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Research Article

ATTITUDE OF VETERINARIANS TOWARDS ANIMAL USE AND THEIR KNOWLEDGE ABOUT ANIMAL WELFARE LAWS

PRADEEP KUMAR*, GAUTAM, EKTA RANI and RAKESH KUMAR
Department of Veterinary and Animal Husbandry Extension Education,
College of Veterinary and Animal Sciences, LUVAS, Hisar

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ABSTRACT

This study explores the attitudes of veterinarians in Haryana, India, toward animal use and their knowledge of prevalent animal welfare laws. A structured questionnaire was administered to veterinary professionals working in public organizations, including government hospitals and research institutes. The antecedent characteristics likely to affect the attitude and knowledge were also included in the study. The Animal Attitude Scale was used to measure the attitude of respondents. The Prevention of Cruelty to Animals Act 1960 was defined as universe of content to ascertain their knowledge level. The questionnaire containing the relevant scale and questions was emailed to randomly chosen respondents. The response was obtained through Google-form. Nearly half of respondents chose to respond back. It was found that respondents were having moderately favourable Attitude towards animal use. However, there were significant variations in respondents' attitude score indicating varying shades of opinion. The attitude was significantly associated with belief in animal mind. The results indicate that veterinarians exhibit a moderately favourable attitude toward animal use, with variations influenced by belief in animal mind and professional experience. Additionally, respondents demonstrated a relatively high level of knowledge about animal welfare laws. The relationship between BAM and attitudes toward animal use underscores the ethical complexity faced by veterinary professionals. Those with higher BAM scores tend to demonstrate greater concern for animal welfare, aligning with previous research that associates BAM with reduced support for animal-based research and increased empathy toward animals. The study highlights the ethical complexities faced by veterinarians and underscores the need for enhanced education on animal welfare legislation and ethical considerations. It is argued that comparative studies across different regions and cultures could provide a more comprehensive understanding of the factors shaping veterinary perspectives on animal use and welfare.

Keywords: Animal Welfare Laws, Haryana, Veterinarians

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Veterinarians play a pivotal role in ensuring animal welfare, acting as intermediaries between human interests and the ethical treatment of animals in various sectors, including agriculture, biomedical research and companion animal care. Their attitudes toward animal use are shaped by professional training, ethical considerations and societal expectations, all of which influence their decision-making and advocacy efforts. Research suggests that veterinarians hold diverse perspectives on animal use, often influenced by their area of specialization, cultural background and personal beliefs (Mellor *et al.*, 2020). Yet, ethical dilemmas inherent in balancing animal welfare with human interests often challenge veterinarians, leading to documented moral stress and role conflicts (Batchelor and McKeegan, 2012). These tensions raise critical questions about their personal attitudes toward animal use and their knowledge of evolving ethical, legal and scientific frameworks.

Knowledge gaps further add to the complexity. A survey of veterinary professionals found that while most recognize the ethical implications of animal sentience, many lack familiarity with contemporary welfare legislation or alternatives to animal use, such as *in vitro* models (Knight, 2014). This discrepancy is concerning, as veterinarians are often primary educators for clients and policymakers on animal welfare issues (Hanlon *et al.*, 2017). Studies indicate that veterinarians with extensive training in animal ethics and welfare science demonstrate a higher level of concern for animal well-being and are more likely to support policies aimed at reducing animal suffering (Main *et al.*, 2014). However, knowledge levels vary significantly among veterinary professionals, with some studies highlighting gaps in awareness of international animal welfare standards and ethical guidelines (Mullan *et al.*, 2017). Given the increasing global emphasis on animal welfare and ethics, there is a growing need to assess how well veterinarians are equipped to address these issues in their professional practice.

There is a small but growing body of literature devoted to factors related to these attitudes. Variables known to influence individual differences in attitudes toward animals include gender (Driscoll, 1992; Gallup and Beckstead, 1988; Herzog *et al.*, 1991; Kellert and Berry, 1987) demographic variables such as educational level, geographic region, age and race (Kellert, 1988); early experience with pets (Paul and Serpell, 1993) beliefs about animal mentality (Herzog and Galvin, 1997) and religious affiliation (Bowd and Bowd, 1989). But there is paucity of

*Corresponding author: drprdpunia@gmail.com

studies on attitude towards animal use and knowledge about prevalent animal welfare laws involving veterinarians in India. With this background, the present study was conducted on veterinary professionals working in Haryana in various institutes and government hospitals to measure their attitude towards animal use and ascertain knowledge about welfare laws.

MATERIALS AND METHODS

The current study was carried out on veterinarians working in public organizations located in Haryana state. The faculty of Lala Lajpat Rai University of Veterinary and Animal Sciences, Hisar (LUVAS), other Veterinary Institutes located in the State including Central Institute for Research on Buffaloes (CIRB), Hisar, National Research Centre on Equines (NRCE), Hisar and National Bureau of Animal Genetic Resources (NBAGR), Karnal and veterinary professionals employed with State government constituted the study's universe.

It was estimated that nearly 1500 veterinarians in the State with the Animal Husbandry department alone accounting for around 1150 of them. The respondents were randomly selected using simple lottery method after compiling a list of veterinary professionals working in the state from different sources like Haryana Veterinary Council, Institutes websites, etc. Data was collected using an online questionnaire through Google-form. Verified e-mail addresses of respondents were obtained from the official websites of various institutes and Haryana Veterinary Council. The objectives of study were explicitly stated ensuring that respondents perceived the questions correctly. After having compiled a list of 1174 professionals, the questionnaire was e-mailed to half the number (i.e. 537 respondents) selected randomly. A total 198 veterinary professionals working with State Government and 57 scientists working in various institutes responded back making it 255 respondents. Data collection continued for 46 days starting from August 8th, 2023 to September 24th, 2023. In total 279 responses were received. Out of these 24 responses were not included in the study owing to errors in filling the form and casually marking the same responses for all questions making the response invalid. Out of total, 258 did not respond. Reminders were sent for improved response rate.

The attitude was measured using 6 items Animal Attitude Scale developed by Herzog *et al.* (1991). Earlier, Wells and Hepper (1997) concluded that people can hold different attitudes towards different ways in which animals are used, for example people may be less supportive of uses that lead to death of animals (such as experimentation) compared to non-lethal uses (such as for entertainment) Consequently, in the present study attitudes toward six different types of animal use were included e.g. using animals for personal decoration, entertainment, experimentation in the classroom, medical and cosmetic research for any other purpose that humans see fit. Scoring was done on a five-point continuum. To assess the knowledge of respondents about prevalent animal welfare laws,a questionnaire was prepared using the Prevention of Cruelty to Animals Act, 1960 as universe of content. The PCA Act is divided into 6 chapters which pertain to different areas like breeding, transportation, illegal practices and experimentation, etc. Two items from each chapter were selected randomly thus making it 12 items in all (Table 1). Each item was awarded equal weightage while calculating the knowledge score.

RESULTS AND DISCUSSION

The observed range of age of the total respondents was 27-62 years thus indicating that all age groups were fairly represented in the study. More than two third of respondents were males and practicing veterinarians with more than half of respondents were having longer service experience of 10 years or higher. Also, a majority of respondents were having up to five years of experience of pets.

Attitude of respondents towards animal use

Animal Attitude Scale used in the study was having a minimum and maximum possible score of 6 and 30, respectively. The minimum score obtained by the respondents was 10 while the maximum was 30. The average score of all the respondents was 20.02 indicating moderately favourable Attitude towards animal use. The frequency distribution is depicted in the Fig. 1. For appropriate analysis, the respondents were categorized by making three classes on the basis of difference between observed maximum and minimum scores. Significant variations in the mean scores of all the three categories were observed (Table 2). Nearly, two third of the respondents belonged to middle score category while one third constituted remaining two categories (low and high). On the whole, respondents were having a moderately favourable Attitude towards animal use. Earlier, Menor-Campos *et al.* (2019) studied veterinary students and reported that the use of animals for “Entertainment” and “Veterinary Issues” raised the most concern for them, while the use of animals for “Research” was of least concern among four animal-use categories. In another study nearly all veterinary and medical students (94 per cent) found it morally acceptable to use animals in research

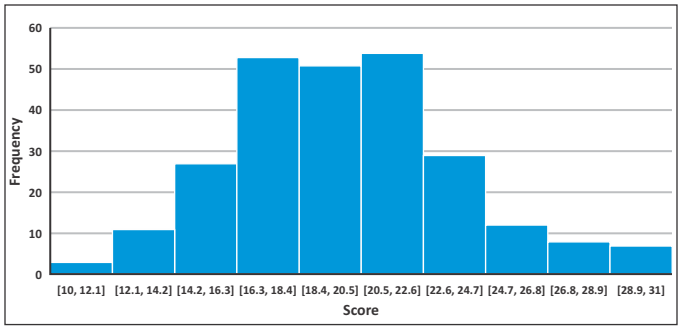

Fig. 1. Histogram depicting frequency distribution of respondents' Attitude towards animal use.

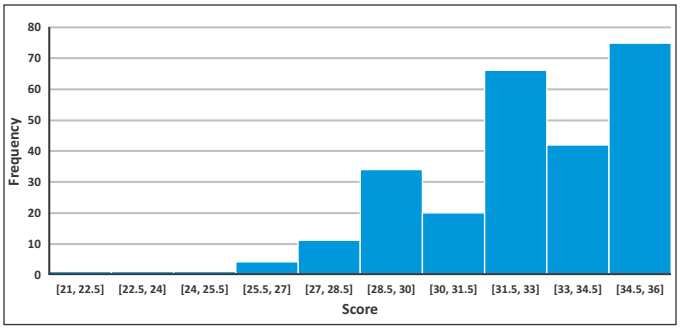

Fig. 2. Histogram depicting frequency distribution of respondents' knowledge about animal welfare laws.

Table 1. Depicting items used for assessment of knowledge of respondents about prevalent animal welfare laws

Sr. No.	Statements
1.	Animals Welfare Board of India (AWBI) was established under Prevention of Cruelty to Animals Act, 1960.
2.	If the owner neglects to exercise any dog habitually chained up or closely confined is also considered cruelty.
3.	Any person performing phooka or doom dev upon any milch animal is punishable with imprisonment for upto 2 years.
4.	Average space required per cattle of above 400 kg in vehicle transport shall not be less than 2 square meters.
5.	Euthanasia can be adopted if during the experimental procedure animal has been left with a recurring pain and suffering.
6.	No bird shall be captured for the purpose of sale, export or for any other purpose except by net method.
7.	Every breeder shall ensure that pups less than 8 weeks of age are not sold.
8.	Society for Prevention of Cruelty to Animals (SPCA) in each district is to be established by every state government.
9.	Practices such as injecting oxytocin into milch animals are prohibited at animal markets.
10.	A person who is charged under the Act is prohibited adoption of animals from the infirmary, animal welfare organisation or gaushala.
11.	Monkeys from one trapping area shall not be allowed to mix with monkeys from any other trapping area.
12.	Cattle should be limited to distance of 30 km per day by foot transport.

Table 2. Classification of respondents on the basis Attitude towards animal use and knowledge level

Sr. No.	Category	Total (n=255)		Mean ± SD	F (Calculated)
		Frequency (%)	Mean Score		
Attitude towards animal use score	Low (10-16)	41 (16.07)	14.83	20.02±3.72	366.08**
	Medium (17-23)	172 (67.45)	19.79		
	High (24-30)	42 (16.47)	26.00		
Knowledge about animal welfare laws score	Low (9-14)	3 (1.18)	11.33	32.76±2.63	339.19**
	Medium (15-19)	69 (75.29)	17.61		
	High (20-24)	183 (14.12)	22.10		

n= number of respondents; ** Significance level at 1%

and believed it to be a necessity in order to treat human diseases (Hagelin *et al.*, 2000).

Knowledge about animal welfare laws

The average score of respondents indicated that they were having fairly high level of knowledge (Fig. 2). It can be understood given the nature of duties and professional education of respondents. The respondents were categorized in three classes of equal interval based on minimum and maximum score obtained. (Table 2). The knowledge level of respondents lying in all the three categories varied significantly as indicated by F value. Highest score of participants was about "Practices such as injecting oxytocin into milch animals are prohibited at animal markets", whereas lowest score obtained was for item- "A person who is charged under the Act is prohibited from adoption of animals from the infirmary, animal welfare organization or gaushala". It is contrary to findings earlier reports available in the literature. For example, Magnani *et al.* (2017), reported that for current legislation, there was a general lack of knowledge among veterinary students. Similarly, Myaki *et al.* (2022) reported that students lacked knowledge about animal bioethics legislation. Varoni *et al.* (2023) found that among the students attending scientific, medical, and biomedical

Table 3. Classification of respondents on the basis of variables affecting Attitude and Knowledge

Sr. No	Variable	Category(No. of respondent)	Dependent Variables Score(Mean ± SD)	
			Attitude towards animal use	Knowledge about animal welfare laws
1.	Place of posting and Designation	Scientist (57)	19.54±3.68	20.54±3.10
		Veterinarian (198)	20.15±3.73	20.82±2.48
		p value	0.278	0.489
2.	Age (years)	Young 27-38 Years (158)	20.06±3.73	21.04±2.63
		Middle 39-50 Years (90)	19.96±3.74	20.28±2.64
		Old Above 51-62 Years (7)	19.71±3.64	20.57±1.62
		p value	0.954	0.089
3.	Gender	Male (215)	19.97±3.77	20.60±2.71
		Female (40)	20.28±3.48	21.58±1.96
		p value	0.632	0.032*
4.	Highest Professional Education	B.V.Sc. (84)	20.06±4.02	20.55±2.75
		M.V.Sc. (107)	20.49±3.64	21.00±2.31
		PhD and Post Doc (64)	19.17±3.35	20.63±2.96
		p value	0.081	0.449
5.	Length of Service Experience	Low 1-12 Years (181)	20.11±3.78	20.88±2.70
		Medium 13-24 Years (68)	19.91±3.42	20.31±2.45
		High 25-37 Years (6)	18.33±5.35	22.00±1.41
		p value	0.499	0.154
6.	Length of Research Experience	No Experience (86)	20.59±4.11	20.62±2.58
		1-19 Years (162)	19.72±3.46	20.81±2.69
		20-39 Years (7)	19.71±4.31	21.14±1.86
		p value	0.210	0.790
7.	Pet keeping Experience	No Experience (115)	19.84±3.33	20.70±2.73
		1-20 Years (130)	19.98±3.94	20.71±2.57
		21-40 Years (10)	22.40±4.60	22.00±1.94
		p value	0.113	0.313
8.	Belief in Animal Mind (BAM)	Low 9-12 (29)	18.52±3.02	21.07±2.23
		Medium 13-16 (144)	19.60±3.72	20.47±2.43
		High 17-20 (82)	21.28±3.63	21.15±3.04
		p value	0.001**	0.142
9.	Extraversion	Low 14-22 (32)	19.88±3.82	20.47±2.65
		Medium 23-31 (168)	20.30±3.73	20.66±2.74
		High 32-40 (55)	19.22±3.57	21.22±2.21
		p value	0.167	0.317
10.	Agreeableness	Low 26-32 (47)	18.96±3.40	19.87±2.92
		Medium 33-38 (109)	20.12±3.63	20.64±2.65
		High 39-45 (99)	20.40±3.90	21.30±2.34
		p value	0.083	0.007*
11.	Religiousness	Low 5-12(64)	19.86±4.00	19.94±3.152
		Medium 13-21(119)	20.12±3.63	21.03±2.37
		High 22-29 (72)	19.99±3.66	21.04±2.39
		p value	0.902	0.015*

courses just 21.2% of respondents had heard about the concept of 3Rs (Replacement, Reduction and Refinement). The difference could perhaps be attributed to the fact that earlier studies focussed on students whereas the present study was conducted on veterinarians with a significant length of service experience.

Relationship between dependent variables and antecedent

characteristics of respondents

It can be seen that not many antecedents were associated with the dependent variable in the present study except Belief in Animal Mind (BAM) in table 3. It is worth mention here that BAM is the term used for how we attribute to animal's mental capacities such as intellect, the ability to reason and feelings of emotion (Hills 1995). If one believes that certain species are likely to experience internal thoughts and feelings, then subjecting them to discomfort as part of animal-based research may seem unacceptable. This line of reasoning would suggest that people should be less accepting of research using species rated highly in BAM, particularly non-human primates. Earlier, Knight and Barnett (2008) concluded that people tend to differentiate between animals on the basis of the perceived mental capacity of each animal and the participant's familiarity with that animal. It seems likely that one reason for the relationship between BAM and attitudes towards animal use is that lower levels of BAM mean that people consider animals more as mechanical objects than thinking, feeling creatures and thus support animal use since the animals involved cannot be mentally harmed by such use. Higher levels of BAM introduce a moral dilemma to people, since they have to decide whether pain and/or distress inflicted on the animal (that they believe the animal is capable of experiencing) can be justified (Knight *et al.*, 2004). BAM is a relatively reliable predictor of attitudes toward the human use of animals (Hills, 1995; Herzog and Galvin, 1997; Knight *et al.*, 2003; Schuppli, 2011). In a study, BAM appeared to explicate more of the variation in people's attitudes than personal characteristics, such as sex (Knight and Barnett, 2008). It negatively correlated with support for animal use and positively correlates with concern for animal welfare and humane behaviour toward animals (Broida *et al.*, 1993), and empathy toward other humans and animals (Hill, 1995).

Earlier many other variables have been reported to have effect on attitude towards animal use. For example, women having more positive attitude than men Gu *et al.* (2023), advanced medical and veterinary education being positively associated with approval of the use of animals in research (Hagelin *et al.*, 2000, Finnie *et al.*, 2023). Similarly, experience of pet ownership was reportedly strongly associated with more general values and positive attitudes toward animals Busch *et al.* (2022); Gu *et al.* (2024). Individuals scoring high on agreeableness and conscientiousness expressed more positive attitudes toward animals (Zalaf and Egan, 2017). Kruse (1999) found that religious practice was negatively correlated with positive animal attitudes and people who were either not religious at all or very religious were the ones who most supported the killing of animals (Lifshin *et al.*, 2018). It is quite probable that the observed differences could be due to varying cultural differences as most of such reports are from western countries. Also, it is notable that significant antecedents like gender, agreeableness and religiousness of respondents did significantly affect their knowledge scores (Table 3).

CONCLUSION

The present study provides valuable insights into veterinarians' attitudes toward animal use and their knowledge of prevalent animal welfare laws in Haryana, India. The findings indicate that while veterinarians generally exhibit a moderately favourable attitude toward animal use, significant variations exist among individuals, influenced by factors such as belief in animal mind (BAM) and professional experience. Additionally, the study highlights that veterinarians possess a relatively high level of knowledge about animal welfare laws, which can be attributed to their professional education and responsibilities. The findings of this study emphasize the importance of integrating robust animal welfare education into veterinary curricula and professional training programs. Given that veterinarians serve as key advisors to policymakers, farmers and the public, enhancing their knowledge and ethical reasoning skills is critical for improving animal welfare standards. Future research should explore the long-term impact of education and professional development initiatives on veterinarians' attitudes and knowledge. Additionally, comparative studies across different regions and cultures could provide a more comprehensive understanding of the factors shaping veterinary perspectives on animal use and welfare. Overall, this study contributes to the growing body of literature on veterinary ethics and animal welfare by shedding light on the attitudes and knowledge of veterinary professionals in India. Strengthening educational frameworks and fostering ethical discourse within the profession can help veterinarians navigate the moral challenges inherent in their work, ultimately advancing animal welfare both nationally and globally.

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