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CONSUMERS' PERCEPTIONS OF HEMP PRODUCTS FOR ANIMALS

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ABBREVIATION
CBD — cannabidiol
CBDA — cannabidiolic acid
THC — delta-9 tetrahydrocannabinol
THCA — tetrahydrocannabinolic acid

Abstract

This study was designed to determine which hemp products pet owners are purchasing, reasons for their purchases, and the perceived value of these products on pets' health. An anonymous online survey was given to pet owners who buy products from an online hemp company. Total responses were 632, of which 58.8% indicated they currently use a hemp product for their dog. Most dog owners (77.6%) indicated they use the product for an illness or condition diagnosed by a veterinarian, with the most common conditions including seizures, cancer, anxiety and arthritis. Fewer participants indicated they currently use hemp products for their cat (11.93%), with 81.8% indicating they use the product for a veterinarian-diagnosed illness or condition, most commonly cancer, anxiety and arthritis. The results of this study provide support for the growing number of anecdotal stories and offer guidance to researchers seeking to perform clinical studies on hemp in terms of its putative effectiveness and possible adverse outcomes. The information from this survey can serve as the basis for controlled clinical trials in areas including pain management, behavioral interventions for sleep disorders and anxiety for dogs, and pain management, inflammation reduction, and improvement in sleep patterns for cats.

Introduction

The term "cannabis" refers to plants belonging to the genus Cannabis as well as those products designed for therapeutic applications (1). Cannabinoids can be administered in a variety of methods including orally, sublingually, or topically and either extracted naturally from the plant or manufactured synthetically (2).

Both hemp and marijuana originate from the *Cannabis sativa* plant. As such, both contain an array of plant-based chemicals called "cannabinoids," including the 2 main cannabinoids, tetrahydrocannabinolic acid (THCA) and cannabidiolic acid (CBDA). THCA, when dried or heated, converts to the psychoactive cannabinoid, delta-9 tetrahydrocannabinol (THC). Similarly, decarboxylation of CBDA yields cannabidiol (CBD). The main differences between hemp and marijuana are the ratio of THC to CBD, the amount of fiber in the stalks, and the production of seeds for oil (3). By definition, "industrial hemp," the hemp of commerce which can be used for medicinal purposes, food, or fiber content, contains high levels of CBD and less than 0.3% THC on a dry matter basis. By comparison, tests of some modern strains of marijuana reveal levels of THC greater than 20% and much

lower levels of CBD (4). While many people differentiate THC as "psychoactive" and CBD as "non-psychoactive," CBD does affect the nervous system; however, it does not cause the typical "high" associated with THC (5).

Some countries have legalized medicinal-grade cannabis. In the United States, 23 states and Washington, DC have introduced laws to permit the medical use of cannabis (6). A recent meta-analysis that included 79 randomized human clinical trials (6462 participants) found moderate-quality evidence to support the use of cannabinoids for the treatment of chronic pain and spasticity; and low-quality evidence suggesting that cannabinoids are associated with improvements in nausea and vomiting due to chemotherapy, weight gain in HIV, sleep disorders, and Tourette syndrome (1). When assessing adverse effects, cannabinoids were associated with an increased risk of short-term adverse effects including asthenia, balance problems, confusion, dizziness, disorientation, diarrhea, euphoria, drowsiness, dry mouth, fatigue, hallucination, nausea, somnolence, and vomiting (1, 7). Additionally, The National Institutes of Health, as of 2015, has updated its website (http://www.drugabuse.gov/publications/drugfacts/marijuana-medicine) to include information about the positive effects of cannabis on cancer, reporting, among other benefits, that it has been found to kill cancer cells without harming healthy cells (7).

In the United States, cannabis is a controlled substance and has been classified as a Schedule I agent (a drug with increased potential for abuse and no known medical use) by federal law. This makes the use, sale, and possession of cannabis (marijuana) illegal. Its status as a Schedule 1 drug has imposed strict limitations on clinical research, severely hampering the ability of clinicians to inform patients and clients about its benefits and risks from an evidence-informed perspective. This has resulted in patients having to adopt a trial-and-error method to determine which, if any, cannabinoids can help alleviate their symptoms or benefit their conditions. It is for these reasons that numerous physician and health care organizations, including the American Medical Association, American Public Health Association, and National Association for Public Health Policy, are urging the federal government to reschedule marijuana, thereby easing research restrictions, to permit more cannabinoid-based research (8, 9).

In addition to a lack of research, the field also suffers from a lack of oversight and control. For both medical and recreational use, a "buyer beware market" currently exists for cannabis products. As the use of cannabis has expanded, a variety of edible products for oral consumption has been developed with current estimates noting that 16%–26% of patients using medical cannabis consume edible products (10, 11). Even though oral consumption eliminates the harmful by-products of smoking, lack of adequate control over dose titration can result in overdosing or underdosing, highlighting the importance of accurate product labeling (12).

Independent analyses have found that medicinal marijuana food products designated for human consumption, such as candies, brownies and teas, often are not labeled correctly. One study, for example, evaluated the contents of 75 products from 47 different brands purchased at marijuana dispensaries in San Francisco, Los Angeles, and Seattle, for their content of THC and cannabinoids. Their analysis uncovered widespread discrepancy between the actual amount of THC and cannabinoids from what was printed on the products' labels. Among the products analyzed, only 17% were accurately labeled; 23% of the products contained more of these compounds than listed; and 60% contained less than stated (12).

A growing number of states has gone beyond legalizing medical cannabis and made recreational cannabis legal as well. Colorado, Washington, Oregon, Alaska, and the District of Columbia all have legalized medical cannabis; and another 11 states, all of which have decriminalized possession of small amounts of marijuana, are expected to approve similar ballot initiatives between now and mid-November of 2016 (13). Perhaps tellingly, the market for legal cannabis has been identified as one of the fastest-growing industries in the United States, with a market growth of 74% in 2014, to $2.7 billion, up from $1.5 billion, in 2013 (14).

Given the expanding interest in both medical and recreational cannabis, it is perhaps unsurprising that this interest has expanded to include consideration of its potential benefits for companion animals (15). Biscuits, edibles, and capsules containing non-psychoactive cannabinoid compounds (e.g., CBD) have become available and are being marketed to pet owners with several companies in California, Oregon, and Washington rising to fill this need (16–19). Anecdotal reports from pet owners indicate that some find cannabis products helpful for pain, arthritis, seizures, anxiety, and inappetence in both dogs and cats.

Another study summarized by the AVMA reported that pet owners are using cannabis to treat behavior-based disorders such as separation anxiety and noise phobia, in addition to problems affecting the body and mind such as irritable bowel syndrome, and management of pain, nausea, and seizures (20). Many caregivers report positive outcomes. Consequently, interest in cannabis as a therapeutic agent for animals is spreading, and veterinarians are fielding more requests from their clients about whether cannabis might help their pets (8, 21).

However, just as in human medicine, there is little research-based information available to provide analysis and guidance about the use of medical cannabis for animals. Restrictions on cannabis research for veterinary patients have, until recently, imposed nearly insurmountable barriers on clinical investigations of the medical applications of hemp and medical marijuana. Lacking rigorous scientific evidence, veterinarians cannot determine safe dosages and THC/CBD ratios of medical marijuana for dogs, cats, and other animals. As is true for physicians, veterinarians are left relying on anecdotal reports, trial and error reports from clients, and companies' claims (22).

The few studies that have been published on cannabis in non-humans have mainly focused on toxicity (23, 24). Marijuana exposure in pets, as reported to the American Society for the Prevention of Cruelty to Animal's Poison Control Hotline, is becoming more frequent. Since 2009, calls reporting marijuana exposure have risen by 50%. It is unknown if this increase is truly due to an increase in the number of animals that are exposed to marijuana or because of the recent legalization of medical marijuana in many states, making people more likely to admit that their animal has ingested a marijuana product. Most reported cases of cannabis poisoning in pets are from the ingestion of marijuana edibles (e.g., brownies, cookies, etc.) that contain THC (25).

In response to the burgeoning interest of medical cannabis for animals, the American Veterinary Medical Association, while not yet articulating an official position on the issue, has instead urged veterinarians to make treatment decisions using sound clinical judgment and current medical information in compliance with federal, state, and local laws and regulations (20). The American Holistic Veterinary Medical Association is currently the only veterinary organization that officially encourages researching the safety, dosing, and uses of cannabis in animals (26). In response to the present lack of scientific research and regulation oversight, most veterinarians suggest that pet owners use caution when giving any cannabis product.

In addition to the paucity of reliable information on the safety, dosage, and effectiveness of cannabis, there is the ambiguity as to its legal status. While there are no Federal Drug Administration approved marijuana products for use in animals, the legality surrounding the recommendation by veterinarians of hemp products for medicinal use in animals can be confusing. While some people cite The United States Court of Appeal for the Ninth Circuit in *Hemp Industries Assn., v. Drug Enforcement Admin.,* 357 F.3d 1012 (9th Cir. 2004), that recognized that "non-psychoactive hemp [that] is derived from the 'mature stalks' or is 'oil and cake made from the seeds' of the Cannabis plant, …fits within the plainly stated exception to the CSA definition of marijuana" as rationale that hemp is legal, others point to state statutes that govern industrial hemp to argue that the legal status depends on individual state's laws (27). Therefore, it is suggested that veterinarians and pet owners should check with their individual state to determine if they are able to prescribe or purchase hemp for their patients and pets (22). That said, however, with respect to hemp products, the Farm Bill of 2013, signed into law in 2014, does make allowances for academic research on industrial hemp if state statutes also allow for such research to occur. Colorado is 1 state that has passed statutes allowing for hemp research under particular conditions and restrictions.

This study was designed to survey consumers who have experience with hemp use for their pets. The findings should 1) assist academic researchers in determining which conditions have raised the most interest for therapeutic hemp among consumers and 2) identify promising directions for clinical research. The study explores which products (e.g., capsules, liquid, chews, etc.) pet owners are purchasing, reasons for their purchases, and their perceived value of these products on their pets' health.

Materials and Methods

An online anonymous survey (a) was made available from January 25, 2015, to February 25, 2015, via a link on a commercial website for a company that specializes in hemp products for animals. The survey was originally piloted by faculty at Colorado State University for assessment of

ambiguity, and/or potentially missing or inappropriate response options. Descriptive statistics and frequency distribution (reported in percentages) were performed using commercially available software (b). Because not all questions were answered by all participants, the totals for each question vary. Reported percentages for each individual question are based on total responses for that question. It should be noted that the data were collected from visitors to 1 animal hemp product company and therefore, due to potential biases, care should be taken before generalizing the results to other hemp products.

Results

A total of 632 people responded. Out of those who reported gender (n=495), 83.2% indicated they were female, and the majority of participants were between 51-60 years of age. Only 74 (14.8%) were 35 years of age or younger. When asked about education (n=495), most reported having some college (176, 35.56%) or a 4-year degree (25.66%). When asked to report what state they live in, the largest percentages were California (109, 21.8%), and Washington (59, 11.8%). The survey questions asked pet owners if they had used specific hemp products for either their dog(s) or cat(s). If they responded that they had used hemp products, they were asked several questions about their product choices and their perception of the effects that the product had on their pet. Questions pertained to the amount of time they had been giving the product, reasons for discontinuation of the product (if applicable), reasons they chose the product, and their perception of the product's impact on specific health issues. Additional questions asked how they had heard about the product, how their veterinarian responded (if told) to the fact that they were using hemp for their animal, and consumers' views about the product's safety as well as its comparison to other forms of treatment.

Usage for Dogs

Out of 631 respondents answering this question, 371 (58.8%) indicated they currently use a hemp product for their dog; 86 (13.6%) indicated they did use, but no longer use, a product; 104 (16.5%) have a dog but have not tried a product; and 70 (11.1%) indicated they do not have a dog (**Table 1**). For those who answered why they had discontinued usage (n=88), 18 (20.45%) reported it was because the product was too expensive; 15 (17.05%) reported it was not effective; and 4 (4.55%) said it was due to negative side effects. The remaining 59 (67.1%) replied "other." The "other" responses were predominately related to the death of the animal or the fact that the medical issue had been resolved. Most people (77.6% of 313 responses) indicated they use the product for an illness or condition diagnosed by a veterinarian with the most common conditions including seizures, cancer, anxiety and arthritis.

Table 1: Usage of product for dogs (n=631)
Out of 631 survey respondents answering this question, the percent and number of respondents choosing a specific answer are indicated.

Yes, currently using	58.8% 371
Yes, but not using any longer	13.6% 86
No, I have a dog, but have not tried any dog canna-pet products	16.5% 104
I don't have a dog	11.1% 70

Usage for Cats

The number of people (from 570 respondents) who indicated they currently use a hemp product for their cat was 68 (11.93%); 36 (6.32%) reported they used it in the past; 154 (27.02%) reported having a cat but have not tried any cat hemp products; and 312 (54.74%) indicated they do not have a cat (**Table 2**). For those who answered why they had discontinued usage (n=36), 4 (11.11%) reported it was because the product was too expensive; 7 (19.44%) reported it was not effective; and none reported negative side effects. The remaining 25 (69.4%) replied "other." Most of the "other" responses were due to the death of the cat or an inability to administer the medication. When asked if they were using the product for an illness or condition diagnosed by a veterinarian, most people (81.8% of 55 responses) indicated that they were, with the most common conditions reported being cancer, anxiety, and arthritis.

Table 2: Usage of product for cats (n=570)
Out of 570 survey respondents answering this question, the percent and number of respondents choosing a specific answer are indicated.

Yes, currently using	11.93% 68
Yes, but not using any longer	6.32% 36
No, I have a cat, but have not tried any cat canna-pet products	27.02% 154
I don't have a cat	54.74% 312

Perceived Impact of Product

Participants were asked to indicate how helpful the products they had been giving their dog were in relieving a multitude of signs and ailments (**Table 3**). Dog owners reported that the hemp products were moderately or very helpful in numerous areas. The areas felt to be positively impacted by the products were relief from pain (reported by 64.3% as helping moderately or a great deal); helping with sleep (reported by 50.5% as helping moderately or a great deal); and relieving anxiety (reported by 49.3% as helping moderately or a great deal). When queried about side effects, those reported most frequently included sedation (with a moderate or significant effect reported by 22.0%) and over-active appetite (reported as having moderate or significant effect by 15.9%) (**Table 4**).

Table 3: Perceived Impact of Product on Symptom Reduction in Dog(s).
The percentage and number of respondents who answered this question by indicating the type of response observed in their dog after using a hemp product.

Perceived Product Impact by Survey Respondents	Did not help at all	Helped very little	Helped moderate amount	Helped a great deal	NA or don't know	n = number of respondents selecting impact statement
Provided pain relief	1.35% 4	2.02% 6	25.93% 77	38.38% 114	33.00% 98	299
Aided with sleep	2.47% 7	3.89% 11	18.73% 53	31.80% 90	43.11% 122	283
Helped relieve anxiety	3.55% 10	6.38% 18	21.28% 60	28.01% 79	40.78% 115	282
Provided nervous system support	1.41% 4	1.77% 5	14.84% 42	26.15% 74	55.83% 158	283
Reduced inflammation	1.85% 5	1.85% 5	17.34% 47	24.72% 67	54.24% 147	271
Reduced seizures or convulsions	1.44% 4	1.08% 3	10.11% 28	19.13% 53	68.59% 190	278
Reduced vomiting and nausea	2.59% 7	1.48% 4	4.81% 13	14.07% 38	77.78% 210	272
Helped suppress muscle spasms	2.27% 6	2.27% 6	4.92% 13	11.74% 31	79.17% 209	265
Helped with digestive tract problems	2.65% 7	4.55% 12	5.68% 15	11.74% 31	75.38% 199	264
Helped with thunderstorm or fireworks phobia	3.00% 8	4.12% 11	5.99% 16	7.12% 19	80.52% 215	269
Inhibited cell growth in tumors/cancer cells	2.60% 7	1.12% 3	4.46% 12	5.58% 15	86.62% 233	270
Helped with skin conditions	3.77% 10	4.15% 11	7.17% 19	5.66% 15	79.25% 210	265
Killed or slowed bacteria growth	2.97% 8	1.49% 4	1.49% 4	1.86% 5	92.57% 249	270
Helped with fungal infection	2.63% 7	1.50% 4	0.38% 1	1.50% 4	94.36% 251	267
Reduced risk of artery blockage	1.53% 4	--	0.76% 2	1.53% 4	96.56% 253	263
Reduced blood sugar levels	1.50% 4	--	--	--	98.50% 263	267
Promoted bone growth	1.15% 3	--	--	--	98.85% 257	260

Table 4: Perceived Side-effects of Product on Dog(s).
The percentage and number of respondents who answered this question by indicating the type of side-effect observed in their dog after using a hemp product.

Perceived Product Side-effect by Survey Respondents	No effect	Minimal Effect	Moderate Effect	Significant effect	NA or don't know	n = number of respondents selecting impact statement
Over-active appetite	42.03% 124	15.59% 46	10.85% 32	5.08% 15	27.46% 81	298
Lack of energy	46.42% 136	16.72% 49	6.83% 20	4.10% 12	26.62% 78	295
Panic reactions	50.17% 147	3.41% 10	7.17% 21	4.10% 12	35.15% 103	293
Panic reactions	39.12% 115	13.61% 40	5.10% 15	2.72% 8	39.80% 117	295
Dry mouth, excessive drinking	34.67% 104	24.67% 74	19.67% 59	2.33% 7	20.00% 60	304
Sedation	1.44% 4	1.08% 3	10.11% 28	19.13% 53	68.59% 190	278
Nausea	51.03% 149	2.74% 8	3.08% 9	1.71% 5	41.78% 122	293
Vomiting	53.24% 156	3.07% 9	2.05% 6	1.71% 5	40.27% 118	294
Increase seizures	55.52% 161	1.72% 5	1.03% 3	0.69% 2	41.38% 120	291
Impaired mental functioning	51.03% 149	3.77% 11	2.05% 6	0.68% 2	42.81% 125	293
Dry or red eyes	51.37% 150	3.08% 9	1.37% 4	0.34% 1	44.18% 129	293
Dizziness	48.79% 141	3.46% 10	1.04% 3	0.35% 1	46.71% 135	290
Rapid heartbeat	43.64% 127	2.75% 8	1.03% 3	--	52.92% 154	292
High blood pressure	38.97% 113	1.03% 3	--	--	60.00% 174	290

For cats, the areas felt to be positively impacted by the products were relief from pain (reported by 66.0% as helping moderately or a great deal); reduction of inflammation (reported by 56.3% as helping moderately or a great deal); and help with sleep (reported by 44.0% as helping moderately or a great deal) (**Table 5**). When asked to report on side-effects, the ones reported most frequently were sedation (with a moderate or significant effect reported by 19.2%) and over-active appetite (reported as having moderate or significant effect by 16.0%) (**Table 6**).

How Purchasers Learned of Products

When asked how they learned about hemp products (n=557), most reported hearing about them from the Internet (284, 50.99%), followed by a friend (90, 16.16%) or their veterinarian (80, 14.36%). When respondents were

Table 5: Perceived Impact of Product on Symptom Reduction in Cat(s)

The percentage and number of respondents who answered this question by indicating the type of response observed in their cat after using a hemp product.

Perceived Product Impact by Survey Respondents	Did not help at all	Helped very little	Helped moderate amount	Helped a great deal	NA or don't know	n = number of respondents selecting impact statement
Provided pain relief	--	--	32.08% 17	33.96% 18	35.85% 19	54
Provided nervous system support	--	--	10.00% 5	16.00% 8	74.00% 37	50
Killed or slowed bacteria growth	--	2.00% 1	4.00% 2	2.00% 1	92.00% 46	50
Reduced blood sugar levels	--	--	6.00% 3	--	94.00% 47	50
Reduced vomiting and nausea	--	5.77% 3	13.46% 7	21.15% 11	59.62% 31	52
Helped with fungal infection	--	--	2.08% 1	2.08% 1	95.83% 46	48
Reduced seizures or convulsions	2.00% 1	--	2.00% 1	4.00% 2	92.00% 46	50
Reduced inflammation	--	6.25% 3	27.08% 13	29.17% 14	39.58% 19	49
Aided with sleep	2.00% 1	--	18.00% 9	26.00% 13	54.00% 27	50
Reduced risk of artery blockage	--	--	4.26% 2	4.26% 2	91.49% 43	47
Inhibited cell growth in tumors/ cancer cells	2.13% 1	--	4.26% 2	4.26% 2	89.36% 42	47
Helped with skin conditions	--	6.25% 3	10.42% 5	8.33% 4	75.00% 36	48
Helped with thunderstorm or fireworks phobia	--	--	--	2.04% 1	97.96% 48	49
Helped suppress muscle spasms	--	4.08% 2	--	2.04% 1	93.88% 46	49
Helped relieve anxiety	2.04% 1	6.12% 3	18.37% 9	18.37% 9	55.10% 27	49
Helped with digestive tract problems	--	6.12% 3	12.24% 6	14.29% 7	67.35% 33	49
Promoted bone growth	--	--	2.08% 1	--	97.92% 47	48

Table 6: Perceived Side-effects of Product on Cat(s)

The percentage and number of respondents who answered this question by indicating the type of side-effect observed in their cat after using a hemp product.

Perceived Product Side-effect by Survey Respondents	No effect	Minimal Effect	Moderate Effect	Significant effect	NA or don't know	n = number of respondents selecting impact statement
Sedation	17.31% 9	32.69% 17	15.38% 8	3.85% 2	30.77% 16	52
Lack of energy	36.73% 18	14.29% 7	10.20% 5	2.04% 1	38.78% 19	50
Over-active appetite	32.00% 16	14.00% 7	16.00% 8	--	38.00% 19	50
Increase seizures	32.65% 16	--	--	--	67.35% 33	49
Rapid heartbeat	26.00% 13	2.00% 1	2.00% 1	--	70.00% 35	50
High blood pressure	20.41% 10	2.04% 1	--	--	77.55% 38	49
Dry mouth, excessive drinking	28.57% 14	14.29% 7	4.08% 2	2.04% 1	51.02% 25	49
Nausea	36.00% 18	6.00% 3	2.00% 1	6.00% 3	50.00% 25	50
Vomiting	40.00% 20	8.00% 4	4.00% 2	6.00% 3	42.00% 21	50
Dry or red eyes	40.82% 20	--	2.04% 1	--	57.14% 28	49
Impaired mental functioning	40.82% 20	4.08% 2	2.04% 1	--	53.06% 26	49
Dizziness	38.78% 19	--	--	2.04% 1	61.22% 30	50
Panic reactions	37.50% 18	6.25% 3	4.17% 2	2.08% 1	52.08% 25	49

asked if they had spoken to their veterinarian about the products (n=558), 274 (49.1%) reported that they had, with most indicating their veterinarian had responded positively (169, 61.7%); only 21 (7.7%) reported their veterinarian had responded negatively; and 84 (30.7%) said their veterinarian did not express an opinion. The number who did not tell their veterinarian was 192 (34.4%), and 47 (8.4%) indicated they had not visited a veterinarian since they began using a hemp product (**Table 7**).

Table 7: Veterinarians' Reactions to Discussion of Product (n=558)
Out of 558 survey respondents answering this question, the percent and number of respondents choosing a specific answer are indicated.

Yes and s/he responded positively about using this product	30.29% 169
Yes and s/he responded negatively about using this product	3.76% 21
Yes and s/he did not express an opinion on using this product for my pet	15.05% 84
No I have not spoken to my veterinarian about using this product	34.41% 192
I have not visited a veterinarian since using this product	8.42% 47
Other	8.06% 45

Product safety

Of the participants who indicated their view about product safety (n=492), 88.8% rated the products as very safe. When asked to compare the products with human hemp-based products (n=500), most (315, 63.00%) indicated they did not know which was safer. The remaining responses, with the exclusion of 2 responses, reported feeling the products were as safe as or safer than human hemp based products. Most respondents felt it was very important to have an independent laboratory analysis conducted to determine the actual content of CBD in each item (394, 78.5%), (n=502). Only 19 (3.8%) of the total 502 respondents reported this was not important.

Product compared to other treatments

When asked to compare the hemp product they used most recently with other forms of animal medication or therapy (n=461), only 34 (7.37%) reported feeling the hemp product did not work as well as other forms of treatment. The number who felt the product worked better than any, most, or some other treatments was 288 (62.48%), and 139 (12.15%) reported the product worked as well as most or some other treatments (**Table 8**).

Table 8: Product Comparison to Other Medications or Therapies (n=461)
Out of 461 survey respondents answering this question, the percent and number of respondents choosing a specific answer are indicated.

This product works better than ANY treatments/medications	19.31% 89
This product works better than MOST other treatments/medications	24.73% 114
This product works better than SOME treatments/medications	18.44% 85
This products works as well as SOME other treatments/medications	20.82% 96
This products works as well as MOST other treatments/medications	9.33% 43
This product does not work as well as MANY other treatments/medications	2.82% 13
This product does not work as well as ANY treatments/medications	2.60% 12
This product does not work as well as MOST other treatments/medications	1.95% 9

Reasons for using product

Lastly, respondents were asked how important several reasons were in their decision to use any hemp products. The most commonly endorsed reasons included liking the idea that the products came from natural sources (rated as moderately or extremely important by 85.1%); thought this product would work as an adjunct to other therapies (rated as moderately or extremely important by 81.1%); the cost of the product (rated as moderately or extremely important by 70.4%); and preferring hemp products to conventional medicine (deemed as moderately or extremely important by 68.8%) (**Table 9**).

Table 9: Reasons for Using Product
The percentage and number of respondents who answered this question by indicating the reason they have used hemp product(s) in their pet.

Reasons for Using a Hemp Product in Respondent's Pet	Not important/ not a factor	Minimally important	Moderately important	Extremely important	n = number of respondents selecting this reason
I prefer hemp products to conventional medicine	17.31% 85	14.46% 71	30.35% 149	38.49% 189	494
I don't like to support major pharmaceutical companies	33.54% 165	16.46% 81	17.48% 86	32.93% 162	494
I like the idea that this product comes from "natural" sources	7.27% 36	8.08% 40	24.65% 122	60.40% 299	497
The cost of this product is right for me	13.87% 67	16.98% 82	35.61% 172	34.78% 168	489
I thought this product would work as an adjunct to other therapies	11.07% 54	7.99% 39	31.15% 152	50.00% 244	489

Discussion

This is the first study of its kind to systematically investigate the reasons why an increasing number of owners use hemp for their small animals. This study analyzed the feedback of customers from 1 company that specifically produces hemp-based products for animals (28).

The results from this study provide information about why pet owners purchase hemp products and their impressions of the results they have seen. The majority of survey respondents indicated they currently use a hemp product for their dogs, with far fewer reporting they purchased the products for their cats. Dog owners reported that the hemp products were moderately or very helpful in numerous areas. The reported positive impact was highest for relief from pain (64.3%), followed by helping with sleep (reported by 50.5%), and relief from anxiety (49.3%). The most frequently reported side effects were sedation (22.0%) and over-active appetite (15.9%). For cats, the areas felt to be most positively impacted by the products were relief from pain (66.0%), reduction of inflammation (56.3%), and help with sleep (44.0%). The most common side effects for cats were sedation (19.2%) and over-active appetite (16.0%). Side effects were rarely mentioned as a reason for discontinuing a product. For dogs, the most common reason to discontinue a product was expense, followed by ineffectiveness. For cats, the most common reason was ineffectiveness, followed by expense.

When asked to compare hemp products to other forms of medication or therapy, most owners felt the hemp products work better than other treatments with only 7% reporting feeling they do not work as well. The most common reasons for choosing to use hemp products included a positive feeling about the fact that the products come from natural sources, and that the products could be used as an adjunct to other therapies. Furthermore, nearly 90% indicated that they thought hemp products were "very safe," though they would prefer verification on the contents, especially that of CBD, the active major constituent.

The fact that owners turned to hemp for the treatment of medical conditions may suggest that, similar to human medicine, many are not satisfied with more conventional modes of care. In our survey we found that most respondents were well-educated and that the treatment worked better or at least as well as other approaches. Although the potential of a placebo effect cannot be ignored, these results do suggest a large number of pet owners felt hemp products helped their pets for numerous ailments with minimal side effects. These results lend additional support to the anecdotal stories currently circulating about the use of hemp products for animals (29).

It is important to avoid interpreting these results as an endorsement for the efficacy of any THC or CPD product in veterinary medicine. Limitations of this study are the potential bias of gathering owners' opinions based on their own observations, the lack of placebo or control group, the lack of assessment of an owner's ability to accurately and objectively report changes in their pet's medical condition, and the anecdotal nature of the survey responses. Nevertheless, the survey does point out that some pet owners are viewing marijuana based products for their pets favorably, emphasizing the need for veterinarians to be informed about these opinions and need for objective, placebo controlled clinical trials.

In addition to providing some support for the growing number of anecdotal stories, these results give guidance to researchers seeking to perform clinical studies on hemp in terms of its putative effectiveness and possible adverse outcomes. We have identified the positive outcomes most commonly observed by consumers. The next step to determine the viability of hemp use therapeutically would be carefully controlled clinical trials. Potential areas of research would include pain management and behavioral interventions for sleep and anxiety for dogs, and pain management, inflammation reduction, and improvement in sleep patterns for cats.

Finally, in terms of safety, independent laboratory analysis of product contents and purity was deemed highly desirable. It is suggested that the field would benefit from studies analyzing the actual content of available products, including amounts of active ingredients; impact of non-active ingredients/additives; stability in the products administered; batch-to-batch variability; and potential contamination with pesticides, fungicides, and herbicides.

In conclusion, the use of cannabis products for animals warrants the attention of veterinarians and researchers. Indeed, it is suggested that both the promises and perils of medical marijuana for animals point to the need for science-based education, regulation, and research;

and veterinarians should be key players in the efforts surrounding the creation of well-designed, controlled clinical trials looking at this emerging area of animal treatment (22).

FOOTNOTES

a. Survey Monkey,

b. IBM SPSS Statistical software, version 21

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