

Supplementary material

Appendix A. Summary of questions regarding seeking care for acute, preventative, end-of-life, chronic health issues, attitudes to healthcare seeking and urgency to seek care.

Questionnaire Section	Questions	Response options (recoding pattern)
About your dog	Your dog is a:	Male
		Female
	How old is your dog?	Number (years recoded to months)
	When did you get your dog?	Before COVID-19 pandemic (before 23rd of March 2020)
		Since COVID-19 pandemic (after 23rd of March 2020)
	What breed is your dog?	List + 'Other, please specify'
	What size is your dog?	Toy (e.g. Chihuahua)
		Small (e.g. Terrier)
		Medium (e.g. Colie or Spaniel)
		Large (e.g. Labrador or German Shepherd)
		Giant (e.g. Great Dane)
		Recoding pattern: small (toy/ small), medium (medium), large (large/giant)

Where did you acquire your dog?	Commercial or hobby breeder
	I bred the dog myself
	UK dog shelter/ Rescue organisation
	Overseas dog shelter/ Rescue organisation
	Online
	Given to me by friend or family member
	Service dog (e.g. a guide dog, hearing dog provided by the specialist charity)
	Other
	Recoding pattern: breeder (commercial or hobby breeder, I bred the dog myself), shelter or rescue (UK dog shelter/ Rescue organisation/ Overseas dog shelter/ Rescue organisation), Other (Online/ Service dog/ Given to me by friend or family member)
Is your dog neutered (spayed/ castrated)?	Yes
	No
	Unknown
Looking at the picture above, which set of circles best	1-7
describes the relationship between you and your dog? (ref)	Recoding pattern: weak (1-3), medium (5-4), strong (6-7)

	MDORS questionnaire (Dwyer et al., 2006)	5- point Likert scale with at least once a day- never and strongly agree- strongly disagree as anchors
	In the year before the COVID-19 pandemic (prior to 23rd March 2020), how many times did your dog visit a veterinarian?	Number. For the purpose of the analysis, this was converted to a monthly average.
	Since the restrictions imposed due to the COVID-19 pandemic (from the 23 rd March 2020), how many times in total did your dog visit a veterinarian?	Number. For the purpose of the analysis, this was converted to a monthly average.
Veterinary care during the COVID-19 pandemic: acute care	Did your dog potentially ¹ need treatment for an acute ² (sudden-onset) condition between the first national lockdown (23rd March) and now? ³	No acute medical condition Skin infection or other skin issues Gastroenteritis (vomiting and diarrhoea) Torn nail or dew claw Open wound (including a dog bite) Broken limb or tail Joint/ ligaments problems (e.g. cruciate ligament tear, hip dysplasia) Teeth injury Swallowed objects
		Heatstroke Poisoning (e.g. eating chocolate/ plants)

		Eye infection Ear infection Urinary infection (bladder/ kidney) Allergy Fits/ tremors Don't know/ can't remember Other, please describe
Veterinary care during the COVID-19 pandemic: standard preventative care	Did your dog potentially ¹ need standard preventative healthcare such as vaccination, flea or worming treatment, or neutering since the beginning of the restrictions imposed due to the COVID-19 pandemic (23rd March and now)?	No, the treatment wasn't required Vaccination (primary or booster) Flea treatment Worming treatment Neutering Nail trimming Don't know / can't remember Other, please describe
Veterinary care during the COVID-19 pandemic: end-of-life-care	Did your dog potentially ¹ require end-of-life care (i.e., euthanasia or being 'put to sleep') sometime during the COVID-19 pandemic (i.e., from the23rd March2020 and now)?	Yes, I wish to continue with this section Yes, but I want to skip other questions in this section No, my dog did not require end of life care

Veterinary care during the COVID-19 pandemic: chronic health conditions ⁴	Does your dog have a chronic health condition ⁴ ?	Yes No
Veterinary care during the COVID-19 pandemic: chronic health conditions	If your dog potentially needed care for more than one chronic conditions, please tell us about the earliest one	Osteoarthritis and other orthopaedic conditions Epilepsy Diabetes Dental problems (periodontal disease) Obesity Skin problems Cancer treatment Glaucoma Hypothyroidism Dry eyes Allergies Irritable Syndrome/ inflammatory bowel disease Pancreatitis Kidney disease

		Liver disease
		Endocrine disorder (e.g. Cushing's or Addison's disease)
		Cognitive dysfunction
		Degenerative heart disease
		Don't know/ can't remember
		Other, please describe
Veterinary care	Did your dog potentially require end-of-life care (i.e.,	Yes, I wish to continue with this section
during the COVID-19	euthanasia or being 'putto sleep') sometime during the COVID-19 pandemic (i.e., from the23rd March2020	Yes, but I want to skip other questions in this section
pandemic: end-of- life-care	and now)?	No, my dog did not require end of life care
Veterinary care	What was the reason for considering end-of-life care?	Cancer
during the COVID-19	Please select all applicable options.	Traumatic injury
pandemic: end-of- life-care		Age-related poor health
		Behaviour problems
		Don't know
		Chronic condition, please describe
		Other, please describe
Veterinary care during the COVID-19	When did your dog potentially need treatment for the condition selected above?	During the first strict national lockdown (between 23rd March and 13th May 2020)

pandemic for acute care, preventative care, end-of-life care and chronic care.		After the first strict national lockdown measures were relaxed (between 13th May and 5th November 2020) During a local lockdown/ in an area with local restrictions (e.g. classified as "tier 3") (between 13th May and 5th November 2020) During the second strict national lockdown (between 5th November and 3rd December 2020) After the second national lockdown (after 3rd December 2020)
Veterinary care during the COVID-19 pandemic for acute care, preventative care, end-of-life care and chronic care.	Is the time period selected above accurate?	Yes, I'm sure of the date No, I'm not completely sure of the date
Veterinary care during the COVID-19 pandemic for acute care, preventative care,	Did you seek veterinary advice, care or treatment since the beginning of the restrictions imposed due to the COVID-19 pandemic (23rd March and now) for [the acute (sudden-onset) condition] mentioned above?	Yes, I considered it, but at that time I decided against accessing veterinary advice, care or treatment Yes, I sought to access veterinary advice, care or treatment No, I did not consider seeking veterinary advice care or treatment at the time

end-of-life care and chronic care.		
Veterinary care during the COVID-19 pandemic for acute care, preventative care, end-of-life care and chronic care.	Were you able to access veterinary advice, care or treatment when potentially needing it?	Yes No
Veterinary care during the COVID-19 pandemic for acute care, preventative care, end-of-life care and chronic care.	How was the care received (please choose all that apply)?	Me/another family member/friend and my dog visited the veterinary practice as usual/wearing facemask. My dog was seen by the vet or vet nurse and treated outdoors, e.g. in the car park. Due to COVID-19 related restrictions, I needed to hand my dog to the vet/ vet nurse who treated the dog in my absence. Telephone advice was given instead of a face-to-face consultation. Advice was given via an email or an app instead of a face-to-face consultation. After a telephone, app or email consultation, my dog was seen in the veterinary practice. I collected my dog's medical treatment/ prescription or it was delivered to me, without the vet/ vet nurse seeing the dog.

		Other, please describe
Veterinary care during the COVID-19 pandemic: end-of-	How was the end-of-life care handled? (please choose all that apply):	My dog and myself/ a friend or family member visited the veterinary practice as usual/ wearing a facemask and the dog was put to sleep.
life-care		My dog was put to sleep by the vet or vet nurse outdoors, e.g. in the car park.
		Due to COVID-19-related restrictions, I needed to hand over my dog to the vet/vet
		nurse and my dog was put to sleep in my absence or in the absence of a family member/friend.
		My dog was put to sleep at home by the vet who visited us.
		My vet and I decided not to put my dog to sleep at this time.
		Other, please describe
Veterinary care during the	Why were you unable or decided not to seek veterinary help or advice during the COVID-19 pandemic? Please	Not applicable- I sought to access and were able to access veterinary care
COVID-19 pandemic for	select all applicable reasons.	Fear of contracting COVID-19.
acute care, preventative care and chronic care.		My veterinarian was only seeing dogs in the case of an emergency at that time.
		Difficulty in managing my dog behaviour and maintaining social distance.
		I did not want my dog to be assessed by a vet/vet nurse without myself or another

		family member present.
		My vet assured me that missing this treatment was unlikely to affect my dog's long term
		health.
		I found out that missing the treatment was unlikely to affect my dog's long-term health
		without asking for a vet's advice.
		More precarious financial situation due to furlough/redundancy
		I obtained advice from the internet
		I used home remedies
		I used previous left-over medication
		My dog's condition improved without needing treatment
		Other, please describe
Veterinary care during the	Why were you unable or decided not to seek veterinary help or advice during the COVID-19 pandemic? Please	Not applicable- I sought to and was able to access veterinary care.
COVID-19 pandemic: end-of-	select all applicable reasons.	Fear of contracting COVID-19.
life-care		Difficulty in managing my dog behaviour and maintaining social distance.
		I did not want my dog to go to the veterinarian unaccompanied.

		More precarious financial situation due to furlough/redundancy. My dog's condition improved Other
Veterinary care during the COVID-19 pandemic for acute care, preventative care, end-of-life care and chronic care.	Please explain factors you considered when deciding whether to seek care for the acute (sudden-onset) medical condition/ standard preventative healthcare/ end-of-life care for your dog was experiencing at this time. In what way was it similar or different from seeking veterinary care or treatment before the restrictions imposed due to COVID-19?	Open-ended
Veterinary care during the COVID-19 pandemic: chronic care.	In total, how many times did you visit a veterinarian for your dog's chronic health issues since the restrictions imposed due to the COVID-19 pandemic(from the23rd March 2020)?	Number. For the purpose of the analysis, this was converted to a monthly average.
Veterinary care during the COVID-19 pandemic: chronic care.	How long did the most recent veterinary consultation take? If you needed to travel for it, please consider the time needed to drive/ walk to the veterinarian and back and the time taken up by the consultation:	Number. For the purpose of the analysis, this was converted to a monthly average.
Veterinary care during the COVID-19	How do you manage your dog's chronic condition since the restrictions due to the COVID-19 pandemic have been imposed (from the 23rd March 2020)? How, if at all, is managing your dog's health during the COVID-19 pandemic different to how you managed it	Open-ended

pandemic: chronic care.	before? If your dog has been experiencing multiple chronic conditions, please tell us about the earliest one (the one you sought help for first)	
Caring for dog's chronic health problems	Did your dog have the chronic condition before the COVID-19 pandemic?	Yes No, it was noticed and/ or diagnosed after the pandemic has started My dog does not have a chronic condition
Caring for dog's chronic health problems	In the year before the COVID-19 pandemic (prior to 23rd March 2020), how many times did your dog visit a veterinarian for chronic health issues specifically?	Number. For the purpose of the analysis, this was converted to a monthly average.
Caring for dog's chronic health problems	Prior to the restrictions imposed due to COVID-19 pandemic, how long did the average veterinary consultation for chronic health issues take? If you needed to travel for it, please consider the time needed to drive/ walk to the veterinarian and back and the time taken up by the consultation. If your dog was experiencing multiple chronic conditions, please tell us about the one that was first noticed	Open-ended

Caring for dog's chronic health problems	Is the veterinary treatment for the chronic health issues covered by your dog insurance?	Yes- completely I pay the excess, but more than one half of the treatment cost is covered I pay the excess and less than half of the cost is covered No, it is not covered No, my dog is not insured Recoding pattern: at least partially covered by insurance (Yes-completely/I pay the excess, but more than one half of the treatment is covered/ I pay the excess and less than half of the cost is covered), not covered (No, it is not covered/ No, my dog is not insured)
Caring for dog's chronic health problems	How does the specific treatment/medications prescribed by the veterinarian affect your dog's behaviour?	Open-ended
Caring for dog's chronic health problems	In addition to the treatment/medications prescribed by the veterinarian, have you tried any other treatments? Please select all that apply	No other treatment/ therapy Weight management Home environment/ lifestyle adaptations Modified exercise routine Nutrition (changes in the main diet/ dietary supplements/ nutraceuticals)

		Homeopathic treatments
		Herbal therapy
		Acupuncture
		Magnetic Field Therapy
		Laser therapy
		Hydrotherapy
		Physiotherapy
		Other
Caring for dog's chronic health problems	If your dog receives additional treatment/ therapy, how does the specific complimentary treatment affect your dog's behaviour?	Open-ended
Caring for dog's chronic health problems (asked only if respondent stated that the dog	The treatment and advice provided by my veterinarian is necessary to manage my dog's health condition.* Interrupting the treatment would be very risky.*	5-point Likert scale with strongly agree- strongly disagree used as anchors * Additional option: "Not applicable- I haven't contacted the vet or healthcare professional about my dog's chronic health
has a chronic condition)	I am aware of different treatment options for my dog's condition	issues"
Knowledge and General attitudes to veterinary	Please respond to the following statements: I trust my veterinarian*	5-point Likert scale with strongly agree- strongly disagree used as anchors
healthcare	My veterinarian is knowledgeable*	* These questions included an additional response option: "Not applicable- my dog is not registered with a vet"

I care about my vet's views about how I manage my dog's health*

Managing my dog's behaviour during veterinary consultations is/has been difficult*

My vet thinks that providing my dog with regular check-ups or treatments is important*

Managing my dog's health is easy

I feel well informed and knowledgeable about my dog's health

My past experiences with veterinarians were not always good

I know where to seek information about my dog's health

I am confident in recognising when my dog is not feeling well

It's important to vaccinate dogs

I think that providing my dog with regular veterinary check-ups or treatments is important

My friends and family think that providing my dog with regular check-ups or treatment is important

I care about my friends and family's views about how I manage my dog's health

My dog's health has deteriorated since the beginning of the COVID-19 pandemic

	If I needed it, I would be able to access veterinary care for my dog	
Urgency to seek care?	Please indicate how long you would wait to contact your veterinarian in the following circumstances: If your dog became lame without having any visible injury or accident If your dog began to scratch him or herself a lot without any obvious reason If your dog began to soil the house after being housetrained for at least 1 year If your dog had a soft lump on their neck that did not affect their behaviour If you noticed your dog approaching the doors from the wrong side (where the hinge is), where before they seemed to know which way the doors open If you thought your dog was overweight If your dog lost their appetite If your dog started acting aggressively or became fearful towards people If you noticed your dog bumping into objects	5-point Likert scale: Immediately seek an emergency appointment On the same day to seek an appointment as soon as possible Within a week, if the condition didn't improve Within a month, if the condition didn't improve I would not contact the vet for this
Managing your dog's health in the future	Please tell us about your future plans for management of your dog's health. You can consider how often you'd like to see the veterinarian or other healthcare	Open-ended

	specialists and for what reasons, and the impact of the COVID-19 pandemic.		
About your vet	I chose my vet because (select all that applies). If you	Someone recommended them to me	
	attend more than one vet practice, please answer these questions thinking about your primary vet:	My friends/ family attend it	
		It's affordable	
		It's covered by my insurance	
		It's nearby	
		My vet takes time to explain things clearly to me	
		It offers specialist services that I wanted to use	
		My dog doesn't go to vet	
		Other	
	How long have you been attending this veterinary practice?	Less than one year	
		1-3 years	
		More than 3 but less than 5 years	
		More than 5 but less than 7 years	
		More than 7 years.	
		Don't know/ can't remember	
About COVID-19 in your area	Have you experienced suspected COVID-19 disease symptoms?	Yes	

		No	
	Has anyone else in your household experienced suspected COVID-19 disease symptoms?	Yes No No, not applicable- I live alone	
	Are you classified as vulnerable and were you told to isolate for 12 weeks regardless of symptoms?	Yes No Not officially told but consider myself vulnerable	
About you	What is your age?	18-29 30-49 50-59 60 or over Prefer not to say Recoding pattern: Under 50 years of age (18-29/30-49), Over 50 years of age (50-59/60 or over), Prefer not to say	
	What is your gender?	Male Female Other (please specify)	

	Prefer not to say
What is your highest level of qualification?	University Higher Degree (e.g. PhD, MSc) *
	First degree level qualification (including foundation degrees, graduate membership of a professional institute*
	PGCE*
	Diploma in higher education*
	Teaching qualification (excluding PGCE)*
	Nursing or other medical qualification not yet mentioned*
	A-Level
	Welsh Baccalaureate
	International Baccalaureate
	AS Level
	Higher Grade/Advanced Higher (Scotland)
	Certificate of Sixth Year Studies
	GCSE/O-Level
	CSE
	Standard/Ordinary (O) Grade/Lower (Scotland)
	Other school (including school leaving exam certificate or matriculation)

	None of the above (please describe)
	Recoding pattern: above university level (variables marked with*), prefer not to say, below university level (all other variables)
What's your household income?	Less than £15,000*
	£15,000-20,000*
	£20,001-£35,000*
	£35,001-50,000
	£50,001-65,000
	£65,001- 80,000
	£80,001- 95,000
	£95, 001- 110,000
	£110,001- 125,000
	£125,001- 140,000
	Over £140,000
	Prefer not to say
	Recoding pattern: Below or within national median (£29,900, O'Neil, 2021; variables marked with*), Above national median, Prefer not to say

Are you worried about losing income due to the COVID-19 situation?	Yes, I'm very worried about losing income* Yes, I'm somewhat worried about losing income* I'm neither worried nor not worried about losing income\$ I'm generally not worried about losing income† I'm not at all worried about losing income† Don't know‡ Prefer not to say‡ Recoding pattern: Worried (variables marked with*), ambivalent (variables marked with\$), not worries (variables marked with), don't know or prefer not to say (variables marked with)
How would you describe your household composition?	I live alone I live with others
Current number of dogs:	None- my dog passed away/ was rehomed during the pandemic 1 2 3 or more
How many dogs have you had before this one?	I had a dog/dogs growing up, but this is my first dog as an adult*

	This dog is my first dog ever*
	I had 1 more dog as an adult§
	I had 2 more dogs as an adult§
	I had more than 2 dogs as an §
	Recoding pattern: first dog during adulthood (variables marked with *), other dogs during adulthood (variables marked with \$)
Is there anything else you would like us to know?	Open-ended

¹Potentially needing treatment was defined in the survey as "you were unsure whether it [veterinary care] was needed, but you considered it".

Appendix B.Internal consistency (reliability) of HMB constructs and how these were used in logistic regression models.

Construct	Candidate variables	Cronbach's alpha	Outcome
Perceived susceptibility	'It's important to vaccinate dogs'	The third sentence showed poor	Perceived susceptibility- in models fitted as

²Acute conditions were defined as "sudden-onset conditions, e.g. open wound, broken limb or tail, heatstroke, poisoning (e.g. eating chocolate/ plants), swallowed objects, teeth injury, eye/ear/skin/urinary infection (bladder/ kidney), torn nail or dewclaw, allergy, fits/ tremors, joint/ ligaments problems (e.g. cruciate ligament tear, hip dysplasia) or gastroenteritis (vomiting and diarrhoea)."

³In case where a dog needed help for more than one condition, respondents were asked to describe the earliest condition that a dog needed help for.

⁴ Chronic conditions are defined as any health issues affecting a dog over a period of at least one year and likely to require ongoing medical attention, e.g. osteoarthritis (stiff/painful joints), epilepsy (symptoms may include seizures or funny spells), diabetes (changes in hormonal/endocrine system which lead to high blood sugar levels which may lead to changes in dog's appetite, thirst, changes in weight and needing to urinate more), dental problems (issues with teeth/ gums), skin problems (itching, allergies, skin sensitivity),ear disease or problems, or help with weight management.

	'I think that providing my dog with regular veterinary check-ups or treatments is important' 'My dog's health deteriorated since the beginning of the pandemic'	consistency (alpha=0.23), so it was dropped. For the two remaining sentences, the Raw alpha= 0.66, Standardised alpha= 0.67	both one variable (average of scores on the first two sentences) and individual sentences. 'My dog's health deteriorated since the beginning of the pandemic' fitted as a standalone statement.
Perceived severity (applicable only to dogs with chronic health issues)	'The treatment provided by my veterinarian is necessary to manage my dog's health' 'Interrupting the treatment would be very risky'	Raw alpha= 0.72, Standardised alpha= 0.74	Perceived severity treated as one variable (average score for two questions)
Perceived benefits	'The treatment and advice provided by veterinarian is necessary' 'I trust my veterinarian' 'My veterinarian is knowledgeable', 'I care about my vet's views about how I manage my dog's health', 'My vet thinks that providing my dog with regular check-ups or treatment is important'	'I care about my friend's and family's views about how I manage my dog's health' had poor consistency (alpha= 0.52), so it was dropped.	The sentence 'I care about my friend's and family's views about how I manage my dog's health' was fitted as a stand-alone sentence in the models. Perceived benefits treated as one variable

	'My friends and family think that providing my dog with regular check-ups is important', 'I care about my friends and family's views about how I manage my dog's health'.	For the other variables, the raw alpha=0.81, standardised alpha=0.82	(averaged score for the 6 questions)
Perceived barriers	'Managing my dog's behaviour during veterinary consultations is/ has been difficult' 'My past experiences with veterinarians were not always good'	Raw alpha= 0.26, Standardised alpha= 0.31	These variables were fitted as independent statements.
Self-efficacy	'Managing my dog's health is easy' 'I feel well informed and knowledgeable about my dog's health' 'I know where to seek information about my dog's health' 'I am confident in recognising when my dog is not feeling well' 'I am aware of different treatment options for my dog's condition' 'If I needed to, I would be able to access veterinary care for my dog'.	Raw alpha= 0.63, Standardised alpha= 0.66	Perceived self- efficacy- in models fitted first as one variable (average of scores on all sentences) and individual sentences.

Running Title