data from table 2 revealed that majority of farm veterinarians exposed to chemical hazards were dust (86.66%) followed by frost bite (50.00%), disinfectants (46.67%), fumigants (46.67%), lime (43.33%), pesticides or insecticides (43.33%), dipping chemicals (43.33%), acaricides (30.00%), corrosive agents (26.67%), scald (23.34%), formalin (23.34%), hazardous drugs (20.00%), sedative (13.34%) and anesthetic gas (3.34%).

Dusty environment in the farm sheds and feed units might be the reason and failure to take precautionary measures such as wearing mask, gloves, apron during handling chemicals,

could have contributed to some adverse reactions. The findings are similar with the findings of Hafer *et al.* (1996) and Nienhaus *et al.* (2005) [3, 6].

Table 2: Chemical hazards exposed by veterinarians working in farm sector

Sl. No.	Chemical hazards	Total (n=30)		Rank
		Exposed	Not exposed	
		F (%)	F (%)	
1.	Disinfectants	14 (46.67)	16 (53.33)	III
2.	Hazardous drugs	6 (20.00)	24 (80.00)	VIII
3.	Anesthetic gas	1 (3.34)	29 (96.66)	X
4.	Euthanizing agents	0	30 (100.00)	
5.	Dust	26 (86.66)	4 (13.34)	I
6	Fumigants	14 (46.67)	16 (53.33)	III
7	Sedative	4 (13.34)	26 (86.66)	IX
8	Pesticides/Insecticides	13 (43.33)	17(56.67)	IV
9	Formalin	7 (23.34)	23 (76.66)	VII
10	Dipping chemicals	13 (43.33)	17 (56.67)	IV
11	Lime	13 (43.33)	17 (56.67)	IV
12	Scald	7 (23.34)	23 (76.66)	VII
13	Corrosive agents	8 (26.67)	22 (73.33)	VI
14	Acaricides	9 (30.00)	21 (70.00)	V
15	Frost bite	15 (50.00)	15 (50.00)	II

c) Biological hazards

The biological hazards came across by veterinarians working in farm sector are given in the table 3. The major bacterial hazards encountered by farm veterinarians were *E. coli* (20.00%), staphylococcus (16.67%), salmonella (16.67%), brucellosis (10.00%), leptospirosis (3.34%), tuberculosis (3.34%), shigellosis (3.34%) and *Clostridium tetani* (3.34%). The viral diseases encountered were avian influenza (10.00%) and herpes virus (3.34%). The fungal disease infestation was dermatophytes (20.00%) and parasitic disease infestations were giardia (30.00%) and entomaeaba (13.34%).

Frequency of occurrence of biological hazards among veterinarians working in farm sector is found to be low as the necessary preventive measures adopted by them.

The findings are in line with the findings of Hafer *et al.* (1996) [3], Nienhaus *et al.* (2005) [6] and Jackson and Villarroel (2012) [4].

Table 3: Biological hazards came across by veterinarians working in farm sector

Sl. No.	Biological Hazards	Total (n=30)		Rank
		Affected	Not affected	
		F (%)	F (%)	
	Bacterial			
1	Brucellosis	3 (10.00)	27 (90.00)	V
2	Anthrax	0	30 (100.00)	
3	Tuberculosis	1 (3.34)	29 (96.66)	VI
4	Campylobacteriosis	0	30 (100.00)	
5	Chlamydiosis	0	30 (100.00)	
6	Leptospirosis	1 (3.34)	29 (96.66)	VI
7	Salmonellosis	5 (16.67)	25 (83.33)	III
8	Shigellosis	1 (3.34)	29 (96.66)	VI
9	Botulism	0	30 (100.00)	
10	<i>Clostridium tetani</i> (tetanus)	1 (3.34)	29 (96.66)	VI
11	Mycobacterium	0	30 (100.00)	
12	Yersinia	0	30 (100.00)	
13	Listeriosis	0	30 (100.00)	
14	Staphylococcus	5 (16.67)	25 (83.33)	III
15	<i>E. coli</i>	6 (20.00)	24 (80.00)	II
17	Paratuberculosis	0	30 (100.00)	
	Viral			

	Rabies	0	30 (100.00)	
	Avian influenza	3 (10.00)	27 (90.00)	V
	Japanese encephalitis	0	30 (100.00)	
	Hanta virus	0	30 (100.00)	
	Herpes virus	1 (3.34)	29 (96.66)	VI
	Swine influenza	0	30 (100.00)	
	Pox viruses	0	30 (100.00)	
	Fungal			
1	<i>Sporothrix schenckii</i>	0	30 (100.00)	
2	Dermatophytes (ringworm)	6 (20.00)	24 (80.00)	II
3	Blastomycosis	0	30 (100.00)	
	Parasitic			
1	Cryptosporidiosis	0	30 (100.00)	
2	Giardia	9 (30.00)	21 (70.00)	I
3	Entomaeaba	4 (13.34)	26 (86.66)	IV
4	Hymenolepis spp (tape worm)	1 (3.34)	29 (96.66)	VI

Preventive measures taken by farm veterinarians against occupational hazards

The preventive measures taken by farm veterinarians were given in the table 4. The major preventive measures taken were deworming animals (96.66%) and use of appropriate handling technique (96.66%) followed by vaccination to animals (93.33%), personal vaccination (86.66%), hand wash (86.66%), foot dips (86.66%), use of sleeve gloves (83.33%), restraining of animals (83.33%), sterilization of equipments (80.00%), sanitation (73.33%), fumigation (70.00%), use of gloves (66.66%), use of face mask (60.00%) and use of gumboots (60.00%) and wearing apron (56.66%).

Table 4: Preventive measures taken by the farm veterinarians against occupational hazards

Sl. No.	Preventive measures	Total (n=30)		Rank
		Taken	Not taken	
		F (%)	F (%)	
1	Hand wash	26 (86.66)	4 (13.34)	III
2	Use of gloves	20 (66.66)	10(33.34)	VIII
3	Use of face mask	18 (60.00)	12(40.00)	IX
4	Use of sleeve gloves	25 (83.33)	5 (16.67)	IV
5	Wear apron	17 (56.66)	13(43.34)	X
6	Use of gumboots	18 (60.00)	12(40.00)	IX
7	Vaccination to animals	28 (93.33)	2 (6.67)	II
8	Using appropriate handling techniques	29 (96.66)	1(3.34)	I
9	Sterilization of equipments	24 (80.00)	6 (20.00)	V
10	Sanitation	22 (73.33)	8 (26.67)	VI
11	Fumigation	21 (70.00)	9 (30.00)	VII
12	Personal vaccination	26 (86.66)	4 (13.34)	III
13	Foot dips	26 (86.66)	4 (13.34)	III
14	Deworming the animals	29 (96.66)	1(3.34)	I
15	Restraining of animals	25 (83.33)	5 (16.67)	IV

It is a good indication that all the farm veterinarians had adopted adequate preventive measures. The findings are in a line with the findings of Hafer *et al.* (1996) [3].

Distribution of farm veterinarians based on the occupational hazards

The result from the table 5 revealed that majority of physical hazards (40.00%) encountered by veterinarians working in farm sector were found to be high, whereas in case of chemical hazards (40.00%) it was found to be low and biological hazards were found to be medium (46.66%). In case of preventive measures (46.66%) taken was found to be high.

The risk of occupational hazards one has to face as the job

demands more, still the lot of scope should be given to overcome by the hazards.

Table 5: Distribution of veterinarians working in farm sector based on the occupational hazards

Sl. No.	Occupational hazards	Category	Respondents	
			F	%
1	Physical Hazards	Low	7	23.34
		Medium	11	36.66
		High	12	40.00
2	Chemical Hazards	Low	12	40.00
		Medium	11	36.66
		High	7	23.34
3	Biological Hazards	Low	7	23.34
		Medium	14	46.66
		High	9	30.00
4	Preventive measures	Low	6	20.00
		Medium	10	33.34
		High	14	46.66

Conclusion

The veterinarians working in farm sector has come across with various occupational hazards. The physical hazards, biological hazards and chemical hazards encountered by farm veterinarians were found to be high, medium and low respectively. In spite of having optimal awareness on various occupational hazards, preventive measures taken are improperly practiced. It may be concluded that farm veterinarians are exposed to variety of hazardous situations during their practice, hence there is need to educate them during their early years of career.

Recommendations

- Awareness on occupational hazards to be incorporated in the under graduate programmes.
- Regular prophylactic vaccinations against the prevalent zoonotic diseases for all veterinarians along with regular medical check-ups must be made mandatory.
- Organizing training and seminars is recommended at the university campus on occupational hazards.
- Medical health insurance and free medical facilities are to be extended to veterinarians.

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