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A Survey Study on Self-Evaluations of Small Pet Practitioners about Exotic Pets in Istanbul in 2016

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Abstract

Exotic pet animal ownership is on the rise all over the world. Regardless of being companion animals which are important subjects in veterinary medicine, they also play a role in the transmission of diseases to other animals and human beings. Therefore, veterinarians are expected to have the knowledge and good practice in exotic pet medicine. This survey was performed among small animal practitioners with the aim of identifying their self-evaluation of competency and knowledge about the exotic pet medicine in Istanbul. As a data collection tool, a three-part questionnaire developed by the researchers was used in the current study. The first part of the survey covered demographic variables of respondents; the second part consisted of 6 questions, which examine the self-evaluation of small animal practitioners on competency and knowledge about the exotic pet medicine practice. The third part consisted of 8 Likert type questions about the husbandry, transmission, prevention, diagnosis and therapy of the diseases for the four different exotic pets including fish, turtle, other reptiles and bird. The results showed that approximately 80% of the respondents consider that exotic pet disease is essential regarding veterinary medicine. Thirty-five percent of the veterinarian said that they were not sure about "what is an exotic pet disease" while, 53% of them responded that question, as they did not have any knowledge about the exotic pet diseases. For the 91.4% of the clinics investigated, the exotic animals as a patient were 1-10% or less than 1% of all the patients. It has shown that 42.4%, 32%, 16.9%, and 8.7% of the exotic pets' species examined were birds, turtles, the other reptiles, and 8.7% fish, respectively. Ninety percent of the veterinarians consider that they did not get enough education about the exotic pet animal practice during their undergraduate study at the Faculty of Veterinary Medicine, Istanbul. It has been determined that more than half of the participants (65%) were considered themselves as having adequate knowledge of the husbandry, transmission, prevention, diagnosis and therapy of the diseases of the birds. However, they did not have enough experience about turtle, other reptiles and fish. As a conclusion, the results indicated the importance of education, specialisation and practice on potential exotic pet species.

Keywords: Exotic pets, İstanbul, self-evaluation, survey, Veterinary Medicine

Introduction

Humans have been living with animals continually since ancient times; they domesticated them at first, benefited from some of their products, and took them home and bought them as friends (Öner and Şahin, 2009). The definition of exotic in "Merriam-Webster's Collegiate Dictionary" is as: introduced from another country, not native to the place where found; foreign, alien; and strikingly, excitingly or mysteriously different or unusual (Merriam-Webster, 2003). An exotic pet is a rare or unusual animal pet, or an animal kept within individual households, which is generally thought of as a wild species not typically held as a pet (Schuppli and Fraser, 2000). According to Mitchell and Tully (2009), the history of exotic pets has begun to keep and breed goldfishes as aesthetic purposes in China in Sung Dynasty (960-1279). The population of exotic pets

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is increasing worldwide. Members of this new pet group are birds, reptiles, fish, small mammals and rodents (such as rats, hamsters and ferrets) (Ebani and Fratini, 2005). Additionally, exotic animals were not only imported as pet animals but also were imported for zoos, scientific education and research and protection programs (Marano et al., 2007). Mayer and Martin (2005) indicated that exotic pets had been used for various scientific studies throughout more than 100 years.

Generally, exotic pets are imported from overseas countries. Moreover, many of them get acquired illnesses during long shipments (Marano et al., 2007). Veterinarians do not have sufficient knowledge about the disease, behaviour, natural history and physiology of these exotic species (Mayer and Martin, 2005). However, regardless of their keeping as companion animals, not only exotic pets are essential subjects in veterinary medicine, but also play a role in the transmission of diseases to other animals and human beings (Chomel et al., 2007). It is estimated that 75% of emerging infectious diseases occurring today are the zoonosis. Exotic pets or wildlife species carry most of this zoonosis. Veterinarians could be held legally responsible for the transmission of zoonosis to staff or clients (Souza, 2011). There are differences between pet animals such as cats, dogs and exotic pets (anatomical, physiological, etc.) and this can lead to differences in medicine. Thus occurs a new field of Veterinary Medicine (Öner and Şahin, 2009). On the other hand, working with exotic and wild animals is generally hazardous, and holding of exotic animals is a more challenging business than other pet and farm animals (Miller and Fowler, 2014).

A majority of the drugs should be administered parenteral or enteral to the exotic pet, are given empirically due to the lack of pharmacokinetic data. In this respect, it has been benefited from the field experience of the physicians, the dose rates used in other pet animals or the treatment forms created by trial and error. Drugs used in specific doses as a result of experimental studies and post-operative treatments cause the animals to get back to their normal health but are at risk for a variety of reasons, such as side effects, application revolutions and the need to use drugs in large volumes. Therefore, veterinarians are expected to have the knowledge and good practice in exotic pet medicine (Öner and Şahin, 2009).

In recent years, there is an interest and sensitivity on exotic pets. Day by day, more exotic pets are brought to the veterinary faculties and veterinary clinics for treatment. According to Fowler's wild animal medicine, there are 6.200 species of Anurans, ten large families of Caudate, 322 species of turtles and tortoise. With the addition of other Amphibian, reptiles, birds and mammalian species, exotic animal's medicine is a vast ocean. Therefore, it is either not easy to know or to educate the complete exotic animal medicine to students. However, in determined species, primary medicine and selected diseases are necessary to educate (Miller and Fowler, 2014). For further education and practice needs specialisation. Association of Exotic Mammal Veterinarians (AEMV) and the Association of Reptilian and Amphibian Veterinarians (ARAV) are founded to address those issues stated above and help improve the knowledge in the field of exotic animal practice (AEMV, 2000; ARAV, 1990).

The European College of Zoological Medicine (ECZM) was established to help further progress in research and practice to benefit the health and well-being of free-ranging and captive non-domesticated animals. The establishment organised summer courses, workshops and approved residency programs for veterinarians who need specialisation on exotic and zoo medicine area (ECZM, 1993). In Turkey, for the first time, Department of Wildlife and Ecology was launched in Afyon Kocatepe University, Faculty of Veterinary Medicine in Turkey in 2014. Then, Department of Wildlife Disease and Ecology was established in Kafkas University Faculty of Veterinary Medicine in 2015 and Istanbul University Faculty of Veterinary Medicine in 2018. In this context, The Chamber of Veterinary Surgeons, Istanbul was organised first time "Wild Animal Medicine and Exotic Congress in 2014 and "1st Exotic and Wildlife Medicine Workshop with International Participation" in 2017, in İstanbul.

This survey was performed among small animal practitioners with the aim of identifying their self-evaluation of competency and knowledge about the exotic pet medicine. Additionally, the influences of determined demographic characteristics were also investigated.

Materials and Methods

Questionnaire

A total of 174 small animal practitioners from different geographical and socioeconomic regions of Istanbul was used as the population pool of the questionnaire used in the current survey. The study was conducted in this city because of the density of the human population covered by the province of Istanbul (approximately 15 million), the animal population, and high-volume of the pet trade, having the biggest air border gates of Turkey, their proximity to the western land boundaries and being of major seasonal migration routes.

As a data collection tool, a three-part questionnaire developed by the researchers was used. The first part of the questionnaire covered demographic variables of respondents including gender, age, work experience, the potential of the exotic pet and the exotic pet species coming for the examination. Part two consisted of 6 questions, which examine the self-evaluation of small animal practitioners on competency and knowledge about the exotic pet medicine practice. Each question was assessed using a 5-point Likert scale (1=strongly disagree; 2=disagree; 3=neither agree nor disagree; 4=agree; 5=strongly agree). The third part consisted of 8 Likert type questions about the husbandry, transmission, prevention, diagnosis and therapy of the diseases for the four different exotic pets including fish, turtle, other reptiles and bird.

Statistical analysis

The demographic characteristics of small animal practitioners were presented with frequencies and percentages. To describe the responses to Likert-type questions, median, mean and standard deviation values for each item were calculated, as well as frequency and percentage values for each Likert item.

Non-parametric statistical tests were selected to determine the effects of demographic characteristics on responses to Likert type items. Mann-Whitney U test was used for demographic variables with two levels (i.e. gender), whereas Kruskal Wallis test was utilised when demographic characteristics had three or more levels (i.e. age, work experience, the potential of the exotic pet and the exotic pet species coming for the examination) (Özdamar, 2003).

Results

Of the veterinarians participating in the survey, 42% were female, 58% were male, and the average age was 35.7. The work experience level of the majority of clinician veterinarians was determined as 6-15 years (36.2%). When the exotic pet potential of the clinics evaluated, 48.3% is 1-10 percent of all of the patients, and 43.1% is 1 or less than 1 percent. It is examined that 42.4% of the exotic pets' species coming for the examination is the bird, 32% is the turtle, 16.9% is other reptiles and 8.7% is fish. The demographic information of respondents summarised in Table 1.

Table 1. Demographic information of respondents

Items	Frequency, n	Percentage, %
Gender		
Male	101	58
Female	73	42
Ages		
23-30 years old	53	30.5
31-40 years old	82	47.1
41-50 years old	33	18.9
51-69 years old	6	3.5
Work experience		
0-5 years	58	33.3
6-15 years	63	36.2
16-25 years	45	25.9
Higher than 26 years	8	4.6
Potential of the exotic pets		
Less than 1%	75	43.1
1-10%	84	48.3
11-50%	12	6.9
Higher than 51%	3	1.7
The exotic pet species coming for the examination		
Turtle (Chelonians)	128	32.0
Other reptiles	68	16.9
Fish	35	8.7
Bird	170	42.4

Approximately 80% of the respondents consider that exotic pet disease is essential regarding veterinary medicine. Thirty-five percent of the veterinarian said that they were not sure about "what are the exotic pet diseases" while, 53% of them responded that question, as they did not have any knowledge about the exotic pet diseases. Ninety % of the veterinarians consider that they did not get enough education on the exotic pets and diseases during their graduate study in Faculty of Veterinary Medicine. The rates of the veterinary that choose the answers to "disagree" to questions that investigated their self-evaluation of knowledge on transmission, control and prevention of exotic pet diseases, were considerably higher. The veterinarians considered that they did not have enough knowledge about the husbandry, transmission, prevention, diagnosis and therapy of the diseases of the exotic pets including turtle (Chelonians), other reptiles and fish. It has been determined that more than half of the participants (65%) be considered themselves as having adequate knowledge of the husbandry, transmission, prevention, diagnosis and therapy of the diseases of the birds. The descriptive statistics related to responses of respondents to questions summarised in Table 2.

The effects of demographic characteristics on averages of Likert-type responses concerning gender, work experience, the potential of the exotic pets and the exotic pet species were summarised in Table 3.

Discussion

Exotic pet medicine is one of the fastest growing disciplines in veterinary medicine worldwide. A perception that is widespread in the exotic pet medicine is the lack of clinical information for veterinarians. Donnelly (2004) elaborated on two critical points:

There are significant differences between the medical problems seen in domestic animals and those in laboratory animals.

There is an inconsistency between what is described in the current literature and what is seen in the clinical specimens of exotic domestic animals.

Mayer and Martin (2005) highlighted that although exotic animal medicine is an area of growth within veterinary medicine, there is nevertheless a general lack of training opportunities and pharmacological data concerning exotics and that a general absence of context-specific literature can be problematic. Also, they added that one of the most significant problems facing the exotic animal veterinarian is the use of drugs in species for which no pharmacological data are available.

Table 2. Descriptive statistics related to responses of respondents to questions

	Questions	Disagree strongly n (%)	Disagree n (%)	Undecided n (%)	Agree n (%)	Agree strongly n (%)	Mean Score (SD)	Median
	Q1- I consider that exotic pet disease is important in terms of veterinary medicine.	2 (1.1)	11 (6.3)	21 (12.1)	50 (28.7)	90 (51.7)	4.23 (0.97)	5
	Q2- I consider that I have enough knowledge about what are the exotic pet diseases	41 (23.6)	51 (29.3)	60 (34.5)	18 (10.3)	4 (2.3)	2.39 (1.02)	2
	Q3- I consider that I got enough courses about the exotic pets and diseases in my graduate Faculty of veterinary medicine	123 (70.7)	34 (19.5)	13 (7.5)	1 (0.6)	3 (1.7)	1.43 (0.79)	1
	Q4- I consider that I have enough knowledge about transmission routes of the exotic pet diseases from animal to human beings	39 (22.4)	56 (32.2)	44 (25.3)	26 (14.9)	9 (5.2)	2.48 (1.14)	2
	Q5- I consider that I have enough knowledge about prevention of myself in terms of the exotic pets' diseases	34 (19.5)	63 (36.2)	35 (20.1)	29 (16.7)	13 (7.5)	2.56 (1.19)	2
	Q6- I consider that I have enough knowledge about prevention of animals in terms of the exotic pets' diseases	42 (24.1)	57 (32.8)	39 (22.4)	27 (15.5)	9 (5.2)	2.44 (1.16)	2
Turtle	Q7- I have enough knowledge about husbandry.	34 (19.5)	49 (28.2)	43 (24.7)	39 (22.4)	9 (5.2)	2.65 (1.17)	3
	Q8- I have enough knowledge about feeding.	31 (17.8)	44 (25.3)	43 (24.7)	46 (26.4)	10 (5.7)	2.77 (1.18)	3
	Q9- I have enough knowledge about transmission r outes to animal.	32 (18.4)	57 (32.8)	44 (25.3)	34 (19.5)	7 (4)	2.58 (1.11)	2
	Q10- I consider that I have enough knowledge about prevention of animals in terms of diseases.	29 (16.7)	49 (28.2)	52 (29.9)	37 (21.3)	7 (4)	2.67 (1.10)	3
	Q11- I have enough knowledge about the contamination routes of infected animals (from animal to environment).	26 (14.9)	55 (31.6)	43 (24.7)	43 (24.7)	7 (4)	2.71 (1.11)	3
	Q12- I consider that I have enough knowledge about the clinical diagnosis of diseases.	34 (19.5)	47 (27)	58 (33.3)	30 (17.2)	5 (2.9)	2.56 (1.07)	3
	Q13- I know which samples and at which conditions should be sent to the laboratory in suspected cases<	47 (27)	44 (25.3)	35 (20.1)	36 (20.7)	12 (6.9)	2.55 (1.27)	2
	Q14- I consider that I have enough knowledge about treatment.	28 (16.1)	47 (27)	54 (31)	39 (22.4)	6 (3.4)	2.70 (1.09)	3
Reptile	Q15- I have enough knowledge about husbandry.	63 (36.2)	54 (31)	29 (16.7)	23 (13.2)	5 (2.9)	2.15 (1.13)	2
	Q16- I have enough knowledge about feeding.	59 (33.9)	51 (29.3)	36 (20.7)	22 (12.6)	6 (3.4)	2.22 (1.14)	2
	Q17- I have enough knowledge about transmission routes to animal.	61 (35.1)	58 (33.3)	30 (17.2)	17 (9.8)	8 (4.6)	2.15 (1.14)	2
	Q18- I consider that I have enough knowledge about prevention of animals in terms of diseases.	58 (33.3)	49 (28.2)	39 (22.4)	21 (12.1)	7 (4)	2.25 (1.16)	2
	Q19- I have enough knowledge about the contamination routes of infected animals (from animal to environment).	56 (32.2)	56 (32.2)	36 (20.7)	20 (11.5)	6 (3.4)	2.21 (1.12)	2
	Q20- I consider that I have enough knowledge about the clinical diagnosis of diseases.	62 (35.6)	52 (29.9)	35 (20.1)	20 (11.5)	5 (2.9)	2.16 (1.12)	2
	Q21- I know which samples and at which conditions should be sent to the laboratory in suspected cases	67 (38.5)	48 (27.6)	26 (14.9)	23 (13.2)	10 (5.7)	2.20 (1.24)	2
	Q22- I consider that I have enough knowledge about treatment.	63 (36.2)	46 (26.4)	32 (18.4)	28 (16.1)	5 (2.9)	2.22 (1.18)	2
Fish	Q23- I have enough knowledge about husbandry.	48 (27.6)	55 (31.6)	37 (21.3)	26 (14.9)	8 (4.6)	2.37 (1.16)	2
	Q24- I have enough knowledge about feeding.	45 (25.9)	42 (24.1)	45 (25.9)	32 (18.4)	10 (5.7)	2.54 (1.21)	2.5
	Q25- I have enough knowledge about transmission routes to animal.	45 (25.9)	50 (28.7)	44 (25.3)	26 (14.9)	9 (5.2)	2.44 (1.17)	2

Table 2. Descriptive statistics related to responses of respondents to questions (continued)

	Questions	Disagree strongly n (%)	Disagree n (%)	Undecided n (%)	Agree n (%)	Agree strongly n (%)	Mean Score (SD)	Median
	Q26- I consider that I have enough knowledge about prevention of animals in terms of diseases.	47 (27)	53 (30.5)	44 (25.3)	22 (12.6)	8 (4.6)	2.37 (1.14)	2
	Q27- I have enough knowledge about the contamination r outes of infected animals (from animal to environment).	44 (25.3)	57 (32.8)	41 (23.6)	23 (13.2)	9 (5.2)	2.40 (1.15)	2
	Q28- I consider that I have enough knowledge about the clinical diagnosis of diseases.	53 (30.5)	61 (35.1)	35 (20.1)	18 (10.3)	7 (4)	2.22 (1.11)	2
	Q29- I know which samples and at which conditions should be sent to the laboratory in suspected cases	67 (38.5)	56 (32.2)	23 (13.2)	19 (10.9)	9 (5.2)	2.12 (1.18)	2
	Q30- I consider that I have enough knowledge about treatment.	52 (29.9)	62 (35.6)	36 (20.7)	16 (9.2)	8 (4.6)	2.22 (1.11)	2
Bird	Q31- I have enough knowledge about husbandry.	12 (6.9)	18 (10.3)	52 (29.9)	69 (39.7)	23 (13.2)	3.41 (1.06)	4
	Q32- I have enough knowledge about feeding.	9 (5.2)	12 (6.9)	44 (25.3)	79 (45.4)	30 (17.2)	3.62 (1.01)	4
	Q33- I have enough knowledge about transmission routes to animal.	9 (5.2)	15 (8.6)	50 (28.7)	80 (46)	20 (11.5)	3.5 (0.98)	4
	Q34- I consider that I have enough knowledge about prevention of animals in terms of diseases.	12 (6.9)	16 (9.2)	51 (29.3)	71 (40.8)	24 (13.8)	3.45 (1.06)	4
	Q35- I have enough knowledge about the contamination routes of infected animals (from animal to environment).	8 (4.6)	16 (9.2)	48 (27.6)	74 (42.5)	28 (16.1)	3.56 (1.01)	4
	Q36- I consider that I have enough knowledge about the clinical diagnosis of diseases.	12 (6.9)	17 (9.8)	57 (32.8)	71 (40.8)	17 (9.8)	3.36 (1.02)	4
	Q37- I know which samples and at which conditions should be sent to the laboratory in suspected cases	24 (13.8)	32 (18.4)	44 (25.3)	53 (30.5)	21 (12.1)	3.08 (1.23)	3
	Q38- I consider that I have enough knowledge about treatment.	12 (6.9)	12 (6.9)	57 (32.8)	74 (42.5)	19 (10.9)	3.43 (1.01)	4

A survey related to exotic pet ownership and care was conducted by the UK-based Royal Society for the Prevention of Cruelty to Animals (RSPCA) with 190 veterinarians, and a report was prepared. In the report, it has been criticised for exotic pet owners and pet shops, and it has been determined that disregarding animal breeding or abandoning animals is not a serious risk factor. However, it has been reported that animal owners do not have sufficient experience in animal welfare, nutrition and care, which is a problem for animal welfare. As a result of the study, it was determined that less than half of the veterinarians treat exotic, 33% referred the cases to other veterinarians, and 20% neither treated nor referred. It was pointed out that there is not enough number of veterinarians trained for the treatment of exotic animals (RSPCA, 2003).

In this study, it has been determined that less than half of the veterinarians are not sure about "what is the exotic pet diseases" while 53% of them responded to that question with a score demonstrating a complete lack of knowledge regarding exotic pet diseases. Ninety percent of the practitioners consider that they did not get enough courses about exotic pets and their diseases before graduating from the veterinary faculty.

Similar to the other studies (Mayer and Martin, 2005; RSPCA, 2003), in this study, it has been shown that the veterinarians did not have enough knowledge about the husbandry, transmission, prevention, diagnosis, and therapy of the diseases of the exotic pets including the turtle, other reptiles and fish. It has been determined that more than half of the participants have adequate knowledge about the husbandry, transmission, prevention, diagnosis, and therapy of the diseases of the birds. All of the veterinarians who answered the questionnaire took "poultry diseases" lessons which were the transmission, prevention, diagnosis, and therapy of the avian diseases had been taught, that is why awareness of exotic bird diseases was found higher than another type of the exotic pet diseases.

Vander Veen and Schulte (2005) sent an informal questionnaire to 11 accredited American Veterinary Medical Association (AVMA) veterinary technology schools in the United States. They detected that 7 out of 11 schools offer exotic medicine courses in addition to laboratory animal courses and three schools stated that they were looking into courses in exotic pet medicine (including husbandry, nutritional information and common diseases associated with specific exotic species). In conclusion, they pointed out that although some faculty or

Table 3. The effects of demographic characteristics on averages of Likert-type responses concerning gender, work experience, potential of the exotic pets and the exotic pet species

			Turtle			Reptile			Fish			Bird	
Item	**Subgroup**	**Median**	**MS (SD)**	**p**	**Median**	**MS (SD)**	**p**	**Median**	**MS (SD)**	**p**	**Median**	**MS (SD)**	**p**
Gender	Male	20	20.73 (0.78)	0.295	16	16.78 (0.82)	0.116	18	19.43 (0.87)	0.210	28	26.76 (0.79)	0.211
	Female	23	21.89 (0.84)		16	18.72 (0.95)		16	17.71 (0.88)		30	28.41 (0.79)	
Work Experience	0-5 years	20.5	20.98 (0.99)	0.946	16	16.22 (0.98)	0.352	18	19.15 (1.07)	0.585	29	27.98 (0.98)	0.756
	6-15 years	22	20.98 (0.97)		17	18.52 (1.10)		16	18.76 (1.07)		30	27.41 (0.88)	
	16-25 years	21	21.33 (1.06)		16	17.2 (1.13)		16	17.55 (1.21)		26	26.46 (1.19)	
	Higher than 26 years	19.5	24.12 (3.78)		21	22.5 (4.23)		20.5	21.62 (3.23)		27	29.5 (3.34)	
Potential of the exotic pets	Less than 1 %	16	17.52 [c] (0.8)	<0.001	11	13.38 [c] (0.77)	<0.001	16	17.64 (0.91)	0.300	26	25.13 [c] (0.9)	<0.001
	1-10 %	24	22.89 [b] (0.69)		18	19.40 [b] (0.75)		18	19.04 (0.86)		30	28.72 [b] (0.73)	
	Higher than 11 %	31	30.33 [a] (1.83)		32	28.53 [a] (2.43)		19	22.2 (2.98)		32	31.93 [a] (1.86)	
Turtle examination	The practitioners who do not tread	16.5	17.08 (0.91)	<0.001	12.5	13.91 (0.92)	0.001	16	17.30 (1.05)	0.247	25	25.02 (1.09)	0.006
	The practitioners who tread	24	22.70 (0.67)		17	18.92 (0.75)		18	19.21 (0.76)		30	28.32 (0.65)	
Reptile examination	The practitioners who do not tread	19	19.74 (0.72)	0.003	15.5	14.89 (0.66)	<0.001	16.5	18.34 (0.78)	0.509	27.5	26.69 (0.71)	0.038
	The practitioners who tread	24	23.51 (0.89)		20.5	21.80 (1.04)		18.5	19.27 (1.05)		31	28.63 (0.92)	
Fish examination	The practitioners who do not tread	21	20.97 (0.65)	0.499	16	17.11 (0.69)	0.110	16	17.56 (0.65)	0.002	28	27.38 (0.61)	0.485
	The practitioners who tread	19	22.17 (1.29)		17	19.51 (1.4)		24	23.25 (1.56)		31	27.71 (1.43)	
Bird examination	The practitioners who do not tread	22	21 (5.91)	0.968	16.5	18.25 (5.03)	0.968	10	17 (7.72)	0.324	25	24.25 (2.68)	0.270
	The practitioners who tread	21	21.22 (0.58)		16	17.58 (0.63)		18	18.75 (0.62)		29	27.52 (0.58)	

[#]Mann Whitney U test for two subgroups and Kruskal-Wallis test for more than two subgroups were used for statistical comparisons.
[a,b,c] Differences between groups carrying different letters in the same column are significant ($p<0.05$).

staffs have minimal training in avian and pocket pet medicine, there are no specialist trained personnel in all types of exotic medicine.

The Veterinary Faculties in Turkey have not provided adequate information on exotic pet diseases so far. Also, most of the faculties have changed their curriculum due to the growing interest in exotic pets and the exotic pet diseases course started to be taught as mandatory. In İstanbul University-Cerrahpaşa, Faculty of Veterinary Medicine, there has been an exotic pet track, which is comprised of three years of track based elective lessons. Moreover, it has been aimed to provide in-depth knowledge of topics such as mammals, fish, wildlife, reptiles and birds.

In this study, it was observed that there was no statistical difference for the competency and knowledge about the exotic pet species between male and female when gender. The potential of the exotic pets had a significant influence on all of the questions except the questions about the fish breeding and treatment, while the effect of work experience was not significant. One explanation could be that practitioners, in general, do not

handle the fish individually because they treat the fish through water of the aquarium. For the other species, they need to handle the patients individually.

There was no statistically significance between accepting and treating exotic pet species and work experience. When the potential of the exotic pets is evaluated according to animal species, it is found that knowledge is increasing in parallel significantly.

The threshold rate of exotic pets among other species is found at 10%. It is found that the practitioners who treat turtle and other reptiles evaluated their selves as more informed than other practitioners for all other exotic species. The practitioners, who treat fish declared themselves more informed about fish care and treatment than others who do not significantly. The possible explanation for this specific result could be the influence of work experience. Furthermore, the practitioners could improve their ability according to the potential of species. Vice versa, the patients' owners may choose the practitioner who is good at pet species.

Conclusion

Shortly, because of the significant increase in the population of exotic pets, it is necessary to increase the knowledge of persons in the field and organisations such as veterinarians, feed companies, pharmaceutical industry and pet products sector to address issues in the practice. Apart from the mission that incumbent on the universities, the chamber of veterinary surgeons and the associations also have great missions. Our results indicated the importance of education, specialisation and practice on potential exotic pet species. Besides, the veterinary faculties in Turkey should introduce exotic pet medicine to their syllabus. Seminars and workshops for veterinarians who lack the knowledge on exotic pets, should be continued.

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