

Perception of Veterinary Practitioners and Animal Owners on Professional Competencies in Veterinary Practice: An Essential Component for Curricula Design in Cameroon

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Abstract

Veterinary schools are responsible for defining their curricula in accordance with societal needs. For this input, listening to stakeholders from outside academia is essential. In Cameroon, the idea of veterinary professionalism and competence has been raised in a couple of informal situations. The general objective was to investigate the perception of Cameroonian veterinarians, pet owners and farmers on attributes constituting a good veterinarian. This study was carried out in 5 regions from August 2022 to January 2023. Study was conducted with semi structured questionnaires. During data collection, ethical issues related with human subjects were faithfully considered. Sphinx Plus² was used to design questionnaire. Data was collected in Microsoft Excel 2013 and analysed with SPSS Version 23. Of the 571, participants 220 (38.5%) were veterinarians and 351 (61.5%) clients. The overall level of satisfaction was 34.67% (198/571) for both groups. Amongst the client (351), 35.04% (130/351) were satisfied. Of the evaluated attributes, only the attribute “Good at explaining technical terms” ($P = 0.001$), “Compassion with animals” ($P = 0.005$) and “Good at practical skills” ($P = 0.02$) were significantly different in the group of clients. Amongst the veterinarians, 30% (68/220) of the respondents were satisfied and only the attribute “Patience” ($P = 0.02$) had a significant difference with respect to the level of satisfaction. Among clients, “Good at explaining technical terms”, “Cleanliness”, and a “Likeable personality” were the most important attributes while: “Clear about cost of treatment”, “Decisiveness”, and “Knowledgeable about veterinary medicine and surgery” were among the

veterinarian. These results are useful in addressing training, curriculum and graduate capacity.

Keywords

Perception, Competency, Curriculum Design, Veterinarians, Clients, Cameroon

1. Introduction

Curriculum reforms are time consuming since they require evidence-based data on which to propose changes. Nevertheless, veterinary schools are responsible for defining their curricula in accordance with societal needs. For this input, listening to stakeholders from outside academia is essential [1].

Veterinarians play an important role in five related fields of work: public health, bio-medical research, global food safety and security, ecosystem health, and the more traditional animal care [2]. As a consequence of societal needs and expectations, external demands on the profession are increasingly critical and far-reaching. Today, it is necessary for the members of the veterinary community to demonstrate the validity of their decisions [3] as well as provide accountability for their education [4].

In contrast to the veterinary profession, the medical profession has extensively explored both doctors' and patients' perceptions of what attributes constitute "a good doctor". Indeed, an entire issue of the British Medical Journal was devoted to discussion of this topic [5], and a wide range of papers from numerous countries have explored both the medical professions and the wider public's attitudes on what attributes constitute "a good doctor" [6].

Surveys of veterinary employers and graduates themselves have provided a consensus view that new graduates lack the non-technical skills and professional attitudes needed for veterinarians [7]. Studies have shown that management and communication are important requirement in a veterinary practice. Communication skills, emotional intelligence, cultural awareness, teamwork abilities, dispute resolution strategies, and the awareness that multiple approaches have been highlighted and deemed required to resolve challenges [8].

The perception of how important professional skills are and defining the success of a veterinarian, or what constitutes a "good veterinarian" have been previously studied [9]. These studies have centred on gender differences among veterinary students; differences between clients and veterinarians about what attributes constitute a "good vet"; as well as the employer's perceptions [10] among others. The development of new curricula can derive from consensus achieved in workshops, focus groups, or open consultation [11].

This fostering of development in veterinary professionalism has arisen primarily, because veterinary educators tacitly assumed that students would passively acquire veterinary professionalism attributes during the course of their content-

heavy clinical curriculum [12]. Until recently, veterinary schools assumed little responsibility for veterinary professionalism instruction, assuming that the students' social interactions with clinical staff, classmates, veterinary practitioners and family members would suffice [11]. More recently, as the importance of including professionalism in veterinary education has been recognised, literature on not only the definition of professionalism (*i.e.*, as it pertains to graduating veterinarians), but also the content and the pedagogical methods needed to deliver such a program has increased in both quantity and quality [13].

In Cameroon, the idea of veterinary professionalism and competence has been raised in a couple of informal situations. The NAVC (National Association for Veterinarians in Cameroon) is the board who registers veterinarians and also regulates the practice of veterinary medicine. And several instances have sanctioned veterinarians on absurd professional behaviour. With this in mind, it shows the public which is in contact with the vets will know what qualities or attributes make them to trust their vets and consider them competent. Till date, studies on the professional skills that veterinarians and pet owners/farmers deem crucial have not yet been conducted in African countries. There are three veterinary schools in Cameroon, and some of them are updating their curricula to include professional skills and abilities, however this notion is difficult to shake if one goes outside the medical frameworks or norms. This is the first time such a study is being carried out in Cameroon which has been producing veterinary graduates since 2014.

With this, the general objective of this work was to investigate the perception of Cameroonian veterinarians, pet owners and farmers on which attributes constitute a good veterinarian, and how they relate to demographic characteristics.

2. Materials and Method

2.1. Study Design

This descriptive study was carried out in selected clinics of 5 main regions of Cameroon: Adamawa, Centre, Littoral, West and South West from August 2022 to January 2023. These regions were chosen based on the importance of animal production activities, the number of veterinary clinics in the zone and also the feasibility of carrying out the study.

2.2. Study Area

This was a nationwide study, precisely in selected veterinary clinics in the cities of Ngaoundéré, Yaounde, Douala, Bafoussam and Limbe. Considering the fact that at the time of the study veterinary clinics were not common and some unknown to us, so. Snow Ball sample collection Technic was then used to locate some of the clinics where studies were done.

2.3. Questionnaire

The questionnaire made use of graduate attributes developed by “Essential Competences Required of the Veterinary Surgeon” document produced by the RCVS

(Royal College of Veterinary Surgeons) [14]. A questionnaire was then designed to incorporate these attributes, and was piloted among veterinary colleagues and pet owners to optimise understanding and coverage of possible favourable attributes as described in 2015 by Mellanby [15].

A list of graduate attributes that clients and veterinarians may perceive as favourable was developed through discussions between the authors, and was guided by previous published studies in this area together with the need for compliance in veterinary medicine [15]. A questionnaire was then designed to incorporate these attributes, and was piloted among veterinary colleagues and animal owners to optimise understanding and coverage of possible favourable attributes. The client and veterinarian questionnaires consisted of three questions. The first part of questions was demographic related and the second part were attributed related questions asked “In your opinion, how important are the following attributes in a veterinary surgeon?”, followed by a list of 20 attributes as indicated in **Table 1** and **Table 2**. Clients were asked to assess how important they felt. A 5 point score indicated very high level of satisfaction and a minimum of zero indicated indifference or not important. The third part of the question asked “In your opinion, which of the above are the three most important attributes in a veterinary surgeon?”. The final question asked “Are there any additional attributes which you consider to be highly desirable in a veterinary surgeon?”.

2.4. Sample Size and Sample Selection

Between August and October of 2022, veterinarians all around Cameroon were contacted by calls, emails, WhatsApp correspondences and physical interview. We made use of the repertoire of clinics from the NAVC and included registered and preregistered veterinarians. A total of 800 questionnaires was directly applied to veterinarians and clients at waiting rooms of the selected veterinary practices. Only participants who gave their consent were approved for the study and responded to the questionnaires.

Data Collection

During data collection, ethical issues related with human subjects were faithfully considered. Primarily, the study proposal was confirmed followed by getting consent from the community before the survey.

2.5. Ethical Considerations

We considered several ethical implications in conducting this research and took steps to minimise harm. The implications were: issues of informed consent; maintenance of confidentiality and anonymity; risks of harm We sought advice from the School of Veterinary Medicine and Sciences, Ngaoundéré-University, who identified no special risks for veterinarian and client participants. Finally Institutional ethical clearance (Region, No. 0008/AP/MINPIA/SG/DRSPC) of January 2022 was obtained from the Ministry livestock fishery and animal husbandry Yaounde Permission was also obtained from the administration of different health centers

in question.

2.6. Data Treatment and Statistical Analysis

Sphinx Plus² software was used to design questionnaire. The information collected from the questionnaire was inputted into Microsoft Excel 2013 which was also used for the drawing of graphs. First descriptive statistics were applied in order to define the group of animal owners and vets according to their demographic characteristics. A significance level of $P < 0.05$ was set for all tests applied using Chi Square for level of satisfaction for the different shortlisted attributes. All statistical analyses were carried out in SPSS Version 23.

3. Results

3.1. Demographic Characteristics

At the end of the study a total of 571 respondents accepted to participate in this study. Of the 571 respondents interviewed respondent, 220 (38.5%) were veterinary practitioners while the rest 351 (61.5%) were veterinary clients which either visited the different veterinary cabinets for consultation of their animals or came to purchase drugs for their animals.

Of all those sampled 348 (60.9%) were of the male sex and 223 (39.10%) females. More than half of the respondents 292 (51.1%) were in the age group of 25 - 35 years of age. As concerns the educational level of the respondents more than a quarter 169 (29.6%) of them preferred to stay quiet of their education level none the less, a greater percentage 230 (40.30%) of them affirmed to have done university studies. Equally, a large proportion 426 (74.6%) of the respondents happened to be in the private sector of activity. **Table 1** summarises the demographic characteristics of the study population.

Table 1. Demographic characteristics of target population.

Variable	Category	Effective	Percentage (%)	<i>P</i> -value (X^2)
Sex	Male	348	60.90	0.36 (9.2)
	Female	223	39.10	
Age (years)	15 - 25	163	28.5	0.01 (24.25)
	26 - 35	292	51.1	
	36 - 45	95	16.6	
	46±	21	3.7	
Type of respondent	Veterinarian	220	38.5	0.15 (1.99)
	Clients	351	61.5	
Marital status	Single	415	72.3	0.01 (14.72)
	Married	156	27.3	
	Divorced	2	0.4	

Continued

Educational level	Non response	169	29.6	0.13 (7.08)
	Primary	29	5.1	
	Secondary	24	4.2	
	High School	119	20.8	
	University	230	40.3	
	Others	16	2.8	
Area of services	Government	80	14.0	0.11 (4.42)
	NGO	65	11.4	
	Private sector	426	74.6	
Location	Yaoundé	161	28.20	0.73 (2.74)
	Douala	170	29.80	
	Bafoussam	133	23.30	
	Ngaoundéré	76	13.30	
	Limbe	31	5.43	

Table 2. Level of satisfaction of the clients with respect to the different attributes.

Factors (attributes)	Modalities	Satisfied	N	% Satisfied	P-value (X ²)
Confidence	Not at all important	8	16	50	0.62 (2.61)
	Not Important	1	1	100	
	Indifferent	3	8	37.5	
	Important	33	81	40.7	
	Very important	86	245	35.1	
Friendliness	Not at all important	5	10	50	0.5 (3.307)
	Not Important	2	3	66.7	
	Indifferent	4	7	57.1	
	Important	52	148	35.1	
	Very important	67	183	36.6	
Cleanliness	Not at all important	0	3	00	0.36 (4.32)
	Not Important	3	4	75	
	Indifferent	2	6	33.3	
	Important	39	103	37.9	
	Very important	86	235	36.6	
Knowledgeable in medicine and surgery	Not at all important	0	5	00	0.2 (5.92)
	Not Important	3	4	75	
	Indifferent	1	4	25	
	Important	51	131	38.9	
	Very important	75	207	36.2	
Good at explaining technical terms	Not at all Important	1	7	14.3	0.0001 (21.67)
	Not important	20	26	76.9	
	Indifferent	4	8	50	

Continued

	Important	51	142	35.9	
	Very important	54	168	32.1	
	Not at all important	3	14	21.4	
	Not Important	8	14	57.1	
Professional appearance	Indifferent	5	12	41.7	0.37 (4.23)
	Important	54	142	38	
	Very important	60	169	35.5	
	Not at all important	3	15	20	
	Not Important	3	11	27.3	
Compassion for patients	Indifferent	4	8	50	0.55 (3.02)
	Important	62	166	37.3	
	Very important	58	151	38.4	
	Not at all important	7	22	31.8	
	Not Important	1	9	11.1	
Compassion for clients	Indifferent	4	8	50	0.45 (3.68)
	Important	61	166	36.7	
	Very important	57	146	39.0	
	Not at all important	4	18	22.2	
	Not Important	3	6	50	
Good communication skills	Indifferent	3	4	75	0.33 (4.6)
	Important	58	156	37.2	
	Very important	62	167	37.1	
	Not at all important	4	16	26.7	
	Not Important	4	9	44.4	
Likeable personality	Indifferent	2	6	33.33	0.88 (1.157)
	Important	64	166	38.6	
	Very important	56	155	36.1	
	Not at all important	4	13	30.8	
	Not Important	3	7	42.9	
Patience	Indifferent	4	10	40	0.98 (0.35)
	Important	62	167	37.1	
	Very important	57	154	37.0	
	Important	3	7	42.9	
	Not Important	4	8	50	
Good listener	Indifferent	3	7	42.9	0.73 (2.01)
	Important	58	146	39.7	
	Very important	62	183	33.9	
Know his/her limits and takes advice	Not at all important	3	4	75	
	Not Important	3	8	37.5	0.6 (2.7)

Continued

	Indifferent	2	6	33.3	
	Important	52	137	38.0	
	Very important	70	196	35.7	
Clear about cost of treatment	Not at all important	1	5	20	0.55 (3.008)
	Not Important	2	7	28.6	
	Indifferent	2	10	20	
	Important	53	129	41.1	
	Very important	61	168	36.3	
Ability to work in a team	Not at all important	1	7	14.3	0.78 (1.72)
	Not Important	3	9	33.3	
	Indifferent	3	9	33.33	
	Important	55	146	37.7	
	Very important	68	180	37.8	
Honesty	Not at all important	0	8	00	0.06 (8.86)
	Not Important	2	11	18.2	
	Indifferent	4	8	50	
	Important	51	119	42.9	
	Very important	73	205	35.6	
Decisiveness	Not at all important	3	10	30	0.5 (3.31)
	Not Important	2	7	28.6	
	Indifferent	4	7	57.1	
	Important	63	165	40.6	
	Very important	58	172	33.7	
Good with animals	Not at all important	3	13	23.1	0.4 (4.02)
	Not Important	1	7	14.3	
	Indifferent	3	7	42.9	
	Important	47	136	34.6	
	Very important	76	188	40.4	
Good practical skills	Not at all important	2	8	25	0.02 (11.57)
	Not important	3	7	42.9	
	Indifferent	1	6	16.7	
	Important	67	142	47.2	
	Very important	57	131	30.3	
Politeness	Not at all important	2	4	50	0.69 (2.23)
	Not Important	2	10	20	
	Indifferent	1	5	20	
	Important	56	147	38.1	
	Very important	69	185	37.3	

N: number.

Table 3. Level of satisfaction with respect to the different demographic characteristics of the target population.

Variable	Modality	N	Satisfied	% Satisfied	P-value (χ^2)
Sex	Male	348	126	36.2	0.36 (9.2)
	Female	223	72	32.3	
Age (years)	15 - 25	163	35	21.5	0.01 (24.25)
	26 - 35	292	111	38.0	
	36 - 45	95	47	49.5	
	46±	21	05	23.8	
Type of respondent	Veterinarian	220	103	32.2	0.15 (1.99)
	Clients	251	95	37.8	
Marital status	Single	413	125	30.5	0.01(14.72)
	Married	156	73	43.8	
	Divorced	02	0	0.0	
Educational level	Non response	169	68	40.2	0.13 (7.08)
	Primary	29	8	27.6	
	Secondary	24	8	33.33	
	High School	119	31	26.1	
	University	230	83	36.1	
Area of services	Government	80	23	28.8	0.11 (4.42)
	NGO	65	17	26.2	
	Private sector	426	158	37.1	
Location	Yaoundé	161	56	34.8	0.73 (2.74)
	Douala	170	53	31.2	
	Bafoussam	133	51	38.3	
	Ngaoundéré	76	28	36.8	
	Limbe	31	10	32.3	
	Limbe	31	10	32.3	

The different values of satisfaction of the other attributes were equally expressed in **Table 3** and their different level of compliancy. The overall level of satisfaction was 34.67% (198/571) for both groups of respondents. Of all the clients a total of 35.04 % (130/371) were satisfied with the situation of veterinary training. Of the evaluated attributes, only the attribute “Good at explaining technical terms” ($P = 0.001$) and “Good at practical skills” ($P = 0.02$) were significantly different in the group of clients. None the less, the attributes “Confidence” (86/130), “Cleanliness” (86/130), “Good with animals” (76/130), “Knowledgeable in Medicine and Surgery” (75/130), “Honesty” (73/130), and “Knows his or her limit and when to seek advice” (70/130) were “Very Important” attributes amongst others in the group of identified clients.

Amongst the veterinarians 30% (68/220) of the respondents were satisfied with the training of veterinary doctors in the country. **Table 2** demonstrates the pattern of satisfaction of veterinary training with respect to the shortlisted 20 attributes of a good veterinarian as perceived by vets. Of all the 20 attributes evaluated for, only the attribute “Patience” ($P = 0.02$), “Compassion for patients” ($P = 0.005$) had a significant difference with respect to the level of satisfaction. Despite this, of those who were satisfied (68), a great proportion of them accepted that “Confidence” (45/68), “Friendliness” (45/68), “Cleanliness” (39/68), “Knowledgeable in medicine and surgery” (38/68), and “Good at explaining technical terms” (35/68) where “Very Important” attributes in the quality of a good veterinarian as seen in **Table 4**.

Table 4. Level of satisfaction of the veterinarians with respect to the different attributes.

Factors (attributes)	Modalities	Satisfied	N	% Satisfied	P-value (X ²)
Confidence	Not at all important	5	14	35.7	0.7 (1.93)
	Not Important	1	3	33.3	
	Indifferent	1	5	20	
	Important	16	64	25	
	Very important	45	134	33.6	
Friendliness	Not at all important	1	12	8.3	0.07 (8.4)
	Not Important	1	3	33.3	
	Indifferent	1	5	20	
	Important	16	64	25	
	Very important	45	134	33.6	
Cleanliness	Not at all important	1	4	25	0.7 (2.07)
	Not Important	0	3	0	
	Indifferent	1	6	16.7	
	Important	27	84	32.1	
	Very important	39	123	31.7	
Knowledgeable in medicine and surgery	Not at all important	0	0	0	0.7 (1.32)
	Not Important	0	2	0	
	Indifferent	1	4	25	
	Important	29	99	29.3	
	Very important	38	115	33	
Good at explaining technical terms	Not at all Important	1	4	25	0.8 (1.61)
	Not important	2	4	50	
	Indifferent	1	2	50	
	Important	29	103	28.2	
	Very important	35	107	32.7	

Continued

	Not at all important	3	10	30	
Professional appearance	Not Important	3	6	50	
	Indifferent	0	7	00	0.3 (4.79)
	Important	34	100	34	
	Very important	28	96	28.9	
Compassion for patients	Not at all important	1	14	7.1	
	Not Important	2	3	66.7	
	Indifferent	0	6	0	0.05 (9.25)
	Important	35	114	30.7	
	Very important	30	83	36.1	
Compassion for clients	Not at all important	1	14	7.1	
	Not Important	2	7	28.6	
	Indifferent	1	7	14.3	0.2 (5.16)
	Important	36	109	33.0	
	Very important	28	83	33.33	
Good communication skills	Not at all important	2	7	28.6	
	Not Important	2	4	50	
	Indifferent	1	4	25	0.88 (1.14)
	Important	34	104	32.7	
	Very important	29	101	28.7	
Likeable personality	Not at all important	2	13	15.4	
	Not Important	2	4	50	
	Indifferent	0	5	00	0.3 (4.83)
	Important	30	98	30.6	
	Very important	34	100	34	
Patience	Not at all important	1	7	14.3	
	Not Important	5	6	83.3	
	Indifferent	5	9	55.6	0.02 (11.68)
	Important	29	104	27.9	
	Very important	28	94	29.8	
Good listener	Important	1	5	20	
	Not Important	1	2	50	
	Indifferent	3	6	50	0.69 (2.22)
	Important	31	110	28.2	
	Very important	32	97	33	

Continued

	Not at all important	0	4	0	
Know his/her limits and takes advice	Not Important	1	2	50	0.57 (2.92)
	Indifferent	2	4	50	
	Important	37	116	31.9	
	Very important	28	94	29.8	
Ability to work in a team	Not at all important	0	1	00	0.56 (2.04)
	Not Important	2	4	50	
	Indifferent	0	0	0	
	Important	33	118	28	
	Very important	33	97	34	
Honesty	Not at all important	2	5	40	0.63 (1.7)
	Not Important	1	2	50	
	Indifferent	0	0	0	
	Important	39	116	33.6	
	Very important	26	97	26.8	
Decisiveness	Not at all important	1	6	16.7	0.14 (5.43)
	Not Important	2	2	100	
	Indifferent	0	0	00	
	Important	41	127	32.3	
	Very important	24	85	28.2	
Good with animals	Not at all important	6	13	46.2	0.49 (3.39)
	Not Important	1	2	50	
	Indifferent	0	2	00	
	Important	39	121	32.2	
	Very important	22	82	26.8	
Good practical skills	Not at all important	1	4	25	0.62 (2.4)
	Not important	2	3	66.7	
	Indifferent	1	3	33.3	
	Important	35	122	28.7	
	Very important	29	87	28.7	
Politeness	Not at all important	0	4	00	0.37 (4.23)
	Not Important	2	3	66.7	
	Indifferent	0	1	00	
	Important	41	127	32.3	
	Very important	25	85	29.4	

N: number.

Table 4 shows which client rated attributes veterinarians perceived to be most often linked with satisfaction with only two factors (compassion towards animal patient and patience) showing significant associations. This study equally had to identify the 3 three most important attributes amongst the 20 shortlisted attributes by the two groups of respondents. **Figures 1** below clearly expressed the three most important attributes in decreasing order in both populations. It was identified that, in the client population, “Good at explaining technical terms”, “Cleanliness”, and a “Likeable personality” while among the veterinarian population the 3 most important qualities identified were: “Clear about cost of treatment”, “Decisiveness”, and “Knowledgeable about veterinary medicine and surgery”.

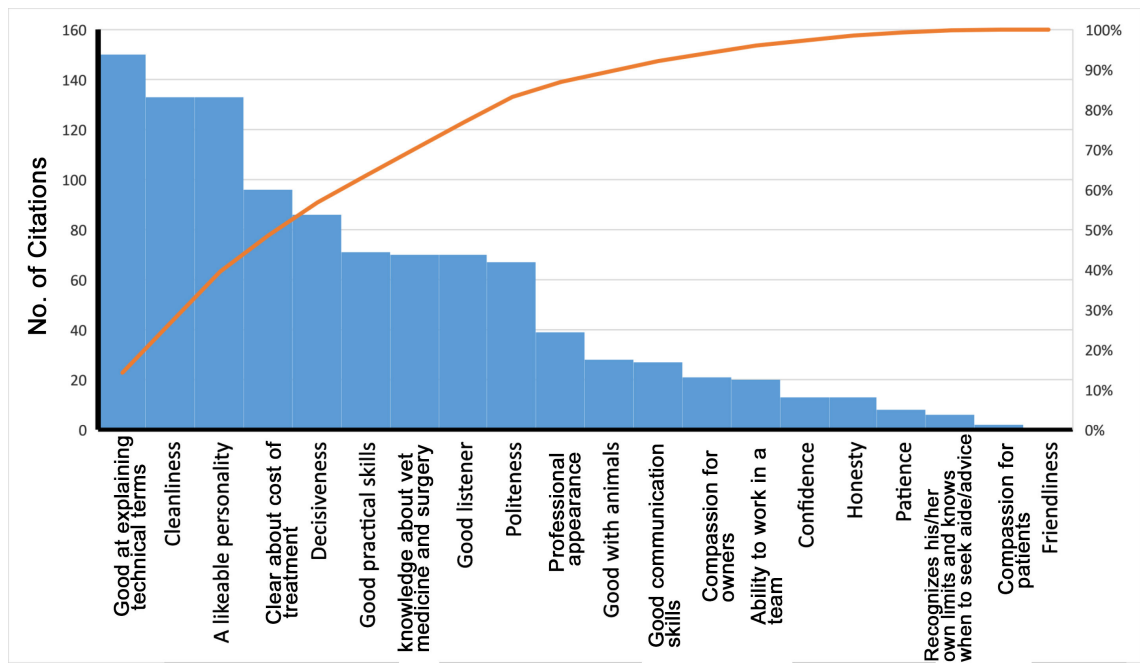


Figure 1. Classification of the most important attributes (3) as perceived by the clients.

3.2. Other Important Attributes Identified by Clients and Veterinarians

Table 5 and 6 represent other attributes not listed but considered important by the participants in the two groups. “Good behaviour, ethical behaviour and humility” (44.27%) amongst clients and “Quest for veterinary specialisation” (37.45%) amongst veterinarians were the most reported attributes in both populations.

Table 5. Other attributes considered important in the quality of a veterinarian by clients.

Attributes	No. of citations	% citation
Reasonable treatment prices and availability of drugs	245	42.54
Good behaviour, Ethical behaviour and Humility	255	44.27
Concern for clients and better treatment	76	13.19
Total	576	100

Table 6. Other attributes considered important in the quality of a veterinarian by veterinarians.

Attributes	No. of citations	% citation
Continuous education and Knowledge Search aide	250	35.87
Quest for vet specialization domains (Continuous professional development)	261	37.45
Engagement in Community work, Entrepreneurship programs for vets	80	11.48
Ethical behavior, Empathy, compassion for owners	106	15.20
Total	697	100

3.3. Addressing Situation of Veterinary Training in Cameroon

This section centred on surveying both study population as to what advice can be channelled or recommended so as to address the situation of veterinary training in Cameroon to either ameliorate the quality of training or the quality of Day One Graduates upon finishing school. The responses varied amongst the different participants in the study and their respective answers though varying could be re-grouped for better comprehension and analysis.

Amongst the client population More Government aide and financing of vet faculties (88.03%) and Emphasis more on practical and internship for students (85.75%) by school authorities were the most cited actions to be taken as seen in **Table 7**.

Table 7. Client advice on addressing situation of veterinary training in Cameroon (n = 351).

Modality	No. of citations	% Percentage	% citation
Creation of more veterinary schools and Vets institution	278	79.20	27.99
Emphasis more on practical and internship for students	301	85.75	30.31
more experience teachers in schools and collaboration of Vets school and clients	67	19.08	6.75
More Government aide and financing of vet faculties	309	88.03	31.11
Make training affordable	38	10.82	3.83
Total	993	-	100

In the veterinarian population, “Collaboration between veterinary schools and harmonizing teaching programs” (83.18%), “Recruitment of competent and experienced teaching personnel” (78.18%) and “More practical and clinical sessions in schools adapted to new technology” (76.36%) were the most address advices as seen in **Table 8**.

Table 8. Veterinarians' advice on addressing situation of veterinary training in Cameroon (n = 220).

Modality	No. of citations	% Percentage	% citation
More practical and clinical sessions in schools adapted to new technology	168	76.36	27.86
Recruitment of competent and experienced teaching personnel	172	78.18	28.52
Limit the number of places in Vets schools & creation of several training schools	46	20.90	7.63
Collaboration between veterinary schools & harmonizing teaching programs	183	83.18	30.34
Creation of domains of specialization	34	15.45	5.64
Total	603	-	100

4. Discussion

This study has revealed many important findings regarding how clients, veterinarians (private practitioners and government veterinary officers) viewed and perceived the quality of veterinary training in Cameroon and the level of satisfaction as training is concerned. Equally, it was clear the overall level of satisfaction of the respondents was less than 35% in both populations (30% for veterinarians and 35.04% for clients). Within both populations there was a significant difference between the age groups of the study. These results are different from those obtained by [1] and [16], in Australia and Mexico respectively where the age was not a significant risk factor amongst veterinarians and animal owners. Age has been identified to make a difference in patient satisfaction in several studies [17] [18]. It was noticed that patients between 18 - 34 years of age were more displeased and difficulty to satisfy as they are distracted with technology: phones or computers and have different level of expectations from the physicians [18]. This later is equally supported by a study in which patient satisfaction scores increased with age until age 65 to 80 and then declined. It was found that although better health was associated with greater satisfaction across all age ranges, the relationship between age and satisfaction was modified somewhat by health status [17]. Furthermore, patient age is associated with style of interaction, which is, in turn, associated with patient satisfaction [19]. With marital status been a significant factor ($P = 0.001$), it was important to note that, several studies have related marital status to differ with the satisfaction from different services and customer satisfaction by different study populations [20]-[22]. Married patients tend to be more satisfied with health services as compared to other [21]. This could be attributed to the fact that marital status was correlated with care, intimacy and intimacy domains [23], which are similar in the veterinary milieu where the above attributes can be illustrated by married clients who at times happen to be responsible.

With a satisfaction percentage of 36% in those with higher education background, it is essential to point out that in both groups, "professional skills" receive

a lower value the higher the level of education. Further research is necessary, but it's interesting to note that, in the case of animal owners with lower levels of education, skills like "patience" and "good at explaining technical terms"—both of which respondents rated as "very important"—were given greater weight, while "professional appearance" received the lowest average rating.

Another important finding from the study was the difference in proportion of clients who considered an attribute as "Very Important" compared to veterinarians. A great proportion of clients considered "Confidence", "Cleanliness", "Good with animals", "Knowledge in medicine and surgery", "Honesty" and "Know his or her limits and recognises when to seek advice" as compared to veterinarian who identified "Confidence", "Cleanliness", "Friendliness", "Knowledge in medicine and Surgery" and "Good at explaining technical terms". This small difference demonstrates that veterinarians were able to recognize some characteristics that were equally relevant to the clients.

Among the client population, "Good at explaining technical terms" ($P = 0.01$) and "Good practical skills" ($P = 0.02$) were significantly different as compared to their level of satisfaction. Whereas, only "patience" ($P = 0.02$) was significantly different in the veterinarian population. With this we are confronted to say clients and veterinarians have different expectations from veterinarian as such curriculum development should take into consideration stakeholder viewpoints so that the veterinary graduates are of use to their target community. The identified attributes were however similar to those reported by [12].

Considering the 20 attributes listed on the questionnaire, the participants were asked to list the top 3 attributes amongst this 20. The aim of this was due to worries that respondents could only answer "yes" when asked which of the 20 stated traits they thought were most essential, a second question was added. Hence, if a respondent merely said that all 20 of the traits given in the first question were very significant, preferred attributes might still be found by asking them to underline the three attributes they thought were most important. The three most important attributes shortlisted by the clients were "Good at explaining technical terms", "Cleanliness", and having a "Likeable personality". These results are different from those gotten by [12] in UK who identified "Knowledge about veterinary medicine and surgery" and being "Good with animals". This identified difference in the response from the clients in our study can be attributed to the fact that the veterinary profession is still a new one in Cameroonian context and clients are still seeking to know much about the management of animal health issues and who to attribute a vet who answers all their worries, and having a likeable personality and in a clean environment. In contrast to our study "Good communication skill", "knowledge of veterinary medicine and surgery" and compassion for patients were considered top 3 most important attribute in veterinarian population in Cambridge, UK [12].

When asked on additional attributes (44.27%) of the clients expressed "Good ethical/good behaviour" whereas for the veterinarians the "quest for veterinary specialisation" was important (37.45%). This again can be explained by the fact

that the profession is still gaining grounds and requires much attention with a very small number of specialist and the unavailability of specialisation options in the existing veterinary faculties. It will be important to note that only 13.19% of the clients vouched for “Better client concern and treatment”. However, these results are different from those obtained in Cambridge in UK which identified the “Ability to cope under pressure/ability to deal with difficult situations” by the veterinarian populations. Cases of burnout and stress resulting from conflict have equally been reported in the veterinary profession [24]. So, it’s definitely not new in areas of high interprofessional relationship and actions for such an attribute to be raised. It’s worth commending the prompting of continuous professional development. Wieland and collaborators in 2021 identified that investigation into veterinary service provision and focusing on veterinarian is critical to address the current and future challenges in the veterinary profession. These results are however slightly different from those gotten by [1] in Mexico, where the absolute frequency of other attributes was: “continuous knowledge”, “empathy” and “companionship with colleagues” for the clients and “reasonable prices”, “ethical behaviour” & “empathy”.

It was concluded that every optimised and successful veterinary sector required evidence-based program of continuous professional development that will meet the needs of the actors involved just as it is the case illustrated by the Cameroonian veterinarian population.

Also, addressing the challenges that veterinary training faces in Cameroon, a great proportion (30.30%) of the veterinarians vouched for harmonisation of the curriculum and collaboration between the different veterinary schools. Routine curricular evaluation has been described as a vital process that ensures continuous alignment between veterinary education programs and the evolving needs of the profession [25]. It should be noted that the findings on harmonisation of veterinary training have been decried by the National Association of Veterinarians of Cameroon (NAVC), where they tabled the current increasing enrolment of not more than 30 veterinary students per class and several other ills veterinary training institutes in Cameroon don’t respect as per the WOAHA (World Organisation for Animal Health) recommendation for Cameroon indicates (LNo. 003/NAVC/P/SG/22).

In the same light survey studies in the graduation of veterinary medical students have suggested that outcome assessment of educational program is important and should be define and set by every faculty is recommended [26]. The veterinary faculties in Cameroon are each to determine attributes and find different levels of compliances for the graduates upon exiting the faculties. In another study in the New Zealand, it was concluded that it was the concern and responsibility of the veterinary training schools to identify and define attributes and also ensure that new graduates were adequately prepared for practice [27].

Studies in human general practitioners have equally yielded similar contrasting evidence between patient and doctors’ perception just like in our case [6] [7].

These results showed different expectations from patients and general practitioners. As a result, it was recommended that stakeholders, teachers and policy makers made use of such results to train general practitioners to be more responsive to the expectations of the patients [6].

This study is the first and only one of its kind to be carried out in Cameroon that seeks to evaluate quality of training or perception of training of veterinary doctors. It will be important to state that there were additional limitations to the study that must be considered when interpreting the results. Firstly, not all attributes were considered in the thought of the quality of a good veterinarian, equally the methodology of study narrowed the approach to the questions and their responds as responded could only respond following the respond pattern (5-class responds) we had directed them to do. Secondly, more than half of the veterinarian respondents who received the questionnaires did not file in the questionnaires as such the non-responders could have had a different perception from the veterinarians who responded. Thirdly, another limitation to this study that should be considered when interpreting the results was the possibility of potential response bias and we suspected that individuals who responded in the survey could have very negative of very positive experiences with veterinarians trained in Cameroon and also the fact that a very large proportion of aged veterinarians are overseas trained. Thus, their stand point could be judged not on the qualities of the graduate but rather the country where they trained.

5. Conclusion

This is the first study of its kind in Cameroon to know the clients and veterinarian perception of the qualities of a good veterinary graduate. In summary, this study indicated that the perception of veterinarians and clients of the relevance of a range of criteria in “excellent vet” differ significantly. So, it cannot be assumed that clients and veterinarians will value the same qualities in a veterinarian. By involving other parties in curriculum development, for example, it is more probable that graduates of veterinary schools will acquire the qualities needed by the larger community. Therefore, it is crucial to take into account the viewpoint of veterinary professionals and animal owners when veterinary colleges update their curricula. The weight attributed to the traits investigated in this survey was consistent with findings from other nations. They offer essential data on professional skills that are to be taken into account when implementing new curricula from local stakeholders.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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