



## Profile of 5213 owners and perceptions about feline care and veterinary medical care

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**ABSTRACT:** The objective of the present study was to know the profile of Brazilian cat owners and their perceptions of responsible ownership and the veterinary care environment. The application of a semi-structured online questionnaire investigating the owner's socioeconomic level and perception of knowledge concerning health care and history of medical-veterinary care of their cats using the snowball method. A total of 5,213 participants were included, of which: 93% were women, 52% were single and lived in urban areas (96%). Fifty nine per cent of the owners answered that their cat is taken to the veterinary care service only when it shows a clinical sign and 65% of them feel anxious when they need to take their cats to the vet. Only 1% of the owner did not consider the cat as a family member. Concerning the veterinary care scenario, 40% of the owners answered that at least once, that their cat(s) had been handled inappropriately by veterinary service professionals, and they believed that low affinity with the species and excessive restraint were the main causes for this misconduct. Around 40% of the owners had already changed their veterinarian because of this inappropriate interaction/handling. Conclusion and relevance the data presented point to the importance of implementing and improving friendly and gentle care practices with cats and their owners.

**Key words:** care, cat owners, health, behavior, cat friendly practices.

## Perfil de 5.213 proprietários e percepções sobre cuidados com felinos e atendimento médico veterinário

**RESUMO:** O número de gatos vem crescendo nos lares brasileiros e estima-se que dentro de aproximadamente uma década ultrapasse o de cães. Esse aumento gera demanda de serviços veterinários que estejam aptos a receber apropriadamente felinos e seus donos. Os gatos são considerados animais muito reativos às adversidades, o que faz com que possam ser levados a um estado de estresse rapidamente. A má compreensão de como reagem ao medo e à dor dificulta o andamento das consultas e leva a subsequente falta de cuidados veterinários de rotina. Diante disso, o objetivo deste estudo foi conhecer o perfil de tutores, percepções sobre o comportamento felino e possíveis obstáculos enfrentados por eles no que diz respeito aos cuidados com a saúde dos pets. Os dados foram coletados a partir de questionário semiestruturado disponibilizado em plataforma online. Foram incluídos 5.213 participantes, dos quais: 93% eram mulheres, 52% eram solteiros e residiam em áreas urbanas (96%). Cinquenta e nove por cento dos proprietários responderam que seu gato só é conduzido para consulta quando apresenta algum sinal de doença e 65% deles ficam ansiosos quando precisam levar seus gatos ao veterinário. Em relação ao cenário do atendimento veterinário, 40% dos proprietários responderam que seus gatos já foram manipulados de maneira inadequada por profissionais do serviço sendo a baixa afinidade com a espécie e a contenção excessiva as principais condutas observadas. Cerca de 40% dos proprietários já trocaram de veterinário por conta dessas condutas. Os dados apresentados apontam para a importância de implementar e melhorar práticas de cuidados amigáveis e gentis com gatos e seus donos para que a saúde e bem estar desses animais sejam preservadas.

**Palavras-chave:** gatos, manejo cat friendly, donos de gatos, medicina de felinos, bem-estar animal.

## INTRODUCTION

The number of cats kept as pets is increasing worldwide (RODAN, 2015). In Brazil, according to the latest survey conducted by the Brazilian Association of Pet Products Industry – Abinpet (2018), the feline population was the one that grew most between the years 2013 and 2018 comparing to dogs, fish, birds, reptiles and small mammals. About 23.9 million cats were identified in the country (IPT, 2019).

Cats are considered to be the most popular pets in the United States and, despite that, the number

of feline consultations dropped 14% from 2001 to 2011 in that country. The visit to the veterinary clinic is considered a highly stressful event for many cats and their owners. A study by the pharmaceutical chemical industry Bayer found that one of the main reasons why customers do not take their pets to the vet is their reluctance to withstand the stress of the animal and oneself under that circumstance (VOLK et al., 2011, BURNS, 2013). Being so, owners also postpone prophylactic care and routine vaccinations, for example, to avoid such stress. OVERALL et al. (2005) state that most clients may not be able to judge

the veterinarian's knowledge of feline medicine, but they can recognize the professional's ability to handle the cat safely, respectfully and efficiently.

With the increasing number of cats integrated into homes, a gradual increase in the demand for veterinary services specialized in feline medicine is expected (ABINPET, 2018). For years, the development of a clear and trusting relationship between the veterinarian and their clients has been considered of great relevance so together they can achieve better results regarding the animal's health and well-being (GAZZANO et al., 2008).

It is essential that in addition to considering the specifics of felines in veterinary care, owner have positive and safe experiences, providing well-being to the client, patient and staff. For this reason, this study aimed to describe the profile of Brazilian cat owners connected to social media (including groups related to feline health and care content), their perceptions of responsible ownership and their experiences in the veterinary medical care environment.

## MATERIALS AND METHODS

The study was carried out through the application of a semi-structured online questionnaire, composed of questions concerning the individual's socioeconomic level, their perception of knowledge about health care and previous medical-veterinary care history inherent to the felines maintained as pets, configuring a qualitative and quantitative research. The questionnaire was made available digitally through the Cognito Forms platform (<https://www.cognitoforms.com/forms/>) from 04/01/20 to 07/01/20. The electronic address for accessing the questionnaire was posted on social media on pages and groups aimed at cats, with tips, health and handling using the snowball sampling method. This technique is a form of non-probabilistic sampling used in social surveys where the initial participants of a study indicate new participants who in turn indicate new participants and so on. The target audience were those responsible for domestic cats living in any state of Brazil, of legal age and who had at least one cat as a pet. All participants included in the study agreed to the informed consent form authorizing their participation in the research. The questionnaire was divided into two parts, the first one concerning socioeconomic data and general questions about the owner's perception of cat ownership and care. The second one concerned the veterinary medical care environment. The individuals who had no history of visits to the veterinarian with their pet cats ended their participation in the first stage. Participants who had

already taken their cat to the vet at least once were referred to the second stage. Participants who did not agree with the terms and those who sent incomplete questionnaires were excluded. The data obtained were tabulated in Microsoft Excel® 2010 spreadsheets and analyzed using descriptive statistics.

## RESULTS

In total 5,213 responses were included. Of the participants, 238 (4.6%) had never taken their cat(s) for veterinary care, and answered only the first part of the questionnaire. Most participants were from Southern Brazil (46%), followed by the Southeast (39%), Midwest (5%), Northeast (7%) and North (1%) regions from Brazil. Table 1 describes the participants' economic and social data. Most were women (93%), while 7% were men. Fifty two per cent of the owners were single, 34% were married, 6% were divorced and 8% declared another type of marital relationship. As for the environment, 97% of respondents were from urban areas and 3% were from rural areas, with the most declared type of property being houses (55%), followed by apartments (43%) and farms or other types of housing (2%).

Of the respondents, 44% were employed and 21% self-employed. The remaining participants were students (21%), unemployed (10%) and retired or pensioners (4%). Regarding education, 61% have completed higher education and 22% had incomplete higher education, making up 83% of the total participants. The remaining owners had completed high school (14%) and incomplete high school (2%) (Table 1). When asked how many hours did they spend away from home every day (Table 1), almost half (48%) reported staying out more than eight hours and 28% answered less than eight hours. The remaining participants stayed home all day (19%) or had other types of routine that were not described in the questionnaire (5%).

The number of people residing in the residence was, on average, 2.33 adults, 0.22 children, 0.16 adolescents (with a minimum of 1 and a maximum of 10 residents per household). As for the number of cats per household, in 33% of the responses, 1 cat was declared, followed by 2 cats (30%), 3 cats (14%), 4 cats (8%), 5 cats (4%) and over 10 cats (3%). Approximately 4% of the respondents had between 6 and 10 animals.

Almost all participants (99%) responded that they considered the cat to be a member of the family. Regarding if the cats were kept indoors or with outdoors access: 72% of the owners answered that their cats were kept exclusively indoors; while

Table 1 - Socioeconomic data of cat owners.

Topic	Alternative	Absolute frequency	Relative frequency (%)
Gender	Female	4867	93.3
	Male	335	6.4
	Other	12	0.2
Marital status	Not married	2733	52.4
	Married	1768	33.9
	Divorced	311	5.9
	Other	402	7.7
Occupation	Unemployed	509	9.7
	Employee	2304	44.1
	Self employed	1116	21.4
	Retired or pensioner	186	3.5
Housing	Student	1099	21
	Urban Area	5045	96.7
	Rural Area	169	3.2
	House	2893	55.4
	Apartment	2238	42.9
	Farm	56	1
Income	Other	27	0.5
	Up to \$ 400	917	17.5
	\$ 400 to \$ 800	1818	34.8
	\$ 800 to \$1,600	1403	26.9
	\$ 1,600 to \$2,400	562	10.7
	Over \$ 2,400	393	7.5
Schooling	Did not answer	121	2.3
	Complete higher education	3159	60.5
	Incomplete higher education	1169	22.4
	Complete high school	731	14
	Incomplete high school	83	1.6
	Complete middle school	35	0.6
	Incomplete middle school	25	0.4
	I never went to school	1	0.02
Time away from home	Did not answer	11	0.2
	I spend almost all day at home	988	18.9
	More than 8 hours	2476	47.4
	Less than 8 hours	1481	28.4
	Other	255	4.9
	Did not answer	14	0.2

in 17% of the responses the cats could occasionally go outside unsupervised, and 11% answered that the cats had free outdoor access. Seventy-one percent of the participants responded that they do not consider cats more strong than dogs, and that they do not think cats require less medical care. When comparing cat and dog ownership, almost half (48%) considered

that having pet cats was easier than having dogs; 38% answered that cat ownership was only in part easier than owning dogs; and only 14% considered owning cats more difficult than dogs.

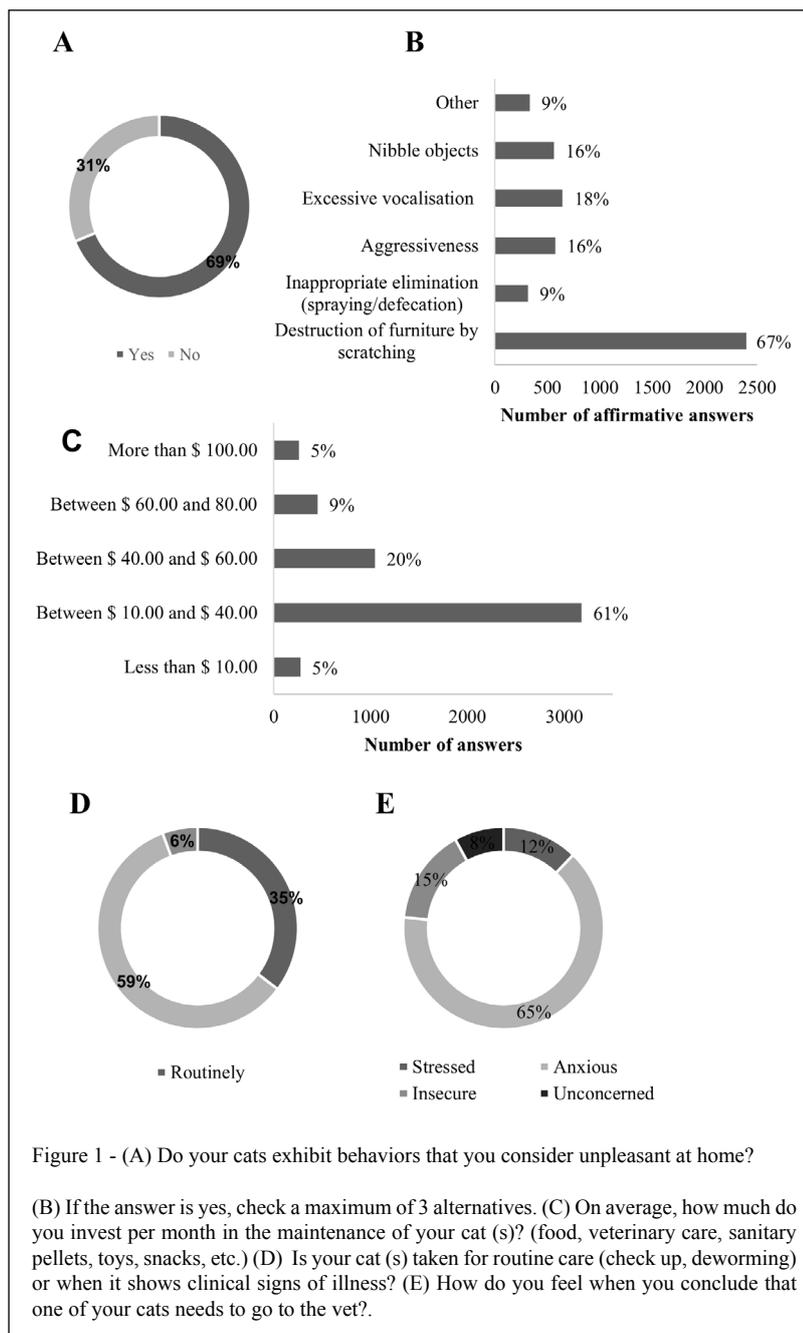
When asked about unpleasant behaviors, 1,627 (31%) of respondents did not have any complaints, 2,398 (46%) of the participants reported

furniture scratching (Figure 1A); 318 (6%) reported defecation or spray urine in inappropriate locations, 578 (11%) reported aggressiveness, 646 (12%) reported excessive vocalization, 565 (10%) reported object nibbling habit and 334 (6%) reported other behaviors (Figure 1B).

Regarding veterinary care, 76% of the respondents never attended a specific clinic for felines, however, 80% reported that they would certainly

seek this kind of service if available in their city, while 17% answered that they might seek this kind of service. When asked about having heard of “cat friendly” practices, just over half (54%) replied that they had never heard about the subject, 9% had partial information about it, and the remaining 37% replied that they had had some contact with such practices.

Regarding the monthly expenses with cat care (food, leisure, health) 260 (5%) of the participants



reported spending more than US\$ 100 per month with their cat, 3,180 (61%) reported spending between US\$ 10 and US\$ 40, 1,045 (20%) reported spending between US\$ 40 and US\$ 60, 452 (9%) reported spending between US\$ 60 and US\$ 80 and 277 (5%) reported spending less than US\$10 (Figure 1C).

Fifty-nine percent of the participants stated that they take the cat to the veterinarian only when it shows a clinical sign; 35% reported taking the cat routinely and 6% did not choose any of the previous alternatives. (Figure 1D). When asked about their feelings when they realize that one of the cats needs to be taken to the vet (Figure 1E), the owners responded that they feel anxious (65%), insecure (15%) and stressed (12%), with only 8% of the guardians reporting not feeling concerned about the event.

Regarding the veterinary care scenario, 60% of the respondents revealed that they never judged the way any of their cats were handled during care as inappropriate (Figure 2A). Forty per cent of the owners had already felt bothered with veterinary care, and the main reason for this was reported as rough handling and the low affinity of the veterinarian with the feline species (Figure 2B). Sixty per cent of the owners pointed out that they never changed veterinarians due to inappropriate interaction of the vet with their pets during care (Figure 2C). However, those who already had some type of problem and chose to seek another professional, pointed out as the causes for this decision being professional insecurity (18%), harshness (9%) and lack of patience (7%), followed by other causes (7%) (Figure 2D).

When asked if any of their cats had already bitten and / or scratched any member of the veterinary staff during a consultation, 77% answered no and 23% answered yes (Figure 2E). The answer was very similar when the question was whether any of the cats had already bitten and / or scratched the owner during veterinary care (23% yes; 77% no – Figure 2F). When asked if the veterinarian had to interrupt the evaluation of any of their cats due to the animal showing aggressive behavior (Figure 2G), 85% indicated not. Forty seven per cent of owners had already faced some difficulty to accommodate any of their cats inside the transport crate (Figure 2H), and 10% had already given up taking any of their cats to the vet because they were unable to transport them to the clinic / hospital (Figure 2I).

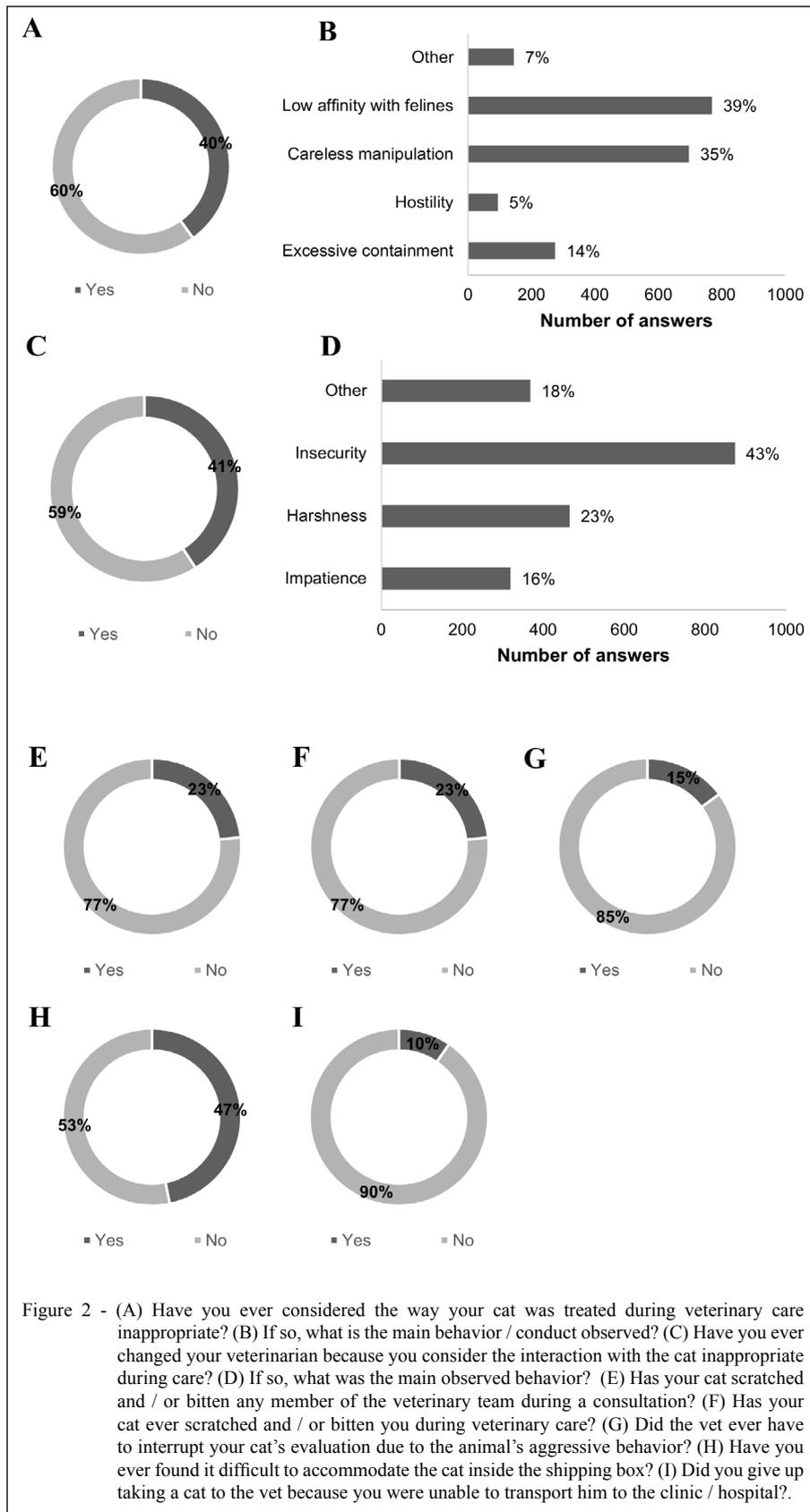
## DISCUSSION

To our knowledge, this is the first national survey to collect detailed information on visits to a

veterinarian and cat ownership, amongst pet owners in Brazil. The average profile of the cat owners outlined in this study was that of women, with a mean age of 33 years, single, social class B, living in urban centers, most of them in households, with complete higher education, employed or self-employed (Table 1). They share a home with another adult and are the guardians of one or two cats in general. Data on the owners of Brazilian cats is scarce. According to survey by the Brazilian Institute of Public Opinion and Statistics (IBOPE, 2015) in conjunction with the Waltham Institute (2015), in which 300 individuals over 25 years old were interviewed, the profile of those responsible for cats was that 61% were women, single, on average 40 years old, 62% living at home and only 11% living alone; data similar to this research. The prevalence of women is also observed in studies from other countries (BIR et al., 2020, GATES et al., 2019).

According to a study by ADAMELLI et al. (2005), women, in general, have more intense connections with their pets, which may be related to greater female participation in this matter. Furthermore, as a result of the legacy of the patriarchal model from the colonial period, the female figure is still largely attributed to the care of the home and family in our society (FOLLADOR, 2009). As the questionnaire was widely disseminated in the sessions that refer to animal care, it is natural that women are more present in this environment. Over-education is common in online surveys (SZOLNOKI & HOFFMANN, 2013). Women and people with a high educational level are over-represented in our sample. This over-representation of women in our study, show that our results might be less applicable to male cat owners.

In the survey conducted by IBOPE (2015), cat owners pointed out as positive characteristics in the creation of the species, independence, hygiene, less demand for attention and ease of having a cat when compared to dogs. With the largest number of people living alone today, and in smaller spaces, it is common to search for pets whose daily lives are simpler, or which at least require less space (ABINPET, 2018). The lifestyle combined with the mistaken perception of the species' independence means that many felines are left alone many hours a day (ERIKSSON et al., 2017). In the present study, most owners did not consider that cats are more resistant than dogs, requiring less care. However, they reported that raising cats was easier than raising dogs. It is noteworthy that, in this study, data on the permanence of owners away from home may have been influenced by the period of social distance caused by the COVID-19 pandemic.



As reinforced in this study, many pet owners express strong emotional ties with their animals (HALL et al., 2004), often considering them as part of the family, offering high levels of affection and comfort, similar to those offered to family members (DONOHUE, 2005; ZILCHAMANO et al., 2011). To promote this basic care and entertainment, the monthly expenditure indicated by the guardians (who have predominantly 1 to 2 cats), ranged from \$ 10 to \$ 40. New Zealand researchers found that despite pet owners spending considerable amounts of money on their pets every year, some of them may be underutilizing veterinary services (GATES et al., 2019). We can assume that something similar happens in the population of this study, as the vast majority reported that they only go to the veterinarian when they observe any clinical sign of illness. The biggest expenses can be allocated to food, toys and utensils. It is worth mentioning that the audience for this study is people who show interest in cat-related content. Therefore, there is a tendency for a greater emotional bond and zeal between them and their cats, a reality that should not be extrapolated to owners in general.

In contrast to this scenario, behaviors considered undesirable can seriously damage the human-animal bond and lead to the renunciation, abandonment or euthanasia of these pets (HORWITZ et al., 2009). Some habits, such as scratching or jumping on furniture, chewing plants, vocalizing, night activities and seeking attention, are considered normal for the species, but can be interpreted as problematic by the owners (HORWITZ et al., 2009; RODAN, 2016; BRADSHAW, 2018 ). Whatever the source, prevention and information about the animal's normal behavior and behavioral development are essential for tutors to develop realistic expectations and promote healthy environments for pets (GAZZANO et al., 2008).

The veterinarian who is dedicated to the study of feline medicine has a greater knowledge of the species' ethology, its peculiarities and the way they react to different stimuli, and can effectively offer instructions on how to prevent, manage or recognize the behavior of these animals (SEKSEL, 2009; RODAN et al., 2011, GAZZANO, 2015). Even among this group of highly educated participants, users of networks that disseminate information about cats, knowledge of friendly practices and cat caring is not extensive and attendance at veterinary clinics exclusively for cats is low. In addition, most take their cats to the veterinarian only when they show clinical signs, making it difficult to diagnose early

and prevent diseases. We can assume that this data is related to the fact that the vast majority of tutors also point out that they feel anxious, insecure or stressed to go to the vet. There is also a wide highlight of the difficulty in accommodating the cat in transport crate.

Cats are less likely to be examined by veterinarians than dogs due to a lack of understanding of how they react to fear and pain, which creates difficulties in the course of care (LUE et al., 2008). Owners' 'perception of their cats' stress level during veterinary consultations is a recognized barrier for felines to receive veterinary care, especially preventive care. In addition to negatively affecting the health of these animals, the reduced number of consultations affects the financial return of veterinary clinics (VOLK et al., 2011).

Corroborating this data, most of the individuals in this study have already gone through an unpleasant situation in the consultation and even looked for another professional because they deemed the interaction with the cat inappropriate during care. According to RODAN et al. (2015a), having technical skills is important, but not enough. Owners tend to be more concerned with how much the vet cares (both with them and with their animal) than with his theoretical knowledge. In addition, there are those who believe that the lack of veterinary care is less harmful to the health of the cat than the traumatic experiences lived during consultations.

A stressed or scared animal can become aggressive and make careful physical assessment unfeasible, and may even cause injury to a staff member and / or owner, as pointed out in this study. Aggressiveness can be associated with the lack of socialization and fear, and when the animal is not able to face directly the stimulus or the cause of stress, the aggression can be directed to other targets (OVERALL et al., 2005). One of the reasons several authors have proposed guidelines to friendly handling techniques in cats is to minimize stress in these events (RODAN et al., 2011; VOGT, 2010; HERRON, 2014). In addition to the immediate changes in stress and impairment in medical evaluation, each visit to the veterinarian associated with anxiety can condition the cat and its guardian to expect that future visits will be similar (RODAN, 2010).

To achieve the ideal level of health care, the veterinarian needs to advise owners on the benefits of preventive care, as this species tends to hide pain and disease as a protective mechanism (derived from avoiding predation in the wild) (RODAN, 2010). Guardians tend to seek veterinary care more often when they understand and value

its importance (LUE et al., 2008, RODAN, 2015). Despite the growing evolution of feline medicine and techniques increasingly friendly to cats, the owners and their animals still face difficulties when visiting the vet. This shows that the little explored universe of cat-tutor-veterinarian interactions needs to be better studied, since the continuing education of both owners and veterinarians is a fundamental tool to ensure feline health and life quality. Researchers from other countries have also paid attention to the importance of this issue (BIR et al., 2020).

Some limitations need to be considered. The sample for this study was biased in favor of women of high socioeconomic status, as a result of research recruitment strategies. A more diverse sample could reveal results that were not evident in this sample. Future studies should explore these research questions in a representative sample of all pet cat owners in Brazil. Comparing the findings presented in this article with a sample that includes better representation of minority groups, other genders, and those with lower incomes could reveal how these issues affect individuals with fewer resources, such as lack of access to pet services and veterinary care.

## CONCLUSION

The data presented are unprecedented and point to the importance of implementing and improving friendly and gentle care practices with cats and their owners. We identified a great need for awareness of owners in relation to the proper handling of cats in the veterinary clinic and the importance of routine consultations for maintaining the health of their animals. Once this awareness is increased, specialized care can be fostered and the owners' demand for exclusive care clinics and/or cat-friendly practices can be reinforced. More studies are needed considering the most representative sample, without the identified biases.

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## DECLARATION OF CONFLICT OF INTEREST

The author declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

## AUTHORS' CONTRIBUTIONS

All authors critically reviewed the manuscript and prepared the final version.

## BIOETHICS AND BIOSSECURITY COMMITTEE APPROVAL

This research was approved by the Ethics Committee for Research with Human Beings of the Universidade Federal de Santa Maria (UFSM), under protocol 29698520.4. 0000.5346.

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