

Assessment of Veterinary Clinical Service Quality and Farmers Satisfaction in Veterinary Clinical Service in and Around Gondar, North West Ethiopia

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Abstract

Service quality and customer satisfactions are necessary concepts in veterinary service and its product provider sectors have emphasized. Veterinary clinics as service provider need to have improved quality service to satisfy their clients. The government of Ethiopia established veterinary clinics almost in each district to provide services to the farmers. A survey was conducted from February 2022 to July 2022 in University of Gondar, Koladba district and Gondar town veterinary clinics to assess the level perceived service quality and client satisfaction in veterinary clinics. A total of 398 clients were selected based on convenient sampling out of 55,000 clients in three veterinary clinics. Questionnaire was developed using SERVPERF model dimensions (tangibility, reliability, responsibility, assurance and empathy) to assess the existed service quality in these veterinary clinics. The result revealed that clients were received better services with reliability dimensions of service performance followed by empathy, assurance and tangibles while responsiveness dimension was the least and the grand mean for overall service quality was 4.02. Among three veterinary clinics, Gondar teaching clinic provide a quality service. The finding indicated, there was positive relationship between service quality dimensions (tangibles, reliability, responsiveness, assurance and empathy) and client satisfaction. Among dimensions, tangibility was the most important factor which influences overall client satisfaction. Furthermore, 64.6% of the variations in client satisfaction in the veterinary clinics were explained by the five dimensions of service quality. The majority of the clients believed that service quality as good and those clinics perform well even though still attention is needed in certain items. Government should give special attention for quality service in veterinary clinic. Veterinarians should give the necessary attention to the development of the service as it played a role in client satisfaction.

Keywords: Client satisfaction • Service performance dimensions • Service quality • Veterinary clinics

Introduction

In historical information veterinary service started in China 4000-3000 B.C. that record the use of herbs for curative purposes for animals [1]. Compared with other countries in the region, veterinary services developed late in Ethiopia. It began at the end of the 19th century, when the Italians carried out a rinderpest survey in Ethiopia and in 1908 Veterinary clinic services started officially in Addis Ababa [2]. Whichever, animal health services really got under way in the 1940's and 50's when Ethiopia started to produce vaccine, and newly trained vaccination were sent around the country to vaccinate against rinderpest [3].

Veterinary services are responsible for safeguarding animal resources, play a vital role in humanity's safety and economic and

social well-being [4]. The quality of clinical services was measured by scoring the accuracy of the service provider prescribing the appropriate drug for selected cattle diseases [5]. Service quality and satisfaction of clients towards the veterinary clinic determine by modified model of the Service Performance (SERVPERF) method that are used to assess the perception of client service [6].

Service Quality (SERVQUAL) analysis determines the client's expectations and perceptions of the quality by calculating their gap; whereas SERVPERF determines the attitude of client perceptions by using the service quality dimensions; tangibles, reliability, responsiveness, assurance and empathy. Improving relationship between clients and veterinarians are seen as an important approach towards improving the quality of clinical veterinary services [7]. In

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addition, the economic literature on the provision of animal health services emphasizes that if clients had information about the quality of service offered, they would be able to update through changing their previous beliefs and more readily seek services of veterinarians who offer quality services [8].

The importance of veterinary health service is not only to sustain and improve livestock production, but also to protect and improve human health [9]. Veterinarians are trained about animal health care and committed to excellence in the diagnosis, treatment of animal health. Service quality concept is usually studied in many industries. However, service quality concept and its impact in client satisfaction in a veterinary clinic is rarely studied in most part of the world [10]. To the best of our knowledge, there is no published data about veterinary service quality and its impact on client satisfaction in Ethiopia and particularly though the issue has to be addressed to assess to improve the service in the study area at least. Therefore, the objectives of the study were to assess the impact of overall service quality dimensions on client satisfaction and to evaluate the relationship between perceived service quality and client satisfaction in selected veterinary clinics in and around Gondar, Northwest Ethiopia.

Materials and Methods

Study area

The study was conducted at university of Gondar veterinary teaching clinic, Gondar town veterinary clinic and Koladba district veterinary clinic at central Gondar zone. Gondar town is located in the North Gondar administrative zone of Amhara regional state, 728 km northwest of Addis Ababa, capital of Ethiopia. It is situated at 12.3–13.8°N, latitude and 35.3–35.7°E, longitude and an altitude of 2200 meters above sea level [11]. Gondar town has 11 veterinary clinics and its livestock population 78,123 cattle, 20,695 sheep, 21,515 goats, 9821 equines and 17,280 dogs and cat. Koladba is the district of Central Gondar Zone and it is located around 30 km far south west of and having; 19,440 cattle, 15,120 poultry, 1440 dog and cat, 3,600 goats, 9,000 sheep and 1,800 equine populations [12].

Questionnaire survey

The study was conducted at three veterinary clinics Amhara region of in and around Gondar town. The questionnaire for SERVPERF was developed by using modified SERVPERF Cronbach's alpha test. Cronbach coefficient (α) is the most widely used method of estimating internal consistency (reliability). Therefore, the questionnaire distributed randomly to those livestock owners, who brought their animals to get services to those selected veterinary clinics from February to July, 2022.

Clients were asked to fill up the questionnaire that contained their perceptions of veterinary service quality, and satisfaction. The questionnaire was contained three parts. The first part covers demographic characteristics of the respondents such as, age, gender, educational status, length of time when clients used veterinary service and whether clients are using private or governmental veterinary clinic. The second part contains five dimensions of the SERVPERF measurements as suggested by Parasuraman [13].

The five-point Likert scales representing a range of attitudes from 1 strongly disagree to 5 strongly agree was used to measure client perceptions of service quality. The five dimensions of SERVPERF are reliability, tangibles, assurance, empathy, and responsiveness. The questionnaire contained 23 items; seven items for tangibles, four items for reliability, four items to collect data related to responsiveness, four items about assurance, and four items about empathy. The third part is about client satisfaction level. The data were collected by self-administered questionnaire to those who were able to read and write whereas through interview for those illiterates. The questionnaire was prepared both in English and local (Amharic) language.

Sampling and sample size

According to Tesfa 2014 and Jeffry three criteria need to be specified to determine appropriate sample size; level of precision, level of confidence, and degree of variability. So that given these three criteria, the sample size had been determined based on the following simplified formula: $n = N / (1 + N(e)^2)$.

Where, n is sample size, N is the population size and e is the level of precision. Considering 95% confidence level and $e = 0.05$, will assume for the purpose of determining sample size for this study. Accordingly, the sample size for the study is calculated as follows.

$$n = (20000 + 25000 + 10000) / (1 + 55000(0.05)^2) = 55,000 / 138.5 = 398$$

Total of 398 respondents from three veterinary clinics were used. The number of clients who included in the survey from each clinic was determined by using proportional quota sampling based on the number of clients they have. The number of clients from each clinic was explained in the following table. Hence the samples selected from three veterinary clinics and the proportionate clients selected by using the following formula:

$$n_i = n \times N_i / N$$

Where, n_i is quota of veterinary clinic i , n is total sample size selected, N_i is population of the i veterinary clinic and N is total population of the four branches as indicated on Table 1.

S.N.	Name of veterinary clinic	Number of estimated clients	Sample size
1	University of Gondar veterinary hospital	20000	145
2	Koladba	25000	181
3	Gondar town	10000	72
Total		55000	398

Table 1. Sample size from each veterinary clinic.

This table shows that total estimated number of clients in each veterinary clinic which attain service for animal health care.

Methods of data analysis

The collected data were processed by coding, classification and tabulation using excel. Statistical Package for Social Sciences (SPSS) version 26 was applied to analyze the collected data. Descriptive statistical methods like frequency, percentages, mean, and standard deviation were used to analyze the collected data. The demographic characteristics have been summarized by using frequencies and percentages. Correlation and multiple regression

were analysis techniques were employed to assess the correlation between SERPERF and client satisfaction, and the impact of service quality on client satisfaction [14].

Reliability and validity of instruments

Before conducting the main analysis reliability of SERVPERF scale was checked using Cronbach's Alpha test. Cronbach coefficient (α) is the most widely used method of estimating internal consistency (reliability). According to Nunnally Cronbach's alpha should be above 0.7 to be considered as acceptable. The overall alpha value for this study was 0.87 as reliability test. Therefore, there was very good internal consistency as showed in Table 2 between the items [15].

Dimension	Number of items	Cronbach's alpha
Tangibility	7	0.765
Reliability	4	0.856
Responsibility	4	0.697
Assurance	4	0.798
Empathy	4	0.86

Table 2. Reliability coefficient (Cronbach's alphas) for SERVPERF dimension.

This study's validity is assured through properly conducting questioning/interviewing of the respondents to determine accuracy of finding drawn from questionnaire. Whether the items measure the

area of interest or the concept it intends to measure which were advanced its validity.

Results

Demographic characteristics of respondents

The demographic backgrounds of the respondents are presented in the Table 3 that provides information about the heterogeneity of the clients in the selected veterinary clinics. From the total clinical

service provider clinic 95.5% were governmental institution and 4.5% private sectors. From the Table 3 indicated 1^o is primary school and 2^o secondary school.

Variables		Number of respondents	Percentage
Age	18-29	124	31.2
	30-45	128	32.2
	46-59	95	23.9
	>60	51	12.8
	Total	398	100

Educational level	Unable to write	255	64.1
	1° and 2°	70	17.6
	Diploma	38	9.5
	Degree and above	33	8.3
	Missing	2	0.5
	Total	398	100
How long have you been the client of this clinic	1–5 years old	110	27.6
	6–11 years old	95	23.9
	12–16 years old	83	20.9
	>17 years old	109	27.4
	Missing	1	0.5
	Total	398	100

Table 3. Demographic characteristics of respondents.

Clients perception of service quality in veterinary clinics using SERVPERF

As Table 4 shows mean and standard deviation of the five dimensions (tangibles, reliability, responsiveness, assurance, and empathy) of SERVPERF. The SERVPERF contains 23 statements to measure service quality in veterinary clinics. Each question was

based on a 5-point likert scale as 1=strongly disagree, 2=disagree, 3=neutral, 4=agree and 5=strongly agree then descriptive statistics were used for each item and grand mean for each SERVPERF dimension. As indicated in Table 4, the findings of perceived service quality, reliability was highest strongly agree (4.39) whereas responsibility was 3.08.

Service quality dimensions	Mean	Standard deviation	N
Tangibility	4.03	0.5998	398
Reliability	4.39	0.72118	398
Responsibility	3.08	0.66454	398
Assurance	4.26	0.69599	398
Empathy	4.32	0.77918	398

Table 4. Mean and standard deviation of perceived service quality.

Tangibility deals with the appearance of physical facilities, equipment, appearance of personnel, and communication materials. Out of the items for this dimension the mean score (4.718) for the

item the clinic gave vaccination was higher whereas lower mean (2.577) were scored for materials associated with the service as showed in Table 5 [16].

Tangibility	N	Mean	Standard deviation
The veterinarian uses modern looking equipment	395	4.101	1.0422
The veterinarian shows visually appealing physical facilities	393	4.511	0.8953
Veterinarians are disciplined in their appearance	395	4.172	1.0714
Materials associated with the service (boards, sign posts) are visually appealing	392	2.577	1.4776
There is sufficient supply of drugs	390	4.451	0.9493
Vaccination given	390	4.718	0.6783
There is sufficient veterinarian	390	3.649	1.1437

Table 5. Descriptive statistics of service quality using tangibility dimension.

The overall mean for reliability domain of service quality dimension was good. Out of the four items measuring service reliability, the highest mean score (4.49) was scored for the veterinarians performing

service right the first time provide services at the time, they promise to whereas lowest mean (4.16) was scored for the item they are clear on their professional advice and professional service as indicated in Table 6.

Dimensions	Tangibility	Reliability	Responsibility	Assurance	Empathy
Client satisfaction	0.612**	0.508	0.389**	0.550**	0.554**

*Correlation is Significant at the 0.01 level (2-tailed)

Table 6. Relationship between service quality and client satisfaction.

Under responsiveness domain four items were included to assess the service quality and client satisfaction and out of the four items the item “veterinarians are always willing to help clients” scored

higher mean (4.2) as compared to others items whereas lowered mean (2.63) score was for the item “veterinarians telling to client exactly when services will be performed” clearly showed in Table 7.

Model	R	R square	Adjusted R square	Std. error of the estimate
1	0.668	0.646	0.539	0.605

a. Predictors: SERVPERF dimension

b. Dependent variable: customer satisfaction

Table 7. Model summary service quality using responsibility dimension.

In the above model summary, 64.6% of client satisfaction was due to service quality ($R^2=0.646$).

thus essential to veterinarians to have knowledge, skill, capacity and experience about service delivery [17]. Of the items, behaviors of veterinarian instil confidence in clients scored the highest mean (4.51) whereas lowest mean (3.66) was scored for the item “Friendliness and courtesy of veterinarian to clients.” As indicated in Table 8.

Assurance dimension is the knowledge and courtesy of veterinarians and their ability to inspire trust and confidence. It is

Variables	Unstandardized coefficients		Standardized coefficients	T	Sig.	R square	Overall, Sig
	B	Std. error	Beta				
Constant	0.474	0.226		2.094	0.037		
Tangibility	0.484	0.075	0.36	6.467	0		
Reliability	0.015	0.064	0.014	0.238	0.012	0.646	0
Responsibility	0.118	0.053	0.097	2.225	0.027		
Assurance	0.155	0.067	0.133	2.315	0.021		
Empathy	0.202	0.059	0.195	3.453	0.001		

Table 8. Descriptive statistics of service quality using assurance dimension.

Empathy dimension deals with the caring individualized attention the firm provides to its clients. Service empathy characterizes both the veterinarian willingness and capability to respond to individual client desires. The mean scored for four items of empathy was greater than 4 with the highest mean value (4.45) for the item “veterinarian respect their working hours and lowest mean value scored was (4.21) for item that clinic working hours are convenient to clients as clearly showed in the Table 5.

The impact of perceived veterinary service quality on client satisfaction correlation is significant as indicated in Table 6.

As indicated in Table 8, there is positive relationship between all dimensions of service quality and client satisfaction with P-values<0.01. The moderately strong correlation was observed in tangibility, empathy, assurance and reliability whereas there was weak correlation between responsibility and client satisfaction which showed in Table 7.

As indicated in the Table 8, there was a significant relationship between service quality dimensions and client satisfaction (P -value=0.000). The contribution of each service performance dimension on client satisfaction was also revealed in Table 7 and 8.

Discussion

This study aimed to evaluate clients' perception towards service performance in selected veterinary clinics in and around Gondar town and its impact on client satisfaction. The result of this study showed dominance of male client (67%) in the clinic. This might be due the believe that males have strong fitness to control their animal during medication time as handing animals needs power or it might be due to culture issue about gender in Ethiopia. The mean score values of the five service performance dimensions' ranges from 3.0869 to 4.3929 and it is an indication that clients perceived better service performance in the selected veterinary clinics [18].

Clients perceived and agreed they were receiving quality service in the reliability items; the proper handling of the treatment, performing the service right at the first time they promise they do, and clear for their professional service whereas clients agreed that by the responsiveness dimension such as willing of helping by veterinarian, attainment of quick service, and know the clinic working time of the veterinary clinic were not receiving as such better quality [19].

University of Gondar veterinary teaching clinics showed better service performance in its veterinary services (mean=4.22) compared to Gondar veterinary clinics and Koladiba veterinary clinics. This could be due its administration under university of Gondar as the university might have better facility, provide regular training to veterinarian and good incentives to the professional which in impacts service quality. Furthermore, UOG veterinary clinic is better at sign posts, materials used for clinical practice, vaccination, sufficient veterinarians and drug availability. Among SERVPERF dimension, responsibility has lowest value in all three clinics. This implies that those clinics veterinarians were not well performing in announcing the clinic working time, willing of helping of clients, and quick service to clients.

The result of this study also indicated that service performance dimensions have positive and significant effect on client's satisfaction. This result is in line with the literature that service quality is predictor of customer satisfaction. With regard to the relative importance of the five dimensions of service quality, the finding shows that the most important factors that had higher effect on client satisfaction were tangibility. This result is in agreement with findings of previous study conducted in Sir Lanka and Pakistan Parasuraman et al., and Siobhan respectively. In the current study, empathy was the second dimension that has impact on client satisfaction. This finding is in line with the results of Parasuraman et al.

The findings of impact of service performance dimensions on client satisfaction showed that 64.6% of client satisfaction was due to service performance. As Kitapci et al. reported that 38% of client satisfaction was influenced by service quality dimensions in Sir Lanka veterinary clinics though there might be difference in the service facilities. Therefore, service quality has been considered as critical for the success of veterinary organizations because of its close link with client satisfaction.

Conclusion

Clients perceived that clinics perform better by the items under reliability dimensions followed by empathy, assurance and tangibles. To sum up, the services provided by the veterinary clinics were tangible, reliable, responsive, assured and empathetic as the grand mean scored were in agreed range even though there were items with lower value. There were significant association between SERVPERF and client satisfaction, and the service performance of veterinary clinics had impact on satisfaction of clients. Therefore, concerned bodies in each veterinary clinic should give great attention to veterinary service in improving its performance of services particularly for those items with low mean score and veterinarians should perform very well to make clients very satisfied with the facilities based on their resource.

Ethical Approval and Consent to Participate

This is to confirm that the research work entitled "assessment of veterinary clinical service quality and farmers satisfaction in veterinary clinics in and Around Gondar, North West Ethiopia" has granted approval of its ethical soundness for the paired of time from February 2022 to July 2022 by the Institutional Ethical Review Board IRB of college of veterinary medicine and animal sciences, university of Gondar, Ethiopia. It has given at reference Ref. No: CVMAS.Sc. 16.282023. Therefore, the aforementioned research work was not had experimental sampling research work human and animal specimen.

The purpose of the research was clearly indicated in the first page of the questionnaire and oral informed consent of respondents was obtained to participate in the survey after explaining the aim of the study. And this research not needs any human and animal specimen for research. We inform the farmer and the aim is to improve veterinary service of animal health managements. All the farmer was willing to participate for interview. The farmers after came to clinic for a veterinary service, we inform for the role of this research. After that, if the farmers were voluntary we interviewed and those who were not voluntary not interviewed.

Consent for Publication

All authors, we have a great consent for the publication of this paper.

Availability of Data and Materials

Authors are ready to give nesuserly available data with a requesting via e-mail and any communication plat form.

Funding

No applicable.

Competing Interest

We declare that no conflict of interests.

Author's Contribution

YM and AT collected data in the field and organized the valuable data. They write up the draft and analysis the data. AM reviewed the draft and arranged the discussion part. AY, AT, and AM generally working together and have equal shear.

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