



Self-reported cat-friendly practices and attitudes of German, French and Swiss veterinarians

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Abstract

Objectives The aim of this study was two-fold: first, to investigate the attitudes and application of cat-friendly practices among German, French and Swiss veterinarians during consultations; and second, to gain a better understanding of the relationship between the demographics of the veterinarians and variations in the application of cat-friendly practices and attitudes.

Methods A bilingual questionnaire structured around the capability, opportunity, motivation and behaviour (COM-B) model of human behaviour was distributed to veterinarians in Germany, France and Switzerland. Using Likert scales, participants were asked to report on their application of cat-friendly practices during consultations and their attitudes towards cat-friendly methods. The proportion of cat-friendly practices and attitudes were identified by grouping results across Likert scales. Multiple binary logistic regression models were performed to compare the differences in cat-friendly practices and attitudes across the three countries. Cumulative scores were calculated for practices and attitudes, and analysed for associations with veterinarian demographics using a general linear model.

Results Of the 516 respondents, 36.2% used scruffing to restrain cats, 51.9% prescribed anxiolytics for future visits and 17.1% used medication to mitigate stress during consultations. Only 37.6% thought that caregivers expected to be educated on how to prevent or reduce stress in their cats during transport. Having an employee position rather than being clinic director or partner was associated with a lower score of cat-friendly practices ($P < 0.01$) and motivation ($P = 0.02$). Whereas, awareness of cat-friendly guidelines, working in a Cat Friendly or Fear Free accredited clinic and being trained in animal behaviour contributed to higher scores in both cat-friendly practices and overall attitudes ($P < 0.001$).

Conclusions and relevance Education and promotion of guidelines on cat-friendly practices will facilitate improvements in handling cats and mitigating fear-anxiety with medication.

Plain language summary

Methods to prevent forceful restraint or an aversive environment have been developed to reduce cats' stress during veterinary visits. Information on the application of these cat-friendly methods is lacking in European countries such as Germany, France and Switzerland. Filling this information gap on cat-friendly practices is crucial to provide veterinarians with the necessary information to prioritise the application of feline stress reduction methods. A questionnaire was distributed to veterinarians working with companion animals in Germany,

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France, and Switzerland. Participants were asked to report on their practices during consultations and their opinions towards cat-friendly methods. Of the 516 respondents, 89.9% waited for the cat to leave its carrier itself during the consultation. When the cat required restraining, 36.2% of the respondents still used methods that may cause the cat stress. For cats exhibiting fear or anxiety, only 51.9% of the respondents prescribed anxiolytics for future visits. Furthermore, only 37.6% of the respondents thought that owners expected to be educated on how to prevent or reduce stress in their cats during transport. Having an employee position rather than being clinic director or partner was associated with a decrease in the application of cat-friendly methods and in being motivated to apply these methods. However, being aware of cat-friendly methods, working in a Cat Friendly or Fear Free accredited clinic and being trained in animal behaviour contributed to an increase in cat-friendly practices and in motivation to prevent cat stress. The results of the study highlight the importance of promoting cat-friendly methods, by developing educational programmes. The results also stress the need to empower veterinarians in an employee position to ensure commitment to cat-friendly practices.

Keywords: Welfare; low-stress handling; veterinary practice; cross-cultural; COM-B model

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Introduction

'Cat-friendly' guidelines have been developed to improve cats' comfort through reducing the emotions of fear, anxiety (fear-anxiety) and frustration during veterinary visits, thus enhancing cat welfare.¹⁻³ However, cat-friendly guidelines are not consistently applied; research suggests that 75% of caregivers, surveyed mostly from the UK, have never received advice from veterinarians on how to transport their cat,⁴ despite evidence that training cats to be transported leads to easier examinations and shorter consultation lengths.⁵ In addition, 60% of veterinarians surveyed in North America still use full-body restraint or scruffing to immobilise fearful cats,⁵ even though cats restrained by these methods struggle more often than passively handled cats.⁶

Research has shown that successful application of evidence-based practice depends on context and various human behavioural variables, which is the result of interacting components⁷ as conceptualised by the capability, opportunity, motivation and behaviour (COM-B) model (Figure 1).^{8,9} While veterinarians believe it is important to perform low stress practices in the veterinary environment,¹⁰ the implementation of all recommendations is not always considered feasible mainly due to space or time constraints, as well as resistance to changing habits.¹⁰ Research has also shown variable application of cat-friendly recommendations dependent on the country, which is attributable to differences in veterinarians' education on animal behaviour.⁵ While the application of cat-friendly practices has been evaluated via veterinarians' self-reporting in several English-speaking countries,^{5,11,12} similar information is lacking in European countries where French and German are spoken, such as Germany, France and Switzerland.

Furthermore, published data directly examining cat-friendly attitudes and practices of veterinarians using a framework such as the COM-B model are lacking. Filling this information gap on cat-friendly practices and attitudinal factors is crucial to understanding the barriers to improving cat welfare in veterinary practices and for prioritising the creation of feline stress reduction programmes.⁷

This study aimed to investigate the extent to which German, French and Swiss veterinarians apply cat-friendly practices during consultations and their attitudes towards these methods. This study also examined the differences in practices and attitudes according to veterinarian demographics.

Materials and methods

Population and sample

The sample population consisted of veterinarians working with companion animals in Germany, France or Switzerland at the time of data collection.

Survey design

Based on the COM-B model, an online questionnaire comprising of 51 questions (see File 1 in the supplementary material) was created using the JISC online platform (<https://www.jisc.ac.uk/online-surveys>). Using a five-point Likert scale, participants were anonymously asked to evaluate whether they apply cat-friendly practices (ie, always, often, sometimes, rarely or never) during consultations, as well as their level of agreement (ie, strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree) towards statements on cat-friendly methods.

In addition, the questionnaire included demographic data such as gender, years of experience as a veterinarian,

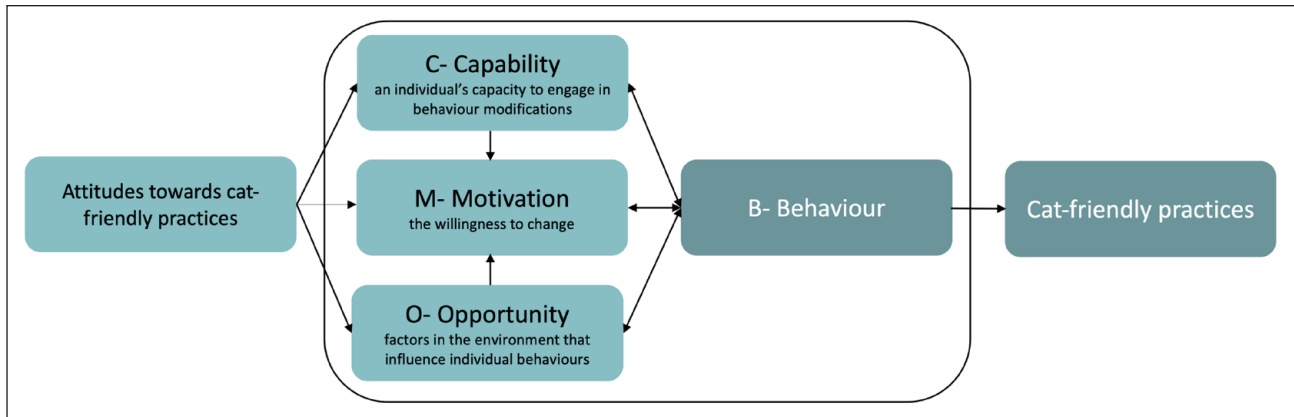


Figure 1 The capability, opportunity, motivation and behaviour (COM-B) model. Adapted from Michie et al⁸ and West and Michie⁹

position in the clinic, proportion of cats as patients, training in veterinary behavioural medicine, country and location of practice, number of veterinarians in the clinic, and whether the clinic was Cat Friendly or Fear Free (CF/FF) accredited.

The original English version was pre-tested and subsequently translated into French and German by two trilingual scientists, according to the translation, review, adjudication, pre-testing and documentation methodology.¹³ A trilingual veterinarian ensured that the translations were consistent. Completion time was approximately 15 mins.

Recruitment of respondents

Small animal veterinary associations in Germany, France and Switzerland were invited to share the link to the questionnaire with their members via relevant newsletters, websites or Facebook groups. Approximately 5000 veterinarians were exposed to the questionnaire from December 2022 to mid-February 2023.

Data handling and statistical analysis

Data were downloaded from the JISC online platform into Excel, version 16.82 (Microsoft). Data were checked and levels within some variables were grouped if the numbers were considered too low. Some questions on practices (14.7 and 15.1) and attitudes (20.4, 21.1, 21.2 and 21.4) were asked in a reversed format to minimise acquiescence bias¹⁴ and were recoded prior to analysis to ensure consistency of scale directionality.

Differences in demographic data between countries were calculated using a χ^2 test. Further analysis on practices and attitudes was approached in two different ways. First, to evaluate the extent to which cat-friendly practices were applied, a variable representing cat-friendly practices (yes/no) was created by combining always and often (yes); and sometimes, rarely and never (no). For the attitudes, a variable representing cat-friendly attitudes

(yes/no) was created by combining strongly agree and agree (yes); and neither agree nor disagree, disagree and strongly disagree (no). To evaluate the differences in cat-friendly practices and attitudes across the three countries, separate binary logistic regressions (logit link function) were performed in R, version 2023.03.0+386 (R Foundation) using the glm package.¹⁵ Country was included as the only explanatory variable in each model. The results are presented as odds ratios (ORs) and 95% confidence intervals (CIs).

Second, to measure the relationship between the demographics and variations in the application of cat-friendly practices and the attitudes, cumulative scores were created by summing across Likert raw ordinal data of practices (ie, never = 1, rarely = 2, sometimes = 3, often = 4, always = 5) and attitudes (ie, strongly disagree = 1, disagree = 2, neither agree nor disagree = 0, agree = 3, strongly agree = 4), after having computed a Cronbach's alpha. For practices, 17/18 questions were retained to calculate the cat-friendly practices cumulative score (PCS). For attitudes, 16/16 questions were retained to calculate the attitude cumulative score (ACS). Subscores were calculated: capability (Capability-ACS), opportunity (Opportunity-ACS) and motivation (Motivation-ACS), by summing the responses to the questions corresponding to the COM-B components. To measure the differences in the dependent variables of interest (ie, PCS, ACS, Capability-ACS, Opportunity-ACS and Motivation-ACS) according to demographics, stepwise linear regressions were performed in R, version 2023.03.0 +386, using the glm package. At each step, variables were added based on *P* values, and Akaike information criteria were used to set a limit on the total number of variables included in the final model.¹⁶

All models were checked to ensure a good model fit. $P \leq 0.05$ was considered statistically significant. Where appropriate, post-hoc Tukey's tests were performed and the *P* values adjusted for multiple comparisons.

Ethical approval

The study was approved by the Human Ethical Review Committee of the University of Edinburgh (HERC 2022-124). For the information letter sent to veterinarians responding to the survey and the consent statement, please see Files 2 and 3 in the supplementary material, respectively.

Results

Participants characteristics

As outlined in Table 1, 516 veterinarians responded to the questionnaire, corresponding to an approximate response rate of 10% ($n=516/5000$); 42.6% ($n=220/516$) were from Germany, 29.8% ($n=154/516$) were from Switzerland and 27.5% ($n=142/516$) were from France. Participants were predominantly female ($n=416/516$; 80.6%). Over two-thirds ($n=346/516$; 67.1%) of participants were clinic directors or partners. Slightly less than 15% worked in a CF/FF accredited practice ($n=76/516$; 14.7%), with German veterinarians overrepresented in this area ($n=52/220$; 23.6%) compared with Swiss ($n=7/154$; 4.5%; $P<0.001$) and French veterinarians ($n=17/142$; 12%; $P=0.009$) (Table 1).

Almost half ($n=254/516$; 49.2%) of respondents reported having read cat-friendly guidelines, with differences between the three countries; German respondents were overrepresented ($n=129/220$; 58.6%) in the group compared with Swiss ($n=68/154$; 44.2%; $P=0.008$) and French veterinarians ($n=57/142$; 40.1%; $P=0.001$) (Table 1).

Application of cat-friendly practices

As outlined in Table 2, during the consultation, 89.9% of respondents ($n=464/516$) waited for the cat to leave the carrier voluntarily, and 82.8% ($n=427/516$) examined the cat while allowing it to maintain its chosen position.

When restraint of the cat was required, 54.3% ($n=280/516$) used a towel and 36.2% ($n=187/516$) used scruffing or muzzling, with differences between the three countries; German respondents were more likely to avoid scruffing compared with French (OR=3.92; 95% CI=2.44–6.36; $P<0.001$) or Swiss (OR=5.43; 95% CI=3.42–8.75; $P<0.001$) respondents (Table 3).

For cats exhibiting extreme fear–anxiety, 51.9% ($n=268/516$) were prescribed anxiolytics for future visits, with differences between the three countries; French respondents were more likely to prescribe gabapentin as a pre-visit anxiolytic than their German (OR=2.16; 95% CI=1.39–3.38; $P<0.001$) and Swiss (2.93; 95% CI=1.83–4.75; $P<0.001$) counterparts.

Cat-friendly attitudes

Veterinarians ($n=492/516$; 95.3%) agree or strongly agree in being confident when examining cats and using as little restraint as possible (Table 4). Respondents ($n=486/516$; 94.2%) also felt confident in recognising the early signs of cat stress and reducing the escalation of fear. Most

respondents ($n=493/516$; 95.5%) were motivated to have positive interactions with cats (Table 4).

Most respondents ($n=417/516$; 80.8%) agreed or strongly agreed that caregivers expected them to prevent cat fear–anxiety during consultations (Table 4). However, only 37.6% ($n=194/516$) agreed or strongly agreed that caregivers expected to be educated on reducing stress in their cats during transport. There were some differences between the three countries: French veterinarians were more likely to strongly agree or agree that taking sufficient time to treat the cat was an investment in longer-term financial benefits for the practice compared with Swiss (OR=2.93; 95% CI=1.73–5.05; $P<0.001$) and German (OR=1.75; 95% CI=1.05–2.97; $P=0.03$) veterinarians (Table 5).

Effect of demographics on practices and attitudes

Being aware of cat-friendly guidelines and working in a CF/FF accredited clinic were associated with greater scores for PCS as well as ACS (Table 6) and its three components: Capability-ACS, Opportunity-ACS and Motivation-ACS (Table 7).

Similarly, respondents with prior training in animal behaviour were associated with a higher PCS, ACS, Capability-ACS and Motivation-ACS (Figure 2). Participants with over 10 years of experience were associated with a higher ACS and Capability-ACS. By contrast, veterinarians in the position of employee were shown to have a lower PCS, as well as a lower Motivation-ACS. Veterinarians that reported working in a clinic with over 10 veterinarians had lower ACS, Capability-ACS and Opportunity-ACS than those working in smaller clinics. Respondents' country of work did not significantly contribute to the multiple regression models (Table 6).

Discussion

The present study aimed to fill a knowledge gap regarding cat-friendly practices and attitudes towards cat-friendly methods among veterinarians from Germany, France and Switzerland. The study also aimed to better understand factors associated with the application of cat-friendly guidelines.

There are four key findings from this study. First, of the practices explored in the questionnaire, 3/18 were applied often or very often by more than 80% of respondents, 12/18 by 50–80% of respondents, 2/18 by 20–50% of respondents and 1/18 by less than 20% of respondents, thus highlighting a various application of cat-friendly recommendations. Second, over 65% of participants agreed or strongly agreed that they felt capable, motivated and had the opportunity to apply cat-friendly methods. There was one exception to these results, with only 37.6% of respondents agreeing they had the opportunity to advise caregivers on how to reduce their cat's stress during transport. Third, having reviewed cat-friendly guidelines or working in a CF/FF

Table 1 Demographic data from 516 respondents from Germany, Switzerland and France who completed the online questionnaire regarding cat-friendly practices and attitudes

Variables	Total n (%)	Germany n (%)	Switzerland n (%)	France n (%)	<i>P</i> *	<i>P</i> †
Respondents	516 (100.0)	220 (42.6)	154 (29.8)‡	142 (27.5)		
Gender					0.08	
Female	416 (80.6)	181 (82.3)	115 (74.7)	120 (84.5)		
Male	95 (18.4)	37 (16.8)	37 (24.0)	21 (14.8)		
Other	5 (1.0)	2 (0.9)	2 (1.3)	1 (0.7)		
Position in the practice					0.23	
Clinic director or partner	346 (67.1)	155 (70.5)	97 (63.0)	94 (66.2)		
Employee	166 (32.2)	63 (28.6)	57 (37.0)	46 (32.4)		
Other	4 (0.8)	2 (0.9)	0 (0.0)	2 (1.4)		
Experience as a veterinarian					<0.001	D vs CH <0.001; D vs F = 0.002; F vs CH = 0.54
Less than 10 years	112 (21.7)	28 (12.7)	47 (30.5)	37 (26.1)		
More than 10 years	399 (77.3)	190 (86.4)	107 (69.5)	102 (71.8)		
Missing	5 (1.0)	2 (0.9)	0 (0.0)	3 (2.1)		
Proportion of cats as patients					<0.001	D vs CH <0.001; D vs F = 0.001; F vs CH = 0.02
Less than 50% cats	243 (47.1)	139 (63.2)	44 (28.6)	60 (42.3)		
More than 50% cats	273 (52.9)	81 (36.8)	110 (71.4)	82 (57.7)		
Training in veterinary behavioural medicine					0.27	
No	449 (87.0)	197 (89.5)	133 (86.4)	119 (83.8)		
Yes	67 (13.0)	23 (10.5)	21 (13.6)	23 (16.2)		
Have reviewed cat friendly guidelines					<0.001	D vs CH <0.008; D vs F = 0.001; F vs CH = 0.6
Yes	254 (49.2)	129 (58.6)	68 (44.2)	57 (40.1)		
of which AAFP/ISFM guidelines	204 (39.5)	107 (48.6)	47 (30.5)	50 (35.2)		
of which other guidelines	50 (9.7)	22 (10.0)	21 (13.6)	7 (4.9)		
No	262 (50.8)	91 (41.4)	86 (55.8)	85 (59.9)		
Location of practice					0.05	
Urban	208 (40.3)	96 (43.6)	51 (33.1)	61 (43.0)		
Mix of rural and urban	186 (36.0)	69 (31.4)	60 (39.0)	57 (40.1)		
Rural	120 (23.3)	55 (25.0)	42 (27.3)	23 (16.2)		
Other	2 (0.4)	0 (0.0)	1 (0.6)	1 (0.7)		
Number of veterinarians in the clinic					0.005	D vs CH = 0.08; D vs F = 0.005; F vs CH = 0.31
Less than 10	456 (88.4)	184 (83.7)	140 (90.8)	132 (93.0)		
More than 10	49 (9.5)	31 (14.1)	12 (7.7)	6 (4.2)		
Missing	11 (2.1)	5 (2.3)	2 (1.3)	4 (2.8)		
CF/FF accreditation of the clinic					<0.001	D vs CH <0.001; D vs F = 0.009; F vs CH = 0.03
No or not sure	440 (85.3)	168 (76.4)	147 (95.5)	125 (88.0)		
Yes	76 (14.7)	52 (23.6)	7 (4.5)	17 (12.0)		

n = number; % = percentage; *P* value comparing three countries; *P* value of pairwise comparisons

P values in bold represent those that were statistically significant (ie, ≤ 0.05)

*A χ^2 test was performed; 'missing' and 'other' were excluded from the analysis

†Pairwise comparisons were performed: Germany with Switzerland (D vs CH); Germany with France (D vs F); France with Switzerland (F vs CH)

‡Switzerland: 93 (60.4%) from German and 61 (39.6%) from French speaking regions

Table 2 Summary of results from 516 respondents from Germany, Switzerland and France who answered 'always' or 'often' (for inverted questions 'never' or 'sometimes') to the 18/18 questions on cat-friendly practices

Questions on practices	Total	Germany	Switzerland	France
	n/total (%)	n/total (%)	n/total (%)	n/total (%)
How frequently do you advise owners on:				
12.1 the suitability of types of cat carrier?	309/516 (59.9)	135/220 (61.4)	78/154 (50.7)	96/142 (67.6)
12.2 how to help develop a positive association for the cat with its carrier?	293/516 (56.8)	120/220 (54.5)	69/154 (44.8)	104/142 (73.2)
For cats in waiting areas or within the practice/clinic environment, how frequently do you/other staff members:				
13.1 offer a blanket in order to cover their carrier?	192/516 (37.2)	109/220 (49.5)	50/154 (32.5)	33/142 (23.2)
13.2 offer to place the carrier high up in order to prevent visual arousal if other pets are on the floor?	397/516 (76.9)	183/220 (83.2)	99/154 (64.3)	115/142 (81.0)
13.3 offer cats hiding opportunities or provide the cat with a visual barrier?	308/516 (59.7)	133/220 (60.5)	82/154 (53.2)	93/142 (65.5)
For routine cat examinations, how frequently do you:				
14.1 open the door of the carrier and allow the cat time to voluntarily come out?	464/516 (89.9)	195/220 (88.6)	135/154 (87.7)	134/142 (94.4)
14.2 examine cats where they appear most comfortable?	350/516 (67.8)	158/220 (71.8)	84/154 (54.5)	108/142 (76.1)
14.3 examine the cat allowing it to maintain its chosen position?	427/516 (82.8)	186/220 (84.5)	119/154 (77.3)	122/142 (85.9)
14.4 offer treats or rewards to positively engage with the cat?	271/516 (52.5)	117/220 (53.2)	89/154 (57.8)	65/142 (45.8)
14.5 let the cat to go freely within the consultation room?	362/516 (70.2)	130/220 (59.1)	123/154 (79.9)	109/142 (76.8)
14.6 use products such as Feliway Classic and/or Pet Remedy?	254/516 (49.2)	110/220 (50.0)	62/154 (40.3)	82/142 (57.7)
14.7 inverted (ie, never or rarely) start with the most unpleasant procedure or examination?	426/516 (82.6)	185/220 (84.1)	125/154 (81.2)	116/142 (81.7)
For routine cat examinations, when greater restraint is required, how frequently do you:				
15.1 inverted (ie, never or rarely) use techniques such as scruffing and/or muzzling?	329/516 (63.8)	181/220 (82.3)	71/154 (46.1)	77/142 (54.2)
15.2 use towel wrapping?	280/516 (54.3)	107/220 (48.6)	84/154 (54.5)	89/142 (62.7)
15.3 use chemical restraint methods such as medetomidine + opioid?	88/516 (17.1)	27/220 (12.3)	25/154 (16.2)	36/142 (25.4)
For routine examinations of extremely fearful, stressed or handling intolerant cats, how frequently do you:				
16.1 abort the examination and offer an alternative approach to manage the cat's stress more effectively?	319/516 (61.8)	143/220 (65.0)	93/154 (60.4)	83/142 (58.5)
16.2 offer anxiolytics such as gabapentin during transit or within the practice/clinic prior to future visits?	268/516 (51.9)	108/220 (49.1)	64/154 (41.6)	96/142 (67.6)
Between consultations, how frequently:				
17.1 is the consultation room aired out to eliminate aversive odours for the cats?	345/516 (66.9)	170/220 (77.3)	104/154 (67.5)	71/142 (50.0)

Data are number of respondents (n)/total and percentage (%)

accredited clinic were positively associated with PCS as well as with the three components of ACS: Capability-ACS, Opportunity-ACS and Motivation-ACS. By contrast, having an employee position was associated with a lower PCS and Motivation-ACS, and working in a clinic with over 10 veterinarians was associated with a lower overall ACS. Finally, respondents' countries were not associated with PCS.

Application of cat-friendly practices

With over 80% of participants having reported to always or often allowing the cat to maintain control over its environment in the veterinary context, the results of the current study were similar to previous research among veterinary professionals working primarily in the UK.¹¹

There were significant differences in the prescription of anxiolytic prior to consultation; 67.7% of respondents

Table 3 Pairwise comparison of cat-friendly practices by country from 516 veterinarians having responded 'always' and 'often' (for inverted questions 'never' and 'rarely') to the 18/18 questions on practices in Germany (D), Switzerland (CH) and France (F)

Questions on practices	OR D vs CH (95% CI)	P	OR D vs F (95% CI)	P	OR CH vs D (95% CI)	P	OR CH vs F (95% CI)	P	OR F vs D (95% CI)	P	OR F vs CH (95% CI)	P
How frequently do you advise owners on:												
12.1 the suitability of types of cat carrier?	1.55 (1.02–2.35)	0.001	0.76 (0.49–1.18)	0.22	0.65 (0.42–0.98)	0.04	0.49 (0.31–0.79)	0.003	1.31 (0.85–2.06)	0.23	2.03 (1.27–3.28)	0.003
12.2 how to help develop a positive association for the cat with its carrier?	1.48 (0.98–2.24)	< 0.001	0.44 (0.28–0.69)	< 0.001	0.68 (0.44–1.02)	0.06	0.3 (0.18–0.48)	< 0.001	2.28 (1.45–3.6)	< 0.001	3.37 (2.08–5.54)	< 0.001
For cats in waiting areas or within the practice/clinic environment, how frequently do you/other staff members:												
13.1 offer a blanket in order to cover their carrier?	2.04 (1.34–3.15)	0.001	3.24 (2.04–5.25)	< 0.001	0.49 (0.31–0.74)	0.001	1.59 (0.95–2.67)	0.08	0.31 (0.19–0.49)	< 0.001	0.63 (0.37–1.05)	0.07
13.2 offer to place the carrier high up in order to prevent visual arousal if other pets are on the floor?	2.75 (1.7–4.48)	< 0.001	1.16 (0.67–2.00)	0.59	0.36 (0.22–0.58)	< 0.001	0.42 (0.25–0.71)	0.001	0.86 (0.50–1.50)	0.59	2.37 (1.4–4.08)	0.001
13.3 offer cats hiding opportunities or to provide the cat a visual barrier?	1.34 (0.89–2.04)	0.1	0.81 (0.52–1.25)	0.33	0.75 (0.49–1.13)	0.17	0.6 (0.37–0.96)	0.03	1.24 (0.80–1.94)	0.33	1.67 (1.05–2.67)	0.03
For routine cat examinations, how frequently do you:												
14.1 open the door of the carrier and allow the cat time to voluntarily come out?	1.10 (0.58–2.07)	0.77	0.47 (0.19–1.02)	0.07	0.91 (0.48–1.73)	0.77	0.42 (0.17–0.97)	0.05	2.15 (0.98–5.22)	0.07	2.36 (1.03–5.89)	0.06
14.2 examine cats where they appear to be most comfortable?	2.12 (1.38–3.28)	< 0.001	0.80 (0.49–1.30)	0.37	0.47 (0.30–0.72)	< 0.001	0.38 (0.23–0.62)	< 0.001	1.24 (0.77–2.04)	0.37	2.65 (1.62–4.40)	< 0.001
14.3 examine the cat allowing it to maintain its chosen position?	1.61 (0.95–2.73)	0.08	0.90 (0.49–1.62)	0.72	0.62 (0.36–1.05)	0.08	0.56 (0.3–1.01)	0.06	1.12 (0.62–2.06)	0.72	1.79 (0.99–3.33)	0.06
14.4 offer treats or rewards to positively engage the cat?	0.83 (0.55–1.26)	0.41	1.35 (0.88–2.06)	0.16	1.21 (0.79–1.82)	0.37	1.62 (1.03–2.58)	0.04	0.74 (0.49–1.14)	0.17	0.62 (0.39–0.97)	0.03
14.5 let the cat go freely within the consultation room?	0.36 (0.22–0.58)	< 0.001	0.80 (0.49–1.30)	< 0.001	2.75 (1.72–4.47)	< 0.001	1.2 (0.69–2.1)	0.52	2.29 (1.44–3.71)	< 0.001	0.83 (0.48–1.45)	0.5

(Continued)

Table 3 (Continued)

Questions on practices	OR D vs CH (95% CI)	P	OR D vs F (95% CI)	P	OR CH vs D (95% CI)	P	OR CH vs F (95% CI)	P	OR F vs D (95% CI)	P	OR F vs CH (95% CI)	P
14.6 use products such as Feliway Classic and/or Pet Remedy?	1.48 (0.98–2.26)	0.06	0.73 (0.48–1.12)	0.14	0.67 (0.44–1.02)	0.06	0.49 (0.31–0.78)	0.002	1.37 (0.89–2.09)	0.14	2.03 (1.28–3.23)	0.002
14.7 inverted start with the most unpleasant procedure or examination?	1.23 (0.71–2.11)	0.46	1.18 (0.67–2.06)	0.54	0.82 (0.47–1.40)	0.46	0.97 (0.54–1.74)	0.9	0.84 (0.48–1.49)	0.55	1.04 (0.58–1.87)	0.91
For routine cat examinations when greater restraint is required, how frequently do you:												
15.1 inverted use techniques such as scruffing and/or muzzling?	5.43 (3.42–8.75)	< 0.001	3.92 (2.44–6.36)	< 0.001	0.18 (0.11–0.29)	< 0.001	0.72 (0.46–1.14)	0.16	0.26 (0.16–0.41)	< 0.001	1.38 (0.88–2.19)	0.163
15.2 use towel wrapping?	0.79 (0.52–1.19)	0.26	0.56 (0.37–0.87)	0.01	1.27 (0.84–1.91)	0.26	0.71 (0.45–1.14)	0.16	1.77 (1.16–2.74)	0.01	1.40 (0.88–2.23)	0.15
15.3 use chemical restraint methods such as medetomidine + opioid?	0.72 (0.40–1.30)	0.27	0.41 (0.24–0.71)	0.01	1.39 (0.76–2.49)	0.28	0.57 (0.32–1.01)	0.05	2.43 (1.40–4.25)	0.01	1.75 (0.99–3.13)	0.06
For routine examinations of extremely fearful, stressed or handling intolerant cats, how frequently do you:												
16.1 abort the examination and offer an alternative approach to manage the cat's stress more effectively?	1.22 (0.80–1.86)	0.36	1.32 (0.85–2.04)	0.21	0.82 (0.53–1.25)	0.36	1.08 (0.68–1.73)	0.7	0.76 (0.49–1.17)	0.21	0.92 (0.58–1.47)	0.73
16.2 offer anxiolytics such as gabapentin during transit or within the practice/clinic prior to future visits?	1.36 (0.90–2.06)	0.15	0.46 (0.30–0.71)	< 0.001	0.74 (0.48–1.11)	0.15	0.34 (0.21–0.55)	< 0.001	2.16 (1.39–3.38)	< 0.001	2.93 (1.83–4.75)	< 0.001
Between consultations, how frequently:												
17.1 is the consultation room aired out to eliminate aversive odours for the cats?	1.63 (1.03–2.60)	0.03	3.40 (2.16–5.39)	< 0.001	0.61 (0.39–0.97)	0.04	2.08 (1.3–3.35)	0.001	0.29 (0.19–0.46)	< 0.001	0.48 (0.30–0.77)	0.002

Data are odds ratio (OR) and 95% confidence interval (CI) from binary logistic regression models
P values in bold represent those that were statistically significant (ie, ≤ 0.05)

Table 4 Summary of results from 516 respondents from Germany, Switzerland and France who answered 'strongly agree' or 'agree' (for inverted questions 'strongly disagree' or 'disagree') to the 16/16 questions on attitudes

Questions on attitudes	Total	Germany	Switzerland	France
	n/total (%)	n/total (%)	n/total (%)	n/total (%)
Capability				
19.1 I feel confident in my ability to advise owners on how to reduce cat stress during transport to the practice/clinic	451/516 (87.4)	198/220 (90.0)	129/154 (83.8)	124/142 (87.3)
19.2 I feel confident in my ability to examine cats using minimal restraint	492/516 (95.3)	209/220 (95.0)	149/154 (96.8)	134/142 (94.4)
19.3 I feel confident in my ability to recognise early signs of fear or anxiety and reduce escalation of fear in cats	486/516 (94.2)	203/220 (92.3)	148/154 (96.1)	135/142 (95.1)
19.4 I feel confident in my ability to positively affect the mental wellbeing of my feline patients by creating an unthreatening environment	409/516 (79.3)	172/220 (78.2)	127/154 (82.5)	110/142 (77.5)
Motivation				
20.3 Advising owners about how to reduce cat stress during transport is an investment in longer-term financial benefits for my practice	340/516 (65.9)	143/220 (65.0)	95/154 (61.7)	102/142 (71.8)
20.4 inverted (ie, strongly disagree or disagree) Advising owners on how to reduce cat stress during transport is too time consuming for me	403/516 (78.1)	173/220 (78.6)	121/154 (78.6)	109/142 (76.8)
21.1 inverted (ie, strongly disagree or disagree) Allowing a cat to voluntarily come out of its carrier is too time consuming for me	388/516 (75.2)	172/220 (78.2)	111/154 (72.1)	105/142 (73.9)
21.2 inverted (ie, strongly disagree or disagree) Airing the room between patients is too time consuming for me	391/516 (75.8)	182/220 (82.7)	121/154 (78.6)	88/142 (62.0)
21.3 Taking as much time as needed to treat cats is an investment in longer-term financial benefits for my practice	367/516 (71.1)	158/220 (71.8)	93/154 (60.4)	116/142 (81.7)
22.3 Ensuring positive interactions with cats is gratifying for me	493/516 (95.5)	206/220 (93.6)	147/154 (95.5)	140/142 (98.6)
22.4 It is part of my professional responsibility to make sure that the cat is not afraid during the consultations	461/516 (89.3)	198/220 (90.0)	139/154 (90.3)	124/142 (87.3)
Opportunity				
20.1 Owners expect me to advise them on how to reduce cat stress during transport to the practice/clinic	194/516 (37.6)	82/220 (37.3)	54/154 (35.1)	58/142 (40.8)
20.2 Owners expect me to prevent fear or anxiety in their cat during the consultation	417/516 (80.8)	186/220 (84.5)	119/154 (77.3)	112/142 (78.9)
21.4 inverted (ie, strongly disagree or disagree) Taking as much time as needed to treat cats is not compatible with the planning of a veterinary practice	342/516 (66.3)	146/220 (66.4)	92/154 (59.7)	104/142 (73.2)
22.1 Ensuring positive interactions with cats improves the confidence of the owners in me as a caring professional	505/516 (97.9)	214/220 (97.3)	152/154 (98.7)	139/142 (97.9)
22.2 Ensuring positive interactions with cats will ensure that owners request more regular health checks for their cat	418/516 (81.0)	193/220 (87.7)	111/154 (72.1)	114/142 (80.3)

Data are number of respondents (n)/total and percentage (%)

Table 5 Pairwise comparison of cat-friendly attitudes by country from 516 veterinarians having responded 'strongly agree' and 'agree' (for inverted questions 'strongly disagree' and 'disagree') to the 16/16 questions on attitudes in Germany (D), Switzerland (CH) and France (F)

Questions on attitudes	OR D vs CH (95% CI)	P	OR D vs F (95% CI)	P	OR CH vs D (95% CI)	P	OR CH vs F (95% CI)	P	OR F vs D (95% CI)	P	OR F vs CH (95% CI)	P
Capability												
19.1 I feel confident in my ability to advise owners on how to reduce cat stress during transport to the practice/clinic	1.74 (0.94–3.25)	0.07	1.31 (0.67–2.53)	0.43	0.57 (0.31–1.06)	0.08	0.75 (0.38–1.43)	0.4	0.77 (0.40–1.50)	0.43	1.34 (0.7–2.6)	0.38
19.2 I feel confident in my ability to examine cats using minimal restraint	0.64 (0.20–1.79)	0.41	1.13 (0.43–2.87)	0.79	1.57 (0.56–5.06)	0.41	1.78 (0.58–6.01)	0.3	0.88 (0.35–2.33)	0.79	0.56 (0.17–1.73)	0.32
19.3 I feel confident in my ability to recognise early signs of fear or anxiety and reduce escalation of fear in cats	0.48 (0.17–1.20)	0.14	0.62 (0.23–1.48)	0.30	2.07 (0.84–5.84)	0.14	1.28 (0.41–4.06)	0.6	1.62 (0.68–4.27)	0.30	0.78 (0.25–2.41)	0.67
19.4 I feel confident in my ability to positively affect the mental wellbeing of my feline patients by creating an unthreatening environment	0.76 (0.45–1.28)	0.31	1.04 (0.62–1.73)	0.87	1.31 (0.78–2.24)	0.31	1.37 (0.77–2.44)	0.3	0.96 (0.58–1.60)	0.87	0.73 (0.41–1.29)	0.28
Motivation												
20.3 Advising owners about how to reduce cat stress during transport is an investment in longer-term financial benefits for my practice	1.61 (0.95–2.73)	0.51	0.73 (0.46–1.15)	0.18	0.87 (0.57–1.33)	0.51	0.63 (0.39–1.03)	0.07	1.37 (0.87–2.18)	0.18	1.58 (0.97–2.59)	0.07

(Continued)

Table 5 (Continued)

Questions on attitudes	OR D vs CH (95% CI)	P	OR D vs F (95% CI)	P	OR CH vs D (95% CI)	P	OR CH vs F (95% CI)	P	OR F vs D (95% CI)	P	OR F vs CH (95% CI)	P
20.4 Inverted Advising owners on how to reduce cat stress during transport is too time consuming for me	1.00 (0.60–1.65)	0.98	1.11 (0.67–1.84)	0.67	1.00 (0.60–1.66)	0.99	1.11 (0.64–1.92)	0.7	0.90 (0.54–1.50)	0.68	0.9 (0.52–1.56)	0.71
21.1 Inverted Allowing a cat to voluntarily come out of its carrier is too time consuming for me	1.39 (0.86–2.23)	0.17	1.26 (0.77–2.06)	0.35	0.72 (0.45–1.16)	0.18	0.91 (0.54–1.52)	0.7	0.79 (0.48–1.30)	0.35	1.1 (0.66–1.84)	0.72
21.2 Inverted Airing the room between patients is too time consuming for me	1.31 (0.77–2.20)	0.001	2.94 (1.81–4.81)	< 0.001	0.77 (0.46–1.29)	0.31	2.25 (1.35–3.78)	0.001	0.34 (0.21–2.97)	< 0.001	0.44 (0.26–0.74)	0.001
21.3 Taking as much time as needed to treat cats is an investment in longer-term financial benefits for my practice	1.67 (1.08–2.59)	0.02	0.57 (0.34–0.95)	0.03	0.60 (0.39–0.93)	0.02	0.34 (0.2–0.58)	< 0.001	1.75 (1.05–2.97)	0.03	2.93 (1.73–5.05)	< 0.001
22.3 Ensuring positive interactions with cats is gratifying for me	0.70 (0.26–1.73)	0.45	0.21 (0.03–0.77)	0.04	1.43 (0.58–3.85)	0.45	0.30 (0.04–1.27)	0.13	4.76 (1.30–30.60)	0.04	3.33 (0.79–22.63)	0.14
22.4 It is part of my professional responsibility to make sure that the cat is not afraid during the consultation	0.97 (0.48–1.92)	0.93	1.31 (0.67–2.53)	0.43	1.03 (0.52–2.09)	0.93	1.35 (0.65–2.82)	0.42	0.77 (0.40–1.50)	0.43	0.74 (0.36–1.54)	0.42

(Continued)

Table 5 (Continued)

Questions on attitudes	OR D vs CH (95% CI)	P	OR D vs F (95% CI)	P	OR CH vs D (95% CI)	P	OR CH vs F (95% CI)	P	OR F vs D (95% CI)	P	OR F vs CH (95% CI)	P
Opportunity												
20.1 Owners expect me to advise them on how to reduce cat stress during transport to the practice/clinic	1.10 (0.72–1.69)	0.66	0.86 (0.56–1.33)	0.49	0.91 (0.59–1.39)	0.66	0.78 (0.49–1.25)	0.3	1.16 (0.75–1.79)	0.49	1.28 (0.8–2.05)	0.31
20.2 Owners expect me to prevent fear or anxiety in their cat while in consultation	1.61 (0.95–2.73)	0.07	1.47 (0.85–2.53)	0.17	0.62 (0.37–1.05)	0.08	0.91 (0.52–1.58)	0.74	0.68 (0.40–1.18)	0.17	1.10 (0.63–1.91)	0.74
21.4 Inverted Taking as much time as needed to treat cats is not compatible with the planning of a veterinary practice	1.33 (0.87–2.04)	0.19	0.72 (0.45–1.14)	0.16	0.75 (0.49–1.15)	0.19	0.54 (0.33–0.88)	0.01	1.39 (0.88–2.22)	0.17	1.84 (1.13–3.03)	0.02
22.1 Ensuring positive interactions with cats improves the confidence of the owners in me as a caring professional	0.47 (0.07–2.07)	0.36	0.77 (0.16–2.97)	0.71	2.13 (0.48–14.68)	0.36	1.64 (0.27–12.59)	0.6	1.30 (0.34–6.23)	0.72	0.61 (0.08–3.73)	0.6
22.2 Ensuring positive interactions with cats will ensure that owners request more regular health checks for their cat	2.77 (1.63–4.77)	<0.001	1.76 (0.98–3.14)	0.06	0.36 (0.21–0.61)	<0.001	0.63 (0.37–1.09)	0.1	0.57 (0.32–1.02)	0.02	1.58 (0.92–2.74)	0.1

Data are odds ratio (OR) and 95% confidence interval (CI) from binary logistic regression models
P values in bold represent those that were statistically significant (ie, ≤ 0.05)

Table 6 Results from the stepwise linear regression model investigating the effect of respondents' demographics on the practice cumulative score (PCS) and the attitude cumulative score (ACS)

Demographics	PCS				ACS			
	Regression coefficient	SE	95% CI	P	Regression coefficient	SE	95% CI	P
(Intercept)	52.21	1.02	50.21–54.21	<0.001	40.29	1.30	37.73–42.83	<0.001
Have reviewed cat friendly guidelines	5.81	0.73	4.36–7.25	<0.001	3.96	0.81	2.37–5.55	<0.001
Cat Friendly/Fear Free accreditation: yes	5.31	0.94	3.47–7.16	<0.001	4.04	1.03	2.01–6.07	<0.001
Gender: female	5.04	0.93	3.21–6.85	<0.001	2.43	1.02	0.43–4.42	0.017
Training in animal behaviour: yes	3.83	1.04	1.79–5.87	<0.001	2.99	1.16	0.71–5.28	0.010
Position in the clinic: employee	–2.33	0.78	–3.85 to –0.81	<0.01				
More than 50% cats as patients	2.94	0.73	1.51 to 4.38	<0.001				
Country: France	1.47	0.88	–0.26 to 3.20	0.095				
Country: Switzerland	–1.55	0.89	–3.30 to 0.20	0.082				
Experience as a veterinarian: >10 years					3.37	0.96	1.48–5.26	0.001
Number of veterinarians in the clinic: >10					–5.05	0.93	–6.89 to –3.21	<0.001

PCS was measured by the addition of scores to the 17/18 questions on practices (ie, never = 1, rarely = 2, sometimes = 3, often = 4 and always = 5)

ACS was measured by the addition of scores to the 16/16 questions on attitudes (ie, strongly disagree = 1, disagree = 2, neither agree nor disagree = 0, agree = 3 and strongly agree = 4)

Data are regression coefficient, standard error, 95% confidence interval (CI)

P values in bold represent those that were statistically significant (ie, ≤ 0.05)

Empty cells indicate demographic variables that were not retained in the final model

working in France prescribed pre-visit gabapentin to alleviate cat fear–anxiety compared with less than 50% of both Swiss and German respondents. This variation may depend on national regulation for prescribing non-veterinary medications, professional experience and habits, and the training curriculum between the countries.⁵ These differences may also depend on misconceptions such as fear of side effects regarding particular medications, as has been reported for the prescription of analgesics in veterinary practices.^{17,18} Caregiver's awareness regarding the deleterious impact of stress on their cat, as well as their personal experience with psychoactive medication, may also play a role in the administration of anxiolytic drugs in cats prior to a veterinary visit.¹⁹ Further research on both veterinarians and caregivers is needed to better understand the differences between the three countries in given pre-appointment medication (ie, gabapentin) despite its well established effectiveness in safely alleviating cat stress.^{20–23}

Furthermore, there were some differences between countries regarding the use of semiochemicals (pheromones or valerian-based products) to prevent or decrease stress, with Swiss respondents using semiochemicals the least (40.3%) and French respondents the most (57.7%). The French results were closer to the results of previous

studies conducted in the UK, with 72–88% of respondents using pheromones.^{11,24} As evidence is still scarce on the effectiveness of semiochemicals in reducing cat stress in the veterinary environment,^{25,26} these differences may be attributed to the promotion by the product manufacturer depending on the country.

Attitudes towards cat-friendly methods

The current study suggests that respondents felt responsible for limiting their feline patients' stress; they generally agreed to being confident in their skills to identify, prevent and mitigate fear–anxiety in cats. These findings are consistent with the previous literature.^{11,27,28}

While most respondents (87.4%) agreed to being confident in advising caregivers on appropriate transportation of their cat, only a minority (37.6%) agreed that caregivers expect to be advised on how to prevent stress during the transportation process. Research reported that caregivers from the UK expected to be informed of preventive healthcare, but veterinarians felt that caregivers lacked interest in receiving such information, with time pressure being an additional cause for not informing caregivers during preventive healthcare consultation.^{29,30} Time pressure did not appear to be an issue in the current study, as most respondents (78.1%) agreed that it was possible

Table 7 Results from the stepwise linear regression models investigating the effect of respondents' demographics on the three subscores of the attitude cumulative score (ACS): Capability-ACS, Opportunity-ACS and Motivation-ACS

Demographics	Capability-ACS				Opportunity-ACS				Motivation-ACS			
	Regression coefficient	SE	95% CI	P	Regression coefficient	S	95% CI	P	Regression coefficient	SE	95% CI	P
(Intercept)	6.531	0.716	5.12–7.94	<0.001	11.996	0.578	10.86–13.13	<0.001	16.148	0.961	14.26–18.04	<0.001
Have reviewed cat-friendly guidelines	3.125	0.51	2.12–4.13	<0.001	1.977	0.588	0.82–3.13	<0.001	3.289	0.837	1.64–4.93	<0.001
Cat Friendly/Fear Free accreditation of the clinic: yes	1.504	0.332	0.80–2.2	<0.001	1.139	0.388	0.38–1.90	<0.01	1.888	0.556	0.80–2.98	<0.01
Gender: female												
Training in animal behaviour: yes	1.397	0.383	0.64–2.15	<0.001					1.917	0.567	0.80–3.03	<0.01
Position in the practice: employee									1.511	0.626	0.28–2.742	0.016
Country: France									–1.15	0.499	–2.3 to –0.17	0.022
Country: Switzerland												
More than 50% cats as patients	0.613	0.262	0.09–1.13	0.02								
Experience as a veterinarian: > 10 years	1.421	0.318	0.80–2.05	<0.001								
Number of veterinarians in the clinic: > 10	–1.065	0.315	–1.68 to 0.45	0.001	–1.4	0.361	–2.11 to –0.69	<0.001				

Capability-ACS is the sum of the scores of 4/16 questions (19, 1;19, 2;19, 3;19, 4); Opportunity-ACS the sum of the scores of 5/16 questions (20, 1, 20, 2, 21, 4, 22, 1, 22, 2); and Motivation-ACS the sum of the scores of 7/16 questions (20, 3, 20, 4, 21, 1, 21, 2, 21, 3, 22, 3, 22, 4)

Data are regression coefficient, standard error, 95% confidence interval (CI)

P values in bold represent those that were statistically significant (ie, ≤ 0.05)

Empty cells indicate demographic variables that were not retained in the final model

Demographics	PCS	ACS			
		Overall	Capability	Opportunity	Motivation
Having reviewed cat friendly guidelines					
CF/FF accreditation of the clinic : Yes					
Gender : Female					
Training in animal behaviour : Yes					
Position in the clinic : Employee					
More than 50% cats as patients					
Country: France					
Country : Switzerland					
Experience as veterinarian : >10 years					
Number of veterinarians in the clinic : >10					

Figure 2 Schematic figure summarising the results of the stepwise linear regression models for the effect of respondents' demographics on the practice cumulative score (PCS), the attitude cumulative score (ACS) and the subscores, that is, Capability-ACS, Opportunity-ACS and Motivation-ACS. Green = significant positive association of demographics with PCS, ACS or subscores; orange = significant negative association of demographics with PCS, ACS or subscores; grey = no significant association of demographics with PCS, ACS or subscores. PCS was measured by the addition of scores to the 17/18 questions on practices (ie, never = 1; rarely = 2; sometimes = 3; often = 4; and always = 5). ACS was measured by the addition of scores to the 16/16 questions on attitudes (strongly disagree = 1; disagree = 2; neither agree nor disagree = 0; agree = 3; and strongly agree = 4). Capability-ACS is the sum of scores of 4/16 questions (19.1, 19.2, 19.3, 19.4), Opportunity-ACS is the sum of scores of 5/16 questions (20.1, 20.2, 21.4, 22.1, 22.2) and Motivation-ACS the sum of scores of 7/16 questions (20.3, 20.4, 21.1, 21.2, 21.3, 22.3, 22.4)

to take time to offer recommendations to caregivers on appropriate transportation of their cat. Further exploration of the mutual expectations of veterinarians and caregivers is crucial for removing mismatched expectations, improving communication and ensuring cat stress prevention in the veterinary context.

Associated factors to cat-friendly practices and attitudes

In line with previous literature,^{5,11} the current results highlight that working in a CF/FF accredited clinic is associated with an increase in PCS and ACS. In addition, having reviewed cat-friendly guidelines or having been trained in animal behaviour was positively associated with PCS and with Capability-ACS, Opportunity-ACS and Motivation-ACS. In the current study, only 49.2% of respondents had read cat-friendly guidelines, suggesting a lack of knowledge on cat-friendly methods. Furthermore, as only 13% of respondents had attended courses on animal behaviour and there is some evidence that teaching of ethology-centred handling methods in the veterinary curriculum is limited,²⁸ respondents may have lacked knowledge on the underlying causes of cat stress,¹² and various means to reduce it.³¹ Finally, since the cat-friendly guidelines are available in English, the language barrier could explain why only half of the respondents had read them.³²

The current study highlights that being an employee rather than a clinic director or partner was associated with a lower motivation score (Motivation-ACS) and cat-friendly practices (PCS). Even though no similar study exists with which to compare these results, potential explanations to limited motivation in applying cat-friendly methods may include a lack of capability acquired through experience and training, as employees

of a veterinary clinic are more frequently in the early stages of their professional career³³ and may not have received adequate training on the importance of cat-friendly practices.³⁴ Furthermore, environmental factors can lead to employees having little autonomy in their work, since many employers do not have the clinic team working collaboratively³⁵ and this may decrease motivation in preventing cat fear-anxiety.³⁶

The present study found that working in a larger clinic was associated with a lower ACS. This finding refutes previous work emphasising that, compared with smaller veterinary clinics, larger clinics apply protocols more rigorously³⁷ and adopt new protocols more quickly.³⁸ In the current study, clinic size (ie, >10 veterinarians) may be a confounding factor, given that positions held by the veterinary staff are generally at the employee level. However, working in a larger clinic may cause employees to feel unsupported by their superiors in applying cat-friendly recommendations or experience additional workload during busy working days,^{36,37} thus leading to a decrease in opportunity or commitment to apply cat-friendly methods.

In the context of the growing number of larger veterinary clinics across Europe,³³ the findings of the current study stress the importance of creating strategies to support teams in implementing cat-friendly interventions. These strategies include multimodal interventions such as the prevention of infections in veterinary clinics (ie, provision of training, display of posters or technique guidelines, evaluation of adherence rates and reinforcement by leadership and role modelling).³⁷

Study limitations

The current study has several limitations. First, there is an overrepresentation of female respondents (80.6%)

compared with the population of veterinarians, which is about 60% female,³³ causing a limitation in the generalisability of the results. Indeed, more female veterinarians responded to the questionnaire because they may be more sensitive to animal welfare than male veterinarians.^{39,40} There is also some evidence suggesting that the online survey response rate is higher among female than male participants.⁴¹

Second, the approximative response rate of 10% limits the generalisation of the findings. Indeed, overrepresentation of respondents concerned with cat welfare cannot be excluded as a source of bias.

Third, the self-reporting method may have led respondents to overrate their responses⁴² compared with the practices that may be observed as demonstrated in previous research on Fear Free clinics after having first interviewed veterinarians and then observed their consultations.²⁷ Respondents of the current study may also have overestimated their capacities, with previous research indicating 77% of veterinarians felt confident to identify fear-anxiety or frustration;²⁷ however, when observed in practice, the veterinarians did not identify dog fear-anxiety or frustration in 50% of cases.⁴³

Conclusions

The results of the current study emphasised veterinarians' agreement with being capable, motivated and having the opportunity to apply cat-friendly methods; however, some cat-friendly practices were partially implemented and there were significant differences between Germany and Switzerland, as well as France. This variation in the application of cat-friendly practices stresses the importance of veterinary associations and schools placing greater emphasis on the standardisation of application of cat-friendly practices through professional development and curricula.

Holding an employee position and working in larger clinics were associated with a decrease in cat-friendly practices and in agreement with being capable, motivated and having the opportunity to apply cat-friendly methods. Given the increase both in the number of staff with employee status and the number of larger practices in European countries, these findings stress the importance of developing management styles that actively support programmes to sustainably strengthen the implementation of cat-friendly recommendations.

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Supplementary material The following files are available as supplementary material:

File 1: Questionnaire on cat-friendly practices and attitudes.

File 2: Information letter.

File 3: Consent statement.

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