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Satisfaction of Dairy Farmers from Para-veterinary Services: An Exploratory Study

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ABSTRACT

With an acute shortage of manpower delivering animal health service in India, a concern for efficient delivery of minor veterinary services have gained popularity among stakeholders. The present study aims to measure the satisfaction of farmers towards para-veterinary services in Mathura, Hisar, Jaipur, and Ahmadnagar districts of states namely, Uttar Pradesh, Haryana, Rajasthan, and Maharashtra respectively. A total of 160 dairy farmers were studied under the random sampling method of investigation. Satisfaction towards tasks under minor veterinary services was compared and ranked using weighted mean scores among different states. From Pearson's product-moment correlation, among various socio-economic variables, education of farmers was found to have a negative relationship with the level of satisfaction of farmers towards para-veterinary services, while the distance from veterinary hospital/ dispensary was found positively correlated. Age and landholding were found non-significantly associated with satisfaction of farmers towards minor- veterinary services. It was found that 44.38 per cent of respondents were moderately satisfied, followed by 35.62 per cent respondents revealing a high level of satisfaction towards para-veterinary services.

INTRODUCTION

Satisfaction or dissatisfaction refers to the client's judgment on quality/quantity of service in all its aspect (Tamborini, 2010). Satisfaction is a subjective and connotative term that varies with person and situation due to the influence of various internal and external factors (Stangor and Walinga, 2014). Satisfaction could be operationalized as fulfillment or gratification of a desire or need. The preference and satisfaction of dairy farmers toward a particular veterinary service provider depend upon the location, distance, livestock holding, capacity to pay, and quality of services (Rewani et al., 2019). Socio-economic conditions of farmers affect their choice of the animal health service provider. Matching of choice with fulfilled needs, experience, and expectations of dairy farmers' result in varying levels of satisfaction towards the service provider (Ahuja and Redmond, 2001). Generally, farmers having good socio-economic conditions prefer veterinarians over para-vets and other animal health delivery channels because they could pay the high transaction cost of veterinarians over para-vets (Mirajkar et al., 2011). The farmers of the 'medium' and 'high' livestock potential are, in general, the next best in their satisfaction level towards the services provided by para-vets. For all categories of para-vets, it would be imperative to have comprehensive broad-based training for production services. The skills and proficiency of para-vets in livestock management advice, fodder development, castration, and use of local medicine along with the organization of camps were perceived to be of inferior quality by most of the stakeholders in livestock service delivery, especially the farmers. This results in poor satisfaction of farmers to these services (Sastry and Raju, 2008). Para-veterinarians were ranked lower than government and private veterinarians respectively for the quality of services provided. Indeed, quality was perceived by the vast majority of farmers as their most preferred attribute of animal health service (AHS) in the choice of a service provider. Price as an attribute was rated quite low concerning the quality of service and even other attributes like proximity, which implied that if the quality of AHS

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was guaranteed, the price would not be an important determinant affecting the choice of farmers for service providers and charges paid for it.

The level of satisfaction of farmers towards para- veterinary services is influenced by various other factors such as distances traveled by farmers to reach dispensaries and in turn the time taken by para-vets to reach them. Animal Health Service (AHS) providers are expected to recognize the expectation of livestock farmers towards services, and its monetary value as a willingness to pay (Turkson, 2009). Since para-vets perform major tasks delegated to them under minor-veterinary services, it becomes of utmost importance to assess the satisfaction of farmers towards animal husbandry services rendered by them. Thus, an attempt was done to measure the satisfaction of farmers towards animal health services and analyze the socio-economic variables of farmers affecting their satisfaction towards minor-veterinary services.

METHODOLOGY

The study was conducted in four states of India namely, Rajasthan, Uttar Pradesh, and Maharashtra, and Haryana. Selection criteria of states was highest livestock population, the number of para-vet schools, and rank in milk production among various states of India. The selection of district was based on the highest number of para vet schools compared to other districts of the state. Dairy farmers having at least two milch animals, and availing para-veterinary services for at least two years were selected as respondents based on random sampling technique. Pearson's product-moment correlation was used to measure the statistical relationship/ association between socio-economic variables of farmers and their level of satisfaction towards para-veterinary services. p-value was computed and the significance of variables was decided for less than 0.05, the variable was found significantly associated with the level of satisfaction of farmers towards para-veterinary services. Weighted mean score was used to establish the comparison vis-à-vis satisfaction of farmers towards major tasks of para-veterinary services between the four different districts selected for the study. Weighted mean score was computed by the following formula:

$$a_w = \Sigma mW / W$$

Where, a_w = Weight mean score, mW = Product of weight and measurement and W = Total number of observations

RESULTS AND DISCUSSION

Para-vets mainly used three modes (injection, dipping, and tablets) for the control of parasites. For control of tick and mites, 85.62 per cent of para-vets preferred dip/ spray, and 10 per cent opted for injection mode (Table 1). For control of endoparasitic worm, cent percent para-vets opted injection and oral mode (tablets) of drug administration. While for ectoparasitic worms, 36.25 per cent preferred dipping and 63.75 per cent para-vets opted for injection mode. For control of flies, all the respondents preferred the dipping/ spray mode of control. Respondents revealed that the incidence of FMD was more than 70-75 per cent, followed by ectoparasitic infection more than 80- 85 per cent, and endoparasitic infection more than 70.00 per cent in the study area. This finding aligned with the reporting of Muthiah et al., (2013) who conducted a study on animal health care in the Himalayan region. The susceptibility of animals to diseases such as brucellosis and FMD increased if proper vaccination was not followed (Boral et al., 2009; Kaur et al., 2006).

Table 1. Various methods preferred by para-vets to control parasitic infestation

Parasites	Mode of control		
	Injection	Dipping/spray	Tablets
Ticks and mites	16 (10.00)	137 (85.62)	07 (04.35)
Worm (Endo-parasites)	00 (00.00)	00 (00.00)	160 (100.00)
Worm (Ecto-parasites)	102 (63.75)	58 (36.25)	00 (00.00)
Flies	00 (00.00)	160 (100.0)	00 (00.00)

**Ivermectin in form of injection (for ectoparasites), Albendazole, Fenbendazole, Piperizin, and Botash in form of spray for worm (ectoparasites).*
(Figures in parenthesis indicate percentage)

A perusal of Table 2 revealed that awareness of para-vets regarding the color code of semen straw was found high for HF, indigenous cattle, and buffalo, while least for Jersey breed cattle. It was found that 63.75, 58.12 and 61.25 per cent of para-vets were aware of straw color codes for HF, indigenous cattle, and buffalo respectively. The reason for their low level of awareness (38.12%) about the color code of the Jersey breed was that very few farmers sought this breed in Rajasthan, Maharashtra, and Haryana, while it was prevalent in Uttar Pradesh and Bihar. Moderate demand of HF CB semen straw and low demand of Jersey resulted in moderate (54.37%) and low (38.12%) levels of awareness about the color code of straw respectively.

Table 2. Respondents' awareness about AI straw color for various breeds (in perspective of para-vets)

Breed	Straw color	Awareness
Holstein	Pink/ Rose	102 (63.75)
HF CB	Light green	87 (54.37)
Jersey	Yellow	61 (38.12)
Indigenous cattle	Orange	93 (58.12)
Buffalo	Grey	98 (61.25)

(Figures in Parenthesis indicate percentage)

A perusal of Table 3 revealed that in the study area, overall satisfaction of farmers towards artificial insemination falling in the category of satisfied to highly satisfied was 46.25 per cent, followed by 23.13 per cent respondents with a moderate level of satisfaction. For pregnancy diagnosis, about 41.88 per cent of respondents were having their level of satisfaction ranging from high to very high, while 37.51 per cent revealed low to very low level of satisfaction towards the task. Similarly, for deworming and vaccination more than 45.00 per cent of farmers had their level of satisfaction ranging from high to very high. The findings of the study aligned with reporting of Sastry and Raju (2008) who revealed that para-vets were found to be quite skillful and doing a satisfactory job in services like AI, first aid, vaccination, and deworming as perceived by most of the stakeholders. For castration services, 40.63 per cent of farmers revealed high to very high level of satisfaction. The level of satisfaction towards minor surgical treatment was average in

Table 3. Satisfaction of farmers towards major services performed by para-vets

S.No.	Roles and services	Very high	High	Moderate	Low	Very low	Geometric mean	Rank
1.	AI	34 (21.25)	40 (25.00)	37 (23.13)	30 (18.75)	19 (11.88)	36.07	I
2.	Pregnancy Diagnosis	33 (20.63)	34 (21.25)	33 (20.63)	33 (20.63)	27 (16.88)	33.20	IV
3.	Castration	28 (17.50)	37 (23.13)	31 (19.38)	30 (18.75)	34 (21.25)	31.67	V
4.	Deworming	34 (21.25)	41 (25.63)	35 (21.88)	29 (18.13)	21 (13.13)	34.53	III
5.	Vaccination	37 (23.13)	41 (25.63)	37 (23.13)	23 (14.38)	24 (15.00)	34.80	II
6.	Minor surgical treatment	27 (16.88)	30 (18.75)	32 (20.00)	39 (24.38)	32 (20.00)	30.80	VI
7.	Advice and extension roles	20 (12.50)	28 (17.50)	30 (18.75)	44 (27.50)	38 (23.75)	28.53	VII

(Figures in parenthesis indicate percentage)

which nearly 45 per cent of farmers were having low to very low level of satisfaction towards the role (Table 3). However, the satisfaction of farmers towards extension and advisory services was not up to mark as half of respondents were having satisfaction level ranging from low to very low towards it. Similar results were reported by Slathia et al., (2012) whereas it was stressed that for maintaining trust among the farming community requires induction of professionally qualified personnel and their regular trainings.

Artificial insemination service ranked first in terms of client satisfaction, followed by vaccination and deworming which ranked second and third respectively based on the geometric mean scores for satisfaction criteria on a five-point continuum (Table 4). It was found that pregnancy diagnosis ranked fourth in terms of satisfaction as revealed by farmers, followed by castration, and minor surgical treatment which received fifth and sixth rank respectively based on geometric mean score. Among the classified seven types of roles and services, the satisfaction of farmers towards extension and advisory services provided by para-vets was found minimum which accounted for the last rank.

The level of satisfaction of farmers towards various roles and services provided by para-vets under the domain of minor veterinary services has been delineated. A perusal of Table 4 depicted that the maximum overall weighted mean score was received by artificial insemination (36.07), followed by vaccination (34.80) and deworming (34.53), respectively. There was not much variation in weighted mean scores among the respondents of different districts, however, the maximum score was assigned for artificial insemination (9.53), followed by 9.13 for vaccination and 8.93 for deworming which was highest in Hisar district (Table 4). For pregnancy diagnosis and castration services, weighted mean scores were of moderate level, which revealed that respondents were moderately satisfied towards para-veterinary services. In Ahmadnagar district, para-veterinary services were commonly delivered from milk co-operatives, which were availed by farmers with large herd size and good socio-economic condition. This finding was in consonance with reporting of Satisha et al., (2018). A low level of satisfaction by farmers was given to; minor surgical treatment and extension and advisory roles which received second last and the last rank respectively. The satisfaction of farmers towards extension and advisory services was not up to mark as nearly half of farmers were having low degrees of satisfaction. Thus, it can be inferred that under the dimension of major roles and services performed by para-vets, minor surgical treatment as a whole received low priority by farmers in terms of their level of satisfaction.

It was found that about 45.00 per cent of respondents belonged to moderately satisfied, followed by 35.62 per cent respondents having a high level of satisfaction towards para-veterinary services (Table 5). However, 20.00 per cent of respondents had a low level of satisfaction towards para-veterinary services rendered to them. The possible reason behind nearly half of respondents falling in a medium level of satisfaction was that farmers were asked to respond towards seven tasks of minor veterinary services holistically. However, when attributing factors, responsibility, and accountability under each task could be analyzed, then the level of satisfaction would fall as farmers revealed low competency of para-vets in various attributes of the task.

The result of Pearson's product-moment correlation revealed that out of the various socio-economic characteristics presented; educational qualification and distance from veterinary hospital/ dispensary were significantly correlated with the level of satisfaction of farmers towards para-veterinary services (Table 5). This finding was in consonance with the reporting of Leonard (2003), who revealed that most prominent transaction cost in delivery of animal health service was distance, greater distance to health providers noticeably reduces demand for veterinary services.

Table 5. Categorization of respondents according to the level of satisfaction towards major services performed by para-vets

Category	Frequency	Percentage
Low (< 0.26)	32	20.00
Medium (0.27-0.39)	71	44.38
High (0.40 and above)	57	35.62

Table 4. Weighted mean scores for satisfaction of farmers towards major roles performed by para-vets

S.No.	Major roles and services	Weighted mean scores					Rank
		Mathura	Hisar	Jaipur	Ahmadnagar	Overall	
1.	AI	08.27	09.53	08.80	08.27	36.07	I
2.	Pregnancy Diagnosis	08.20	08.40	08.13	08.13	33.20	IV
3.	Castration	07.60	08.13	08.00	07.93	31.67	V
4.	Deworming	08.73	08.93	08.60	08.27	34.53	III
5.	Vaccination	08.67	09.13	08.60	08.93	34.80	II
6.	Minor surgical treatment	07.67	08.13	07.47	07.47	30.80	VI
7.	Advice and extension roles	07.00	07.70	07.07	06.80	28.53	VII

Table 6. Pearson's product moment correlation among socio-economic variables and level of satisfaction towards para-veterinary services

Socio-economic variables of farmers	r value	Significance (p-value)	Remarks
Age	0.362	0.587	Not Significant
Educational qualification	0.548	0.031	Significant
Land holding	0.294	0.625	Not Significant
Distance from veterinary hospital/ dispensary	0.620	0.023	Significant

In turn, increases the demand for para- veterinary service, for which Pearson chi square test was found significant. This implies that the lower the educational status of the farmer and the higher the distance from veterinary hospitals, the more the farmers were satisfied with para-veterinary services. However, age and land holding of respondents were not found significantly correlated with their satisfaction towards para- veterinary services.

CONCLUSION

As an utmost priority, para-veterinary services need to be competent and in turn, accountable towards responsibility delegated to them under minor- veterinary services. Thus, the study has impetus on revealing the satisfaction of farmers towards animal husbandry services rendered by para-vets. When the relationship between the socio- economic profile of farmers and level of satisfaction towards para- veterinary services were analysed using Pearson's product-moment correlation, among various socio-economic variables, education of farmers was found to have a negative relationship with the level of satisfaction of farmers towards para-veterinary services, while the distance from veterinary hospital/ dispensary was found positively correlated. Age and landholding were found non-significantly associated with satisfaction of farmers towards minor- veterinary services. When overall satisfaction of farmers towards para- veterinary services were categorized, it was found that 44.38 per cent were moderately satisfied. Thus, it can be said that para-veterinary services need periodic evaluation and supervision in a participatory manner by considering stakeholder's perspectives. The policy imperatives should be designed by considering the perspectives of para-vets among the various service providers in the animal health system, establish a harmonious relationship between demand and delivery of para-veterinary services, and prospects of monitoring and supervisory support by veterinarians in delivery of prompt and efficient services at farmer's doorstep.

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