

## ORIGINAL RESEARCH

# Survey-based investigation of sports and leisure horse owners' approaches to, and expectations of, equine veterinary care

Yteke Elte<sup>1</sup>  | Inga Wolframm<sup>2</sup> | Ilse van Grevenhof<sup>2</sup> | Mirjam Nielen<sup>3</sup> | René van Weeren<sup>1</sup>

<sup>1</sup>Department of Clinical Sciences, Faculty of Veterinary Medicine, Utrecht University, Utrecht, The Netherlands

<sup>2</sup>Van Hall Larenstein University of Applied Sciences, Velp, The Netherlands

<sup>3</sup>Department of Population Health Sciences, Faculty of Veterinary Medicine, Utrecht University, Utrecht, The Netherlands

## Correspondence

Yteke Elte, Department of Clinical Sciences, Faculty of Veterinary Medicine, Utrecht University, Utrecht, The Netherlands.  
Email: [y.elte@uu.nl](mailto:y.elte@uu.nl)

## Abstract

**Background:** Client satisfaction depends on the balance between expectations and service experience. Previous research identified seven aspects of equine veterinary professional conduct that are important for client satisfaction: quality of care, quality of service, horsemanship, transfer of knowledge, financial aspects, interpersonal skills and professionalism.

**Methods:** By employing a cross-sectional study design through a survey-based investigation, horse owners' initial contact preferences and their perceptions of the importance of various aspects of veterinary care in different scenarios were explored. Categories included professional versus amateur and competitive versus non-competitive horse owners. Quantitative data analysis was performed.

**Results:** Data from 1153 participants revealed that horse owners promptly contacted veterinarians for colic (92.7%) but delayed for lameness (51.8%) and pre-purchase examinations (63.0%). Overall, quality of care emerged as the most important aspect of veterinary care for horse owners, with financial aspects considered least important. Competitive and professional horse owners prioritised financial aspects and professionalism, whereas non-professional and non-competitive horse owners prioritised quality of care and interpersonal skills ( $p < 0.005$ ).

**Limitations:** Survey distribution relied on a snowball effect, internet access was necessary and the study exclusively represents the Western equine community. Potential bias should be acknowledged.

**Conclusion:** The perceived importance of various aspects of veterinary care varies depending on the nature of the consultation and the horse owner type. Tailoring veterinary services can improve client satisfaction by aligning with diverse expectations.

## INTRODUCTION

Equine veterinarians typically enter the veterinary field because of their passion for horses, desire to provide excellent care and connection to the equestrian community.<sup>1</sup> However, they spend a significant amount of time interacting with horse owners, making client satisfaction a crucial factor in veterinary consultations.<sup>2</sup> Satisfaction is determined by the alignment between expectations and the actual service experience.<sup>3,4</sup> Failure to meet expectations can lead to dissatisfaction and increased stress for both the client and the veterinarian, potentially affecting horse

health.<sup>2</sup> Given the high stress levels experienced by equine veterinarians, understanding and managing client expectations can help to reduce stress and improve job satisfaction.<sup>2,5</sup>

Previous research has identified seven aspects of equine veterinary professional conduct relevant to client satisfaction: quality of care, quality of service, horsemanship, transfer of knowledge, financial aspects, interpersonal skills and professionalism.<sup>2</sup> These aspects contribute to the overall level of client satisfaction during the consultation process. However, it is unclear which of these aspects is the most important to horse owners when consulting an equine

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veterinarian. Equine veterinary care includes a wide spectrum of services, ranging from preventative care and other activities that can be scheduled in advance, such as vaccinations or pre-purchase examinations, to consultations for acute cases, such as lameness or colic.<sup>1,6–8</sup> It can be argued that different types of veterinary issues might require varying approaches and skills to handle them properly in the view of the owner, that is, owner expectations may differ depending on the nature of the consultation. Intuitively, the severity of the situation and its potential consequences will likely impact or even dictate expectations and levels of satisfaction with the veterinary services provided.

However, to date, no peer-reviewed information exists on when horse owners contact their veterinarians when a horse health issue occurs and whether horse owner expectations vary between different types of horse owners and/or horse health issues. Therefore, the aims of the current study were twofold: to determine whether the veterinarian is the first point of contact when horse owners are faced with different veterinary health issues, and which aspects of veterinary care horse owners consider most important in four representative cases requiring different levels of technical knowledge and with a more or less urgent character.

## METHODS

### Study design

A survey-based cross-sectional study design was used to investigate the expectations of horse owners and caregivers regarding equine veterinary care and services. For the readability of this paper, all individuals owning or caring for a horse are referred to as 'horse owners'.

The output for this study was generated using Qualtrics software (version July 2022; Qualtrics).

The survey was published on the website and social media platform of the Faculty of Veterinary Medicine at Utrecht University in the Netherlands, with the aim of reaching sports and leisure horse owners. Further distribution was achieved through a snowball effect by sharing the link to the survey on relevant social media platforms (Facebook and LinkedIn).<sup>9</sup>

### Survey design

Participants were asked to provide consent on the survey's opening page, and it was emphasised that participation was voluntary and anonymous. No personal information that could be linked to the individual was collected or stored. Although the participants could withdraw from the study at any time, once their responses were submitted, the anonymous nature of the data prevented the removal of their responses from the dataset. The survey was available in English and Dutch and consisted of 25 questions that took an aver-

age of 12 minutes to complete. The survey is provided in [Supporting Information](#). The first section of the survey consisted of 15 questions on personal demographics, participants' experiences with horses, their purpose for keeping them and their use of veterinary services.

Participants were then shown four scenarios, in a fixed order, outlining different types of veterinary situations typically encountered by horse owners. The scenarios were designed by the first (experienced equine veterinarian and horse owner) and second (human behaviour specialist and horse owner) authors. The scenarios covered preventative action (vaccination), emergency calls (colic), regular equine care (lameness) and pre-purchase examinations.<sup>1,6–8</sup> In the survey, the aforementioned seven aspects of equine veterinary professional conduct were presented to the participants were asked to rank the seven aspects in order of importance, with the the most important aspect ranked first.

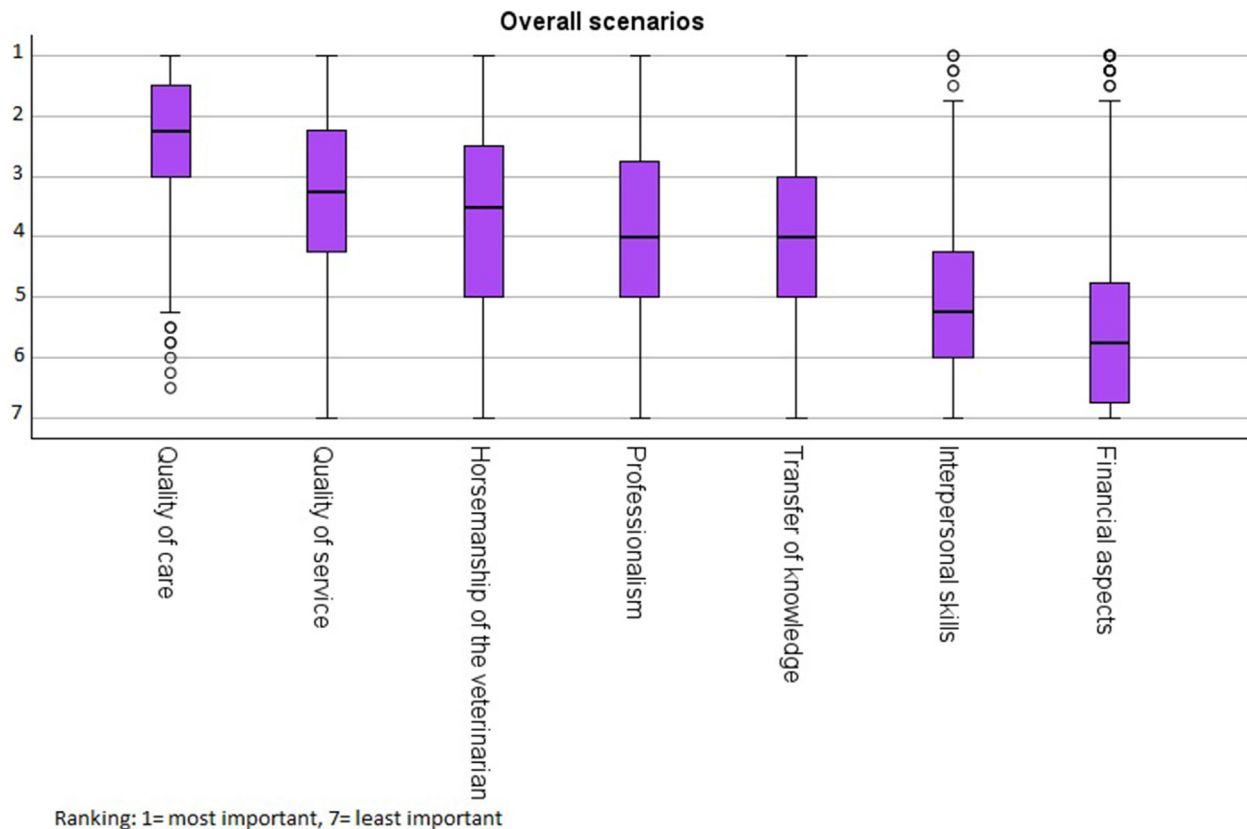
Once participants were presented with the colic, lameness and pre-purchase scenarios, they were asked who their first and second points of contact would be for that specific scenario. The same options were presented for the first and second choices. Options for points of contact included veterinarians, other equine health professionals and personal contacts such as friends or trainers.<sup>10</sup> For the vaccination scenario, no choice was given because even though regulations differ by country, most vaccinations must be administered by licensed veterinarians. When participants chose their veterinarian as either their first or second point of contact, they were then asked to rate the seven aspects of professional veterinary conduct in order of importance. Whenever the veterinarian was not chosen as either the first or second point of contact, participants were shown the text 'You decide to call a vet' and were asked to rank the seven aspects of veterinary professional conduct.

The survey also included four additional open questions that focused on different aspects of the interaction between horse owners and veterinarians and were therefore not analysed as part of the current quantitative study. A pilot test in Dutch and English was conducted with 19 horse owners, and the final survey was published online from 25 July to 6 November 2022.

### Statistical processing

Statistical analysis was performed using SPSS software (version 28), and descriptive analyses were performed on the demographic data. Frequencies were established for the first and second choices for the colic, lameness and pre-purchase examination scenarios.

The participants were categorised based on their responses to the following questions: 'Do you keep horses for professional reasons?' and 'Do you and/or your horse(s) participate in competitions?'. Pearson chi-squared tests were conducted to determine the impact of professional and competitive status on



**FIGURE 1** Boxplots representing the overall ranking, in order of importance, of the seven aspects of client satisfaction in equine veterinary practice by a calculated average of all four scenarios combined

owners' first point of contact. Friedman tests were conducted to determine differences in the ranking of aspects within each scenario. In order to identify the most appropriate post hoc analysis, preliminary visual inspections of the data were conducted, with subsequent Wilcoxon signed-ranked tests. Mann-Whitney  $U$ -tests were performed to determine differences in the ranking of aspects between the independent variables of participants' professional and competition status. A Bonferroni correction with a significance level of  $p = 0.005$  ( $0.05/11$ ) was applied for multiple comparisons in order to prevent a type I error.

## RESULTS

A total of 1436 horse owners from various countries were included in the study. The survey achieved an 80% completion rate, resulting in 1153 fully completed surveys that were used for further statistical analysis. The number of horse owners worldwide is estimated to be 10 million, with an average of six horses per owner/carer.<sup>11,12</sup> The number of completed surveys ( $n = 1153$ ) was therefore considered representative at a 95% confidence level and maximum variability (50% proportion), with the true proportion of the population likely to be within approximately  $\pm 2.89$  percentage points of the sample estimate. Most included participants (98%) resided in Western Europe, the United States and Canada. See Table S1 for a full list of participants per country. The participants owned 5528 horses, ranging from 1 to 140 per participant. Of the

participants, 50.3% ( $n = 580$ ) stated that they or their horses performed in competitions, 49.7% ( $n = 573$ ) did not compete and 14.1% ( $n = 162$ ) stated that they were professionally active in the equine sector. Hence, 85.9% ( $n = 991$ ) of the participants were identified as non-professionals. See Table 1 for additional participant demographic information, the purpose for which the horses were kept and the competition discipline. When asked about the purpose of keeping horses, 428 participants kept their horses for one purpose only, 660 participants indicated that they kept their horses for two different purposes and 65 participants kept their horses for three purposes.

Across all four scenarios, a calculated average was determined. Horse owners ranked quality of care as the most important aspect of veterinary services and financial aspects as the least important overall (Figure 1).

## Vaccination scenario

A significant difference was found across the seven aspects for the vaccination scenario:  $\chi^2_F(6, n = 1153) = 1379.9$  ( $p < 0.001$ ). Following visual inspection of rankings (Figure 2), post hoc tests between all aspects compared to the lowest- and highest-ranked aspects revealed that participants ranked quality of care significantly higher than quality of service ( $Z = -13.41$ ;  $p < 0.001$ ), interpersonal skills ( $Z = -24.62$ ;  $p < 0.001$ ), transfer of knowledge ( $Z = -23.97$ ;  $p < 0.001$ ), horsemanship ( $Z = -11.37$ ;  $p < 0.001$ ), professionalism

**TABLE 1** Demographic information, purpose for keeping horses and competitive discipline

	<i>n</i>	%
Gender		
Male	43	3.7
Female	1101	95.5
Non-binary	2	0.2
Other	1	0.1
Rather not say	6	0.5
Total	1153	100.0
Age		
18–24	61	5.3
25–34	159	13.8
35–44	259	22.5
45–54	288	25.0
55–64	228	19.8
65–74	137	11.9
75–84	17	1.5
Under 18	4	0.3
Total	1153	100.0
Purpose of horse ownership <sup>a</sup>		
Hobby (riding/driving/ground work)	828	44.1
Companion	303	16.1
Sport	268	14.3
Breeding	127	6.8
Livery yard	71	3.8
Retirement stable	60	3.2
Training and showing for clients	53	2.8
Housing youngsters (1–3 years old)	51	2.7
Riding school	31	1.7
Combination riding school and livery	30	1.6
Other	56	3.0
Total	1878	100.0
Competition discipline and level <sup>a</sup>		
Dressage basic level	370	38.22
Dressage national level	94	9.71
Dressage international level/top sport	10	1.03
Jumping basic level	142	14.67
Jumping national level	32	3.31
Jumping international level/top sport	9	0.93
Eventing basic level	80	8.26
Eventing national level	14	1.45
Eventing international level/top sport	6	0.62
Driving basic level	35	3.62
Driving national level	6	0.62
Driving international level/top sport	0	0.00
Endurance basic level	37	3.82
Endurance national level	13	1.34
Endurance international level/top sport	7	0.72
Reining basic level	13	1.34
Reining national level	7	0.72
Reining international level/top sport	2	0.21

(Continues)

**TABLE 1** (Continued)

	<i>n</i>	%
Vaulting basic level	1	0.10
Vaulting national level	2	0.21
Vaulting international level/top sport	2	0.21
Other basic level	52	5.37
Other national level	28	2.89
Other international level/top sport	6	0.62
Total	968	100.00

<sup>a</sup>Multiple answers possible per participant.

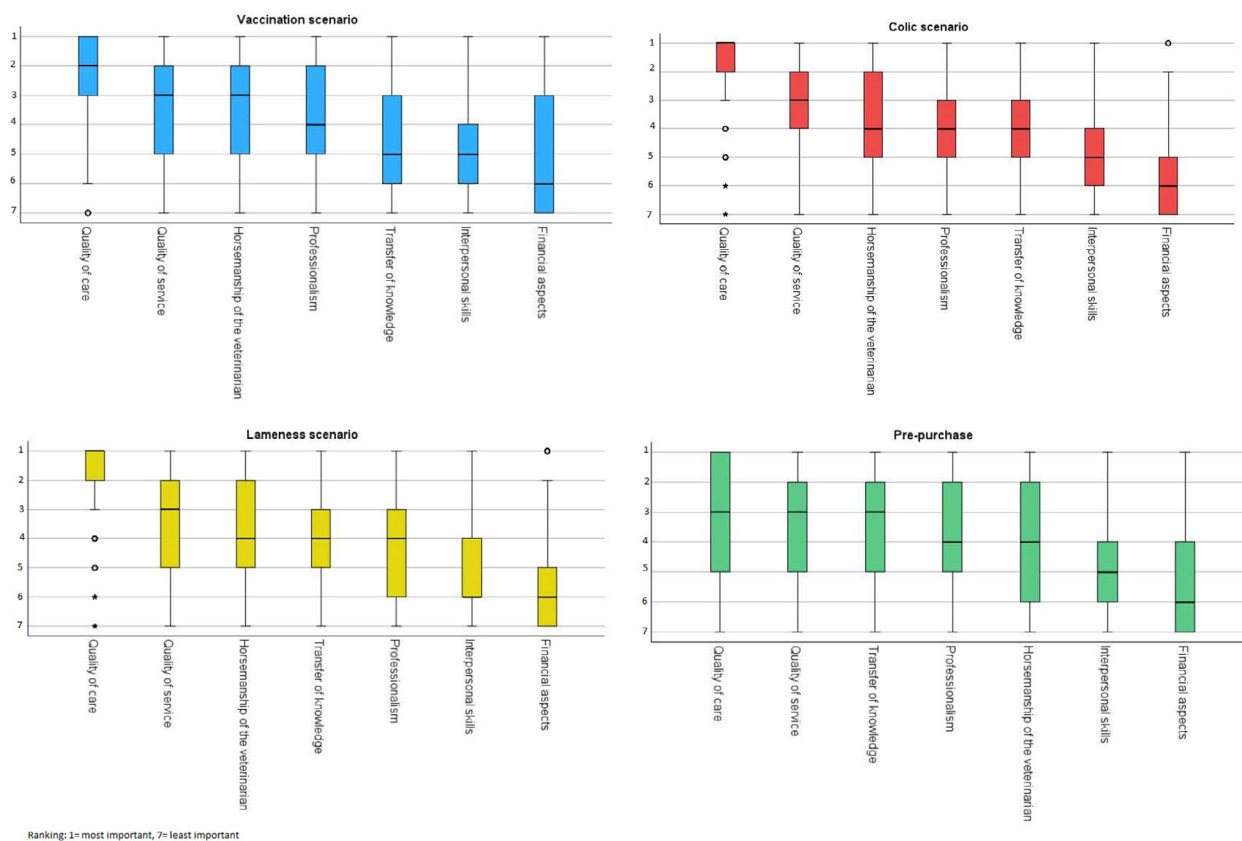
( $Z = -16.75$ ;  $p < 0.001$ ) and financial aspects ( $Z = -21.89$ ;  $p < 0.001$ ). Financial aspects were ranked significantly lower than professionalism ( $Z = -11.36$ ;  $p < 0.001$ ), transfer of knowledge ( $Z = -3.69$ ;  $p < 0.001$ ), horsemanship ( $Z = -14.59$ ;  $p < 0.001$ ) and quality of service ( $Z = -17.03$ ;  $p < 0.001$ ).

Professionals ranked professionalism significantly higher than non-professionals. Other aspects showed no significant differences between professionals and non-professionals (Table 2). A significant difference was found between competitors and non-competitors, with competitors ranking financial aspects significantly higher than non-competitors (Table 2).

## Colic scenario

Overall, for the colic scenario, 92.7% ( $n = 1069$ ) of the participants reported that they would first contact their veterinarian, with 7.3% ( $n = 84$ ) choosing to contact someone else initially or to wait and treat themselves. Table 3 shows the breakdown of the initial contact options. Of the participants who did not immediately call their veterinarian, 95.2% ( $n = 80$ ) would contact their veterinarian as a second choice. Table 4 shows the breakdown of second-choice contact options. Non-professionals would call their veterinarian as their first choice significantly more often than professionals (93.4% vs. 88.3%;  $\chi^2$   $p < 0.05$ ). There was no significant difference between competitors and non-competitors (91.4% vs. 94.1%;  $\chi^2$   $p < 0.05$ ).

A significant difference across the seven aspects could also be found for the colic scenario:  $\chi^2_F(6, n = 1153) = 2629.15$  ( $p < 0.001$ ). Visual inspection of data (Figure 2) followed by post hoc tests for all aspects compared to the lowest- and highest-ranked aspects revealed that participants ranked quality of care significantly higher than quality of service ( $Z = -20.80$ ;  $p < 0.001$ ), interpersonal skills ( $Z = -28.15$ ;  $p < 0.001$ ), transfer of knowledge ( $Z = -25.76$ ;  $p < 0.001$ ), horsemanship ( $Z = -22.66$ ;  $p < 0.001$ ), professionalism ( $Z = -23.77$ ;  $p < 0.001$ ) and financial aspects ( $Z = -28.85$ ;  $p < 0.001$ ). Financial aspects were ranked significantly lower than professionalism ( $Z = -21.11$ ;  $p < 0.001$ ), transfer of knowledge ( $Z = -20.66$ ;  $p < 0.001$ ), interpersonal skills ( $Z = -10.49$ ;  $p < 0.001$ ), horsemanship ( $Z = -21.32$ ;  $p < 0.001$ ) and quality of service ( $Z = -25.37$ ;  $p < 0.001$ ).



**FIGURE 2** Boxplots representing the overall ranking, in order of importance, of the seven aspects of client satisfaction in equine veterinary practice in the vaccination, colic, lameness and pre-purchase scenarios

There were no significant differences between professionals and non-professionals (Table 5). Non-competitors ranked interpersonal skills significantly higher than competitors. No significant differences between competitors and non-competitors were found for any of the other aspects (Table 5).

### Lameness scenario

For the lameness scenario, only 51.8% ( $n = 597$ ) of the participants reported that they would first contact their veterinarian, with 48.2% ( $n = 556$ ) choosing to contact someone else initially (Table 3). Of the participants who chose to contact someone else or treat the horse themselves, 72.8% ( $n = 405$ ) called their veterinarian as a second choice (Table 4). There were no significant differences between professionals and non-professionals ( $\chi^2 p = 0.056$ ) and between competitors and non-competitors ( $\chi^2 p = 0.50$ ) regarding their initial preference for calling a veterinarian.

There was also a significant difference across the seven aspects for the lameness scenario:  $\chi^2_F(6, n = 1153) = 2425.26$  ( $p < 0.001$ ). Visual inspection (Figure 2) and subsequent post hoc tests for all aspects compared to the lowest- and highest-ranked aspects revealed that participants considered quality of care to be significantly more important than quality of service ( $Z = -21.42$ ;  $p < 0.001$ ), interpersonal skills ( $Z = -27.78$ ;  $p < 0.001$ ), transfer of knowledge ( $Z = -22.30$ ;  $p < 0.001$ ), horsemanship ( $Z = -22.66$ ;  $p < 0.001$ ), professionalism ( $Z = -24.14$ ;  $p < 0.001$ ) and financial

aspects ( $Z = -28.46$ ;  $p < 0.001$ ). Financial aspects were ranked significantly lower than professionalism ( $Z = -18.07$ ;  $p < 0.001$ ), transfer of knowledge ( $Z = -21.21$ ;  $p < 0.001$ ), interpersonal skills ( $Z = -7.17$ ;  $p < 0.001$ ), horsemanship ( $Z = -19.47$ ;  $p < 0.001$ ) and quality of service ( $Z = -23.77$ ;  $p < 0.001$ ).

There were no significant differences between professionals and non-professionals (Table 6). Non-competitors ranked interpersonal skills significantly higher than competitors, while competitors considered professionalism significantly more important than non-competitors (Table 6).

### Pre-purchase scenario

In the pre-purchase scenario, 63.0% ( $n = 726$ ) of the participants reported that they would first contact their veterinarian, with 37.0% ( $n = 427$ ) choosing to contact someone else initially (Table 3). When asked for their second choice, 71.9% ( $n = 307$ ) of the respondents who did not choose their veterinarian as their first choice did so as a second choice (Table 4). There was no significant difference between professionals and non-professionals ( $\chi^2 p = 0.22$ ) or between competitors and non-competitors ( $\chi^2 p = 0.41$ ).

Finally, a significant difference across the seven aspects was found for the pre-purchase scenario:  $\chi^2_F(6, n = 1153) = 1168.26$  ( $p < 0.001$ ). Visual inspection (Figure 2) and follow-up post hoc tests for all aspects compared to the lowest- and highest-ranked aspects revealed that participants considered financial aspects

**TABLE 2** Descriptive statistics of the ranking of the seven factors of client satisfaction in equine veterinary practice by (non)professional and (non)competitive horse owners for the vaccination scenario

	Quality of care	Quality of service	Horsemanship	Interpersonal skills	Transfer of knowledge	Professionalism	Financial aspects
All participants							
Median	2.00	3.00	3.00	5.00	5.00	4.00	6.00
Mean	2.46	3.39	3.49	5.03	4.70	3.93	5.00
SD	1.562	1.640	2.064	1.562	1.670	1.856	2.091
Professionals							
Median	2.00	4.00	3.00	5.00	5.00	3.00	5.50
Mean	2.82	3.60	3.64	5.07	4.62	3.45	4.80
SD	1.762	1.658	2.099	1.573	1.627	1.934	2.210
Non-professionals							
Median	2.00	3.00	3.00	5.00	5.00	4.00	6.00
Mean	2.40	3.35	3.47	5.03	4.72	4.01	5.03
SD	1.520	1.635	2.058	1.561	1.677	1.832	2.070
Difference professional versus non-professional, <i>p</i> -value	0.007	0.064	0.328	0.705	0.486	<b>&lt;0.001</b>	0.234
Competitors							
Median	2.00	3.00	3.00	5.00	5.00	4.00	5.00
Mean	2.57	3.30	3.59	5.13	4.76	3.86	4.79
SD	1.629	1.683	2.049	1.566	1.660	1.848	2.129
Non-competitors							
Median	2.00	3.00	3.00	5.00	5.00	4.00	6.00
Mean	2.34	3.47	3.39	4.94	4.65	4.00	5.20
SD	1.485	1.592	2.076	1.554	1.679	1.863	2.033
Difference competitor versus non-competitor, <i>p</i> -value	0.030	0.038	0.060	0.027	0.242	0.182	<b>&lt;0.001</b>

Note: Significant differences are highlighted in bold.  
Abbreviation: SD, standard deviation.

**TABLE 3** Breakdown of initial points of contact

	Colic scenario		Lameness scenario		Pre-purchase scenario	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Veterinarian	1069	92.71	597	51.78	726	63.00
Wait/self-treatment	72	6.24	307	26.63	n/a	n/a
Own judgement	n/a	n/a	n/a	n/a	213	18.50
Osteopath/other equine professional	2	0.17	173	15.00	22	1.90
Trainer	4	0.35	53	4.60	177	15.40
Someone at the yard	5	0.43	17	1.47	15	1.30
Google	1	0.09	6	0.52	n/a	n/a
Social media	0	0	0	0	0	0
Total	1153	100.00	1153	100.00	1153	100.00

to be significantly less important than quality of care ( $Z = -20.89$ ;  $p < 0.001$ ), quality of service ( $Z = -21$ ;  $p < 0.001$ ), interpersonal skills ( $Z = -4.21$ ;  $p < 0.001$ ), transfer of knowledge ( $Z = -20.48$ ;  $p < 0.001$ ), horsemanship ( $Z = -15.66$ ;  $p < 0.001$ ) and professionalism ( $Z = -17.59$ ;  $p < 0.001$ ). There were no significant differences between quality of service and quality of care ( $Z = -2.53$ ;  $p = 0.012$ ), quality of care and transfer of knowledge ( $Z = -2.55$ ;  $p = 0.011$ ) and transfer of knowledge and quality of service ( $Z = -0.59$ ;  $p = 0.56$ ).

There were no significant differences between professionals and non-professionals in the ranking of

the seven aspects (Table 7). Non-competitors ranked interpersonal skills significantly higher than competitors (Table 7).

## DISCUSSION

### The veterinarian as first point of contact

One of the main aims of the current study was to determine whether horse owners would first contact a veterinarian when faced with equine health

**TABLE 4** Breakdown of second-choice points of contact

	Colic scenario		Lameness scenario		Pre-purchase scenario	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Veterinarian	416	36.1	508	44.1	477	41.4
Wait/self-treatment	370	32.1	212	18.4	n/a	n/a
Own judgement	n/a	n/a	n/a	n/a	133	11.5
Osteopath/other equine professional	100	8.7	268	23.2	164	14.2
Trainer	118	10.2	103	8.9	308	26.7
Someone at the yard	106	9.2	38	3.3	65	5.6
Google	41	3.6	19	1.6	3	0.3
You ask your question on social media	2	0.2	5	0.4	3	0.3
Total	1153	100.0	1153	100.0	1153	100.0

**TABLE 5** Descriptive statistics of the ranking of the seven factors of client satisfaction in equine veterinary practice by (non)professional and (non)competitive horse owners for the colic scenario

	Quality of care	Quality of service	Horsemanship	Interpersonal skills	Transfer of knowledge	Professionalism	Financial aspects
All participants							
Median	3.00	3.00	4.00	5.00	3.00	4.00	6.00
Mean	3.16	3.36	3.87	5.10	3.40	3.71	5.40
SD	2.003	1.793	2.017	1.511	1.727	1.929	1.736
Professionals							
Median	2.50	3.00	4.00	6.00	3.00	4.00	6.00
Mean	3.13	3.33	4.04	5.36	3.22	3.61	5.31
SD	1.982	1.793	2.080	1.289	1.587	1.969	1.749
Non-professionals							
Median	3.00	3.00	4.00	5.00	3.00	4.00	6.00
Mean	3.17	3.37	3.84	5.05	3.43	3.72	5.41
SD	2.007	1.793	2.006	1.541	1.748	1.923	1.734
Difference professional versus non-professional, <i>p</i> -value	0.936	0.776	0.249	0.041	0.219	0.483	0.398
Competitors							
Median	3.00	3.00	4.00	5.00	3.00	4.00	6.00
Mean	3.06	3.31	3.99	5.22	3.39	3.67	5.36
SD	2.000	1.775	2.013	1.480	1.707	1.918	1.694
Non-competitors							
Median	3.00	3.00	4.00	5.00	3.00	4.00	6.00
Mean	3.27	3.41	3.75	4.97	3.41	3.75	5.44
SD	2.001	1.810	2.015	1.533	1.750	1.941	1.777
Difference competitor versus non-competitor, <i>p</i> -value	0.055	0.316	0.047	<b>0.004</b>	0.986	0.513	0.179

Note: Significant differences are highlighted in bold.

Abbreviation: SD, standard deviation.

issues. Decisions made during these initial stages can have profound implications for the welfare of horses and the subsequent course of veterinary care. Understanding the choices made by horse owners sheds light on the dynamics of the owner–veterinarian relationship and provides a valuable context for equine veterinarians.<sup>2</sup>

Current findings show that when faced with the possibility of equine colic, more than 90% of the participants would contact their veterinarians first. This is not surprising, as colic episodes are often charac-

terised by visible and alarming signs of discomfort in horses.<sup>13</sup> The visible and distressing behaviour exhibited by the horse during a colic episode can create a sense of urgency and helplessness among horse owners and may be considered one of the main motivational drivers behind the decision to consult a veterinarian.<sup>6,14</sup> Although the majority of colic cases do not escalate to a critical level, the immediate distress displayed by the horse triggers a natural and justified response to prompt veterinary help.<sup>6</sup> This response aligns with the precautionary principle

**TABLE 6** Descriptive statistics of the ranking of the seven factors of client satisfaction in equine veterinary practice by (non)professional and (non)competitive horse owners for the lameness scenario

	Quality of care	Quality of service	Horsemanship	Interpersonal skills	Transfer of knowledge	Professionalism	Financial aspects
All participants							
Median	1.00	3.00	4.00	6.00	4.00	4.00	6.00
Mean	1.81	3.38	3.86	5.24	3.82	4.17	5.74
SD	1.223	1.669	1.898	1.481	1.606	1.766	1.557
Professionals							
Median	1.50	3.00	4.00	6.00	4.00	4.00	6.00
Mean	2.08	3.41	3.86	5.46	3.79	3.88	5.51
SD	1.392	1.641	1.935	1.512	1.655	1.863	1.654
Non-professionals							
Median	1.00	3.00	4.00	5.00	4.00	4.00	6.00
Mean	1.76	3.37	3.85	5.20	3.82	4.21	5.77
SD	1.188	1.675	1.893	1.473	1.559	1.746	1.538
Difference professional versus non-professional, <i>p</i> -value	0.007	0.630	0.992	0.01	0.867	0.038	0.047
Competitors							
Median	1.00	3.00	4.00	6	4.00	4.00	6.00
Mean	1.84	3.31	3.99	5.37	3.80	4.00	5.69
SD	1.259	1.687	1.874	1.463	1.605	1.743	1.558
Non-competitors							
Median	1.00	3.00	4.00	5.00	4.00	4.00	6.00
Mean	1.77	3.45	3.72	5.10	3.84	4.33	5.79
SD	1.186	1.649	1.916	1.487	1.608	1.775	1.555
Difference competitor versus non-competitor, <i>p</i> -value	0.437	0.092	0.015	<b>&lt;0.001</b>	0.867	<b>0.002</b>	0.215

Note: Significant differences are highlighted in bold.  
Abbreviation: SD, standard deviation.

and, in this case, prioritisation of veterinary care for horses, and may override any consideration related to financial costs or self-treatment options.<sup>15,16</sup>

Nevertheless, a small minority of participants indicated that they would choose to 'wait and treat the horse themselves' in the event of colic. Professionals tended to wait significantly longer before calling their veterinarians. These findings are in line with those of Bowden et al., who found that livery-yard owners sometimes wait to call a veterinarian.<sup>6</sup> This suggests that some horse owners might consider themselves to possess a level of self-confidence in their equine healthcare knowledge and skills, possibly because of prior experience, which leads them to consider handling colic cases independently, at least temporarily.<sup>6</sup> Colic is the most common equine emergency in veterinary practice, with 4% of horses experiencing a colic episode each year.<sup>13</sup> It may well be that experienced horse owners are either consciously or unconsciously aware of that. Although colic often manifests as a critical medical emergency, it can also be resolved with minimal (one-time) intervention.<sup>17</sup> It remains important to note, however, that although only 7%–10% of colic cases seen by a veterinarian ultimately require surgical intervention, the risk associated with making incorrect judgements in colic scenarios remains high.<sup>13,17</sup> Horse owners who opt for self-treatment

should be aware of these risks and their potential consequences, particularly in light of the more ready availability of analgesic drugs in the United States.<sup>18</sup>

When confronted with lameness, approximately half of the participants chose their veterinarians as their initial point of contact. Lameness is often indicated as one of the most important health issues for horse owners and trainers.<sup>19–22</sup> The great importance attributed to lameness aligns with the multifaceted implications of this condition, which can impact a horse's athletic abilities, overall wellbeing and owners' objectives.<sup>22–24</sup>

The reason many horse owners refrain from seeking immediate contact with a veterinarian when their horses display signs of lameness is likely multifactorial. One plausible explanation is the ample knowledge and experience of many horse owners, which may lead them to believe that they can accurately diagnose and manage cases of lameness. This phenomenon may, at least partially, be due to the Dunning–Kruger effect, whereby the perceived experience with equine health issues of horse owners and their deep familiarity with equine behaviour can create a sense of self-confidence in their ability to handle (mild) cases of lameness.<sup>25</sup> When horse owners opt to treat their own horses, in addition to the aforementioned use and availability of analgesics in the United States, they may resort to alternative therapies.<sup>18,26</sup>



**TABLE 7** Descriptive statistics of the ranking of the seven factors of client satisfaction in equine veterinary practice by (non)professional and (non)competitive horse owners for the pre-purchase scenario

	Quality of care	Quality of service	Horsemanship	Interpersonal skills	Transfer of knowledge	Professionalism	Financial aspects
All participants							
Median	1.00	3.00	4.00	5.00	4.00	4.00	6.00
Mean	1.74	3.24	3.80	5.16	4.17	3.99	5.89
SD	1.161	1.656	1.886	1.458	1.550	1.771	1.436
Professionals							
Median	1.00	3.00	4.00	6.00	4.00	3.50	6.00
Mean	1.98	3.08	3.90	5.41	4.19	3.75	5.68
SD	1.385	1.584	1.976	1.404	1.530	1.815	1.527
Non-professionals							
Median	1.00	3.00	4.00	5.00	4.00	4.00	7.00
Mean	1.71	3.27	3.79	5.12	4.16	4.03	5.92
SD	1.116	1.667	1.872	1.463	1.554	1.761	1.419
Difference professional versus non-professional, <i>p</i> -value	0.026	0.211	0.553	0.017	0.728	0.050	0.033
Competitors							
Median	1.00	3.00	4.00	6.00	4.00	4.00	6.00
Mean	1.75	3.26	3.88	5.30	4.16	3.86	5.79
SD	1.161	1.682	1.863	1.452	1.597	1.737	1.459
Non-competitors							
Median	1.00	3.00	3.00	5.00	4.00	4.00	7.00
Mean	1.74	3.23	3.72	5.03	4.17	4.13	5.98
SD	1.616	1.631	1.908	1.452	1.502	1.794	1.409
Difference competitor versus non-competitor, <i>p</i> -value	0.870	0.939	0.114	<b>&lt;0.001</b>	0.879	0.010	0.009

Note: Significant differences are highlighted in bold.  
Abbreviation: SD, standard deviation.

In the pre-purchase scenario, more than half of the participants reported that they would first contact their veterinarians. Research by Gille et al. has indicated that amateur buyers are more likely to seek expert advice, such as that of a veterinarian, when making purchasing decisions, as they may lack confidence in their own judgement and trust their intuition less.<sup>27</sup> However, trust has been shown to play a crucial role in buyer–seller relationships. Hawes et al. argued that concepts such as trust and risk rely on individual levels of perception.<sup>28</sup> In cases where the buyer is familiar with the seller and the horse's history, less risk may be perceived when the level of trust is high, thus obviating the need for a third-party veterinary assessment.

## Seven aspects of client satisfaction

The current study further examined clients' perceptions of aspects of veterinary care in different scenarios. The most salient result is that horse owners prioritise quality of care over all other aspects, and financial aspects are considered least important across all scenarios. It is important to note that it is the perceived quality of care discussed here since horse owners can only partially judge the 'true' quality of care.<sup>2</sup> These findings align with previous research,

which emphasises the importance of a veterinarian's specific knowledge, competence and relevant skills over monetary concerns.<sup>29,30</sup>

However, a few significant differences were found in the importance of the different aspects considered by different groups of horse owners. Professionals ranked professionalism significantly higher than non-professionals in the vaccination scenario. This difference in the perception of the importance of professionalism is likely due to the differing levels of expertise, operational demands and business considerations inherent in the respective contexts of why horses are kept.<sup>31</sup> Professional horse owners often manage equine businesses as their primary source of income.<sup>32</sup> For them, veterinary consultations may be more readily viewed as something akin to regular business transactions. This may be particularly true with regard to routine veterinary care, such as vaccinations.

Conversely, the priorities of non-professional horse owners, who engage with their horses primarily for personal enjoyment and recreation, may be influenced by different factors. Their motivations may lean more towards the emotional and experiential aspects of horse ownership, such as the bond with their animals and the quality of their recreational interactions.<sup>33</sup> As a result, while non-professional horse owners still expect and value professionalism from veterinarians, their considerations may not be as

deeply intertwined with the business and operational aspects that drive the priorities of professional horse owners.

Interestingly, competitors ranked financial aspects higher than non-competitors in the vaccination scenario. Competitors might perceive vaccinations as something that needs to be done to be able to compete, rather than as their own choice, making them more price sensitive.<sup>7,34</sup>

Non-competitors ranked interpersonal skills significantly higher than competitors in the colic, lameness and pre-purchase scenarios. Competitive horse owners, often engaged in high-performance disciplines, likely place a greater premium on the veterinarian's clinical expertise in assessing the horse's physical condition, soundness and potential for (rigorous) athletic demands.<sup>35,36</sup> This could also explain why interpersonal skills in the lameness scenario were ranked the lowest overall, together with financial aspects. On the other hand, non-competitive horse owners, who engage with their horses primarily for recreational purposes, may place a relatively higher value on veterinarians' interpersonal skills. These owners may prioritise qualities such as gentleness, patience and effective communication, especially if the horse's intended role involves leisure activities. They might perceive the emphasis on interpersonal skills as reflecting the veterinarian's desire to establish positive rapport, which provides reassurance to owners seeking companionship and pleasurable interactions rather than competitive success.<sup>27,33</sup>

Furthermore, disparate roles within the equine industry may have contributed to these differences. Competitive horse owners often have a team of professionals, including trainers and specialised veterinarians, who focus on various aspects of horse care and training.<sup>36,37</sup> This division of labour allows veterinarians to concentrate more on clinical assessments. On the other hand, non-competitor horse owners might not have access to this kind of expertise, thus relying more on veterinarians for a broader range of horsemanship-related concerns.

Lastly, when it comes to lameness assessment, competitors ranked professionalism significantly higher than non-competitors. After all, to compete, the horse must be sound. As a result, the competitor likely expects the veterinarian to act in accordance with the requirements of the horse having to compete.<sup>32</sup> The rigorous standards and stringent requirements associated with competitive environments are increasingly in direct conflict with competitors' perceived and actual performance expectations. As competitive pressure increases, so does the demand for veterinarians to keep horses competing. This raises a host of ethical dilemmas for veterinarians and the equestrian industry as a whole.<sup>36,38</sup>

In the pre-purchase scenario, all participants stressed the importance of three aspects: transfer of knowledge, quality of care and quality of service. This is likely due to the multifaceted nature of this critical decision-making process.<sup>39,40</sup> Buying a horse involves making a significant purchase decision from

the side of the buyer, and the veterinarian informing the buyer of the interpretation of findings regarding the intended use is highly important during pre-purchase examinations.<sup>39,40</sup> As such, pre-purchase examinations involve a comprehensive assessment of a horse's health, soundness and suitability for intended use, all of which have profound implications for owners' investments and horse welfare.<sup>41</sup> A veterinarian who can effectively communicate complex medical information in a comprehensible manner enables prospective buyers to make informed decisions by better understanding the horse's current condition, potential risks and long-term management needs; hence, transfer of knowledge plays a significant role, as pre-purchase examinations often occur in a high-pressure environment in which the aspirations of both buyer and seller are at stake.<sup>40</sup>

Veterinary findings during a pre-purchase examination may be considered to have serious long-term repercussions for the longevity of the horse in terms of welfare and performance. As such, the outcome of a pre-purchase examination is likely to have a direct, tangible impact on the owner's objectives.<sup>8,22,35,40</sup> Furthermore, pre-purchase examinations are often accompanied by complex negotiating processes. This negotiation can involve various financial components, such as purchase price adjustments based on veterinary findings or the inclusion of warranties. These dynamic financial aspects are intricately interwoven with the outcomes of veterinary evaluations, reinforcing the notion that comprehensive and accurate medical assessments take precedence.<sup>8,40</sup>

The findings from our survey suggest that there are differences between professionals and non-professionals, and between competitors and non-competitors, in terms of how they perceive the veterinary care provided to their horses. However, it is estimated that one-third of horses owned or managed by professionals are 'idle, retired or otherwise not working'.<sup>42,43</sup> Professionals and competitors also own or take care of horses that have no economic or performance value and are, in fact, companion animals. Therefore, where it seems logical for the treating veterinarian to assume that the expectations that owners have about veterinary care will be largely based on their status as a professional, competitor or both, the relationship owners have with individual horses remains very personal and can be very different from what was perceived in the first instance.

## LIMITATIONS

This study has several limitations. The snowball effect potentially impacted the distribution of the survey through social media, resulting in unpredictable outcomes and the potential exclusion of certain participants.<sup>9</sup> Additionally, individuals without internet access or those who do not frequently use the platforms used for distribution may have been excluded from the sample, introducing bias. The findings may not be generalisable to all horse owners or

cultures, as the majority of respondents were from the Western world and owned sports and leisure horses. Response bias may also have influenced the data, as participants' answers may not fully represent their true attitudes or behaviours because of social desirability, self-reports or non-responses from certain groups.

## CONCLUSION

In the event of an emergency such as colic, most horse owners contact their veterinarians. However, when a horse shows signs of lameness, only half of the horse owners represented in this study initially called their veterinarian, and over half of the participants contacted their veterinarian for a pre-purchase examination.

It is important for veterinarians to realise that quality of care is considered most important and financial aspects are least important to horse owners in general. Within this range, there are some significant differences in the level of importance depending on the horse owner's background and veterinary scenario.

Veterinarians should bear in mind that this study only represents group differences and does not provide predictions of individual preferences or behaviours that will undoubtedly exist. These results should not be used by veterinarians to assume what is and is not important to an individual client when it comes to healthcare for their horse. It is important that priorities for care be established between the veterinarian and client through individual conversations and relationship-based care. Veterinarians must consider individual differences when providing services because a one-size-fits-all approach is unlikely to be effective. By understanding owners' preferences, veterinarians can tailor their services and expertise to meet specific client needs and expectations, leading to better client–veterinarian relationships and improved health and welfare outcomes for horses.

## AUTHOR CONTRIBUTIONS

Yteke Elte and Inga Wolframm developed the initial idea and design of the study. Yteke Elte and Inga Wolframm were responsible for the development and planning of the research methods. Yteke Elte took the lead in drafting the initial version of the manuscript. Yteke Elte was responsible for gathering and collecting the data necessary for the study. Inga Wolframm and Ilse van Grevenhof conducted the statistical and formal analysis of the data. Ilse van Grevenhof created a visual representation of the data. Mirjam Nielen and René van Weeren provided supervision and advised at the start of the project and played a significant role in reviewing and editing the manuscript.

## ACKNOWLEDGEMENTS

We extend our sincere gratitude to all individuals who participated in the survey, and we appreciate the support in survey distribution provided by those who facilitated the snowball effect. Additionally, we express

our thanks to all those who helped in promoting the survey within the equine community.

## CONFLICT OF INTEREST STATEMENT

The authors declare they have no conflicts of interest.

## FUNDING INFORMATION

The authors received no specific funding for this work.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

## ETHICS STATEMENT

The study protocol was approved by the Science-Geosciences Ethics Review Board of Utrecht University, The Netherlands (approval number: DGK S-22744).

## ORCID

Yteke Elte  <https://orcid.org/0000-0002-9633-9871>

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

**How to cite this article:** Elte Y, Wolfram I, van Grevenhof I, Nielen M, van Weeren R. Survey-based investigation of sports and leisure horse owners’ approaches to, and expectations of, equine veterinary care. *Vet Rec.* 2024;e4197. <https://doi.org/10.1002/vetr.4197>