

ORIGINAL RESEARCH

Assessing owners' readiness to change their behaviour to address their companion animal's obesity

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Abstract

Background: Owner behaviour change in relation to management is critical for successful pet weight loss. The stages of change (SOC) can be used to conceptualise the process of intentional behaviour change. Clients may be more likely to make successful changes when practitioners use communication techniques appropriate for a client's current stage. The objective of this cross-sectional study was to assess pet owners' SOC in relation to managing the weight of their overweight or obese pet.

Methods: An online questionnaire targeting dog and cat owners was distributed via snowball sampling. A total of 532 questionnaires were included in the analysis. Of these, 153 participants (28.8%) self-identified their pet's body condition score (BCS) as greater than 5 (on a nine-point scale). An adapted University of Rhode Island Change Assessment scale was completed by 119 of these participants (77.8%) to assess their readiness to change related to managing their overweight or obese pet.

Results: Most participants were scored in the precontemplation (52.1%) and contemplation (42%) stages, where readiness to change is low. Owner assessments likely resulted in underestimation of pets' BCS.

Conclusion: The results offer preliminary insight into the SOC of owners who identify their pets as overweight or obese. Developing tools to assess and understand owners' readiness to change may be useful in informing veterinary professionals' communication approaches when engaging in weight management conversations.

INTRODUCTION

Pet obesity continues to be of significant concern for the veterinary profession, and despite the efforts of veterinary associations and advocates, the prevalence of obesity in cats and dogs is increasing,¹ with some prevalence estimates at nearly 60%.^{2,3} Addressing pet obesity when it presents in companion animal veterinary practice is considered a professional responsibility due to the implications for pet health and wellbeing.⁴ However, the topic of pet obesity may also be considered sensitive or difficult to broach with pet owners.⁵⁻⁷ In human medicine, a number of barriers to discussing obesity have been identified among physicians, including poor obesity education,⁸ time constraints, lack of confidence in patients' ability to change and concern that discussing weight would stigmatise patients or negatively impact mental health.^{9,10} A small UK study exploring veterinarians' communi-

cation with dog owners about obesity found similar concerns, including perceived issues with client compliance and pet owners' obesity.¹¹ Recent qualitative research has also indicated that veterinarians may perceive some clients to be unwilling to discuss or consider change to manage their pet's weight.¹²

Environmental factors and feeding management are significant aspects of a pet's nutritional management that relate to obesity.^{7,13,14} Owner commitment and engagement in pet weight management is essential to successful weight loss for pets. Therefore, pet owners' readiness to make changes in the home to achieve pet weight loss is likely to be a significant factor in the uptake of and adherence to weight management plans. Readiness indicates a willingness to engage in a process or adopt a specific behaviour.¹⁵ There has been recent attention on the potential benefits of assessing clients' readiness to change (RTC) when veterinary professionals are discussing pet obesity

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and weight management with clients.¹⁶ It has been suggested that by assessing clients' readiness and applying appropriate communication tools that align with their current readiness, veterinary professionals can implement weight management plans at the right time and better support clients in overcoming obstacles to change.¹⁶ Tailoring interventions to a client's readiness has also been suggested as potentially effective in supporting desirable outcomes of behaviour modification in human healthcare, including behaviour related to weight management.^{17–20}

Rather than being an innate or static characteristic of clients, resistance can be conceptualised as a product of the interaction between a client and practitioner²¹ and may occur when clients and practitioners are working at different levels of readiness.^{22,23} When practitioners tailor their communication to suit the needs of individual clients based on their current readiness, resistance may be reduced.²³ The role of the interaction, and not only the individual client, in the lead up to some clients being classified as 'difficult' has also been acknowledged in veterinary medicine.²⁴ Understanding a client's current level of readiness is integral to appropriately addressing the issue at hand in a way that supports change and does not damage rapport between the client and practitioner.

The stages of change (SOC) are a key construct of the transtheoretical model developed in the early 1980s by psychologists working to understand the change process for people with addictions.²² The SOC are one way of conceptualising how someone moves through the process of making an intentional change to an established behaviour. Briefly, the characteristics of the SOC are as follows:^{22,23,25,26}

1. **Precontemplation:** The individual lacks awareness of a problem or reason to change or is currently unwilling to consider change (e.g., owner is not aware pet is overweight or sees no reason to address weight).
2. **Contemplation:** A problem or need to change has been acknowledged, and the individual is considering the possibility of or weighing the pros and cons of change yet may not be committed to change (e.g., the owner is aware that the pet is overweight yet may be ambivalent towards weight management).
3. **Preparation:** The individual is committed to change in the near future and may have already attempted small changes (e.g., the owner has done research or sought weight management advice).
4. **Action:** The individual is making overt behaviour changes, with potentially varying success (e.g., making significant changes to the pet's feeding management).
5. **Maintenance:** The individual is working to sustain changes made in the action stage and prevent relapse back to the previous behaviour (e.g., sustaining changes to feeding management and continuing to monitor the pet's weight).

Individuals may move through the stages at various speeds, and people may spend more time in some stages compared to others (e.g., spending a long time contemplating the pros and cons of change before committing).^{22,23} The nonlinearity of change should also be acknowledged. Regressing to a previous stage is common and expected, and someone may cycle through the stages several times before maintaining a new behaviour.^{22,23}

It may be particularly important for veterinary professionals to recognise when clients with overweight or obese pets are in the earlier stages of precontemplation and contemplation and to adopt appropriate communication styles that suit the current needs of such clients. A preliminary understanding of the readiness of pet owners with overweight and obese pets may provide a starting point for further exploration of the application of such communication styles in veterinary practice. Previous suggestions have been put forward for how veterinary professionals can use the SOC to inform their approach when discussing pet obesity with clients,^{5,16,27} yet to our knowledge, there has been no investigation into clients' current RTC to address pet obesity. The objective of this study was to assess pet owners' RTC related to managing the weight of their overweight or obese cat or dog to inform veterinary professionals' approach to communication about pet obesity with clients.

METHODS

A cross-sectional, questionnaire-based study of pet owners was conducted online between 12 November 2020 and 30 January 2021. The study protocol was approved by the University of Guelph Research Ethics Board (REB#19-08-035).

Questionnaire design

A pet owner questionnaire was developed, containing a total of 35 items, including text entry, multiple choice and Likert-scale questions. Only relevant questions were displayed to each participant based on previously selected responses. Participants who owned more than one pet were asked to respond based on the pet whose name began with the letter nearest the beginning of the alphabet. Following sections one and two of the questionnaire, which collected participant and pet demographic information, respectively, participants were provided images of a cat or dog that corresponded to a body condition score (BCS) of 1–9 (Royal Canin SAS 2020) and asked to select the image that best represented the body shape of their pet. No descriptions accompanied the BCS images. Participants who identified the BCS of their pet as 5 or lower were directed to the end of the questionnaire. Participants who identified their pet's BCS as 6 or greater were shown a message that indicated they had identified their pet as a BCS of greater than 5, corresponding

to an overconditioned body condition and indicating that the pet is overweight or obese. These participants were then directed to an additional section of the questionnaire.

The first component of the additional section was the University of Rhode Island Change Assessment (URICA) questionnaire.²⁸ The URICA consists of 32 items, with eight items for each of four subscales: precontemplation, contemplation, action and maintenance. Items are rated on a five-point Likert scale (1 = strongly disagree; 2 = disagree; 3 = undecided; 4 = agree; 5 = strongly agree). The URICA was developed to measure RTC across a wide range of behaviours,²⁸ and items reference the unspecified 'problem'. The URICA respondent and assessor must be clear on the problem at the time of administration. Here, the URICA was adapted by indicating the owner-identified pet being overweight as the problem.

Following completion of the URICA, participants were asked two final questions to identify their interest in managing their pet's weight as well as their confidence in being able to do so. The questions 'How interested are you in managing the weight of this pet?' and 'How confident are you that you would be able to manage the weight of this pet?' were rated on a scale of 0–10 (0 = not at all and 10 = extremely).

Participant recruitment

Snowball sampling via social media platforms (Facebook, Twitter, Instagram, LinkedIn) was used to recruit pet owner participants. A post including the link to the survey and a statement encouraging sharing of the link was posted to various personal social media pages belonging to research team members and colleagues, as well as public and private pet-oriented group pages. All group pages were based in Canada or the United States and were identified by searching the words pet, dog, cat, canine and feline in the search bar of the platform, and permission to share the study was requested prior to posting. Throughout recruitment, the study aim was advertised as being related to pet weight. To participate in the questionnaire, pet owners must have been at least 18 years of age and a caretaker for a cat or dog. The first page of the questionnaire contained a letter of consent outlining information on the study and rights of research participants. Participants provided implied consent by proceeding with the online questionnaire. There was no incentive for participation in this study. The standard online survey software Qualtrics (Provo, UT, USA) was used to collect questionnaire data.

Questionnaire analysis

Checklist for Reporting Results of Internet E-Surveys (CHERRIES)²⁹ guidelines were consulted to determine completion percentages. Completed questionnaires containing five or fewer missing responses were included in the analysis.

Descriptive statistics were calculated for questionnaire data, including frequencies for categorical variables and mean, median, standard deviation and range for continuous variables. A RTC score was calculated by summing the average subscale scores of the URICA for contemplation, action and maintenance and subtracting the precontemplation average score for each participant.¹⁵ The RTC score can range from -2 to +14, with higher scores indicating higher readiness.¹⁵ This RTC score was then used to classify respondents into previously established SOC groups according to the following criteria: less than 8 corresponded with precontemplation; 8–11 contemplation; and greater than 11 action to maintenance.³⁰

One-way analyses of variance were performed to assess differences between the four SOC identified by the URICA for participants' interest and confidence ratings, respectively. When the analysis of variance was significant, protected Fisher's least significant difference tests were used to examine pairwise significant differences between SOC in relation to participants' interest and confidence ratings. Statistical analysis was performed with SAS software (OnDemand for Academics, SAS Institute 2021, SAS Campus Drive, NC, USA). Significance was set at $p < 0.05$.

RESULTS

A total of 829 pet owner participants proceeded beyond the letter of consent to participate in the online questionnaire, of which 532 (64.2%) completed questionnaires met all inclusion criteria and were included in the final analysis. Participants were predominantly female (94%; 500/532), residents of Canada (71.2%; 379/532) and had a mean age of 38.8 years (SD 14.97; median 35; range 19–82). Pet owner demographics are presented in Table 1. Of these participants, 67.7% (360/532) answered the questionnaire about a dog and 32.3% (172/532) answered about a cat. Pet-related information is presented in Table 2.

Body condition score

Pet owners' identification of their pet's BCS is shown in Table 3. In total, 28.8% (153/532) of pets were identified as having a BCS of greater than 5 on a nine-point scale. By species, 18.6% (67/360) of dogs and 50.0% (86/172) of cats were identified as having a BCS greater than 5.

Readiness and stage of change

Of the participants who identified an overweight or obese pet, 77.8% (119/153) completed the URICA in full, allowing for the calculation of an RTC score. The mean RTC score across all participants was 7.58 (standard deviation [SD] 2.36; median 7.86; range 0.57–12.29), from a possible range of -2 to +14. Over half of the participants (52.1%; 62/119) were identified to be in the precontemplation SOC based on their RTC

TABLE 1 Respondent demographics ($n = 532$)

	<i>n</i> (%)
Gender ($n = 532$)	
Man	20 (3.76)
Woman	500 (93.98)
My gender identity is not listed above	9 (1.69)
Prefer not to answer	3 (0.56)
Country of residence ($n = 532$)	
Canada	379 (71.24)
United States	126 (23.68)
Other	27 (5.08)
Income ($n = 507$)	
<\$20,000	35 (6.90)
\$20,000–34,999	50 (9.86)
\$35,000–49,999	45 (8.88)
\$50,000–74,999	105 (20.71)
\$75,000–99,999	91 (17.95)
\$100,000–149,999	103 (20.32)
>\$150,000	78 (15.38)
Education ($n = 532$)	
Less than high school	1 (0.19)
High school or equivalent	27 (5.08)
Vocational or technical school	12 (2.26)
Some college or university	62 (11.65)
College diploma	70 (13.16)
Bachelor's degree	197 (37.03)
Master's degree	99 (18.61)
Doctoral degree	31 (5.83)
Professional degree	31 (5.83)
Other	2 (0.38)
Age ($n = 523$), mean (SD, median, min–max)	38.80 (14.97, 35, 19–82)
Number of adults in household ($n = 528$)	
1	119 (22.54)
2	297 (56.25)
3	73 (13.83)
4 or more	39 (7.38)
Number of children in household ($n = 524$)	
0	445 (84.92)
1	38 (7.25)
2	27 (5.15)
3	10 (1.91)
4 or more	4 (0.76)

Note: Missing values account for discrepancies in totals.
Abbreviation: SD, Standard deviation.

score. The breakdown of participants into each SOC is presented in Table 4.

Interest and confidence

Of the participants who identified an overweight or obese pet and completed the URICA, 84.0% (100/119)

TABLE 2 Respondents' pet demographics ($n = 532$)

	<i>n</i> (%)
Species ($n = 532$)	
Dog	360 (67.67)
Cat	172 (32.33)
Sex of pet ($n = 530$)	
Male	269 (50.75)
Female	260 (49.06)
Unsure	1 (0.19)
Pet age in years ($n = 530$), mean (SD, median, min–max)	6.13 (4.38, 5, 0.25–21)
Spayed or neutered ($n = 532$)	
Yes	446 (83.83)
No	85 (15.98)
Unsure	1 (0.19)
Primary caretaker ($n = 532$)	
I am the pet's primary caretaker	386 (72.56)
My partner is the pet's primary caretaker	6 (1.13)
My partner and I share responsibility for the pet	118 (22.18)
Another member of the household is the pet's primary caretaker	17 (3.20)
Other	5 (0.94)
How pet is fed ($n = 532$)	
Free-fed (food is always available)	92 (17.29)
Meal-fed (food is only available at certain times)	407 (76.50)
Other	33 (6.20)
Activity level ($n = 531$)	
Very active	47 (8.85)
Moderately active	309 (58.19)
Not very active	175 (32.96)
Where pet spends most of its time ($n = 532$)	
Indoors	418 (78.57)
Outdoors	4 (0.75)
Both indoors and outdoors	110 (20.68)

Note: Missing values account for discrepancies in totals.
Abbreviation: SD, Standard deviation.

rated their interest and confidence in managing their pet's weight. The mean interest score across all SOC was 7.81 (SD 2.351; median 8; range 0–10) and the mean confidence score was 7.35 (SD 2.105; median 8; range 0–10) out of 10. There were no significant differences in mean scores for interest or confidence between respondents who completed the questionnaire for a dog or those who completed it for a cat. Significant differences in interest in managing the pet's weight were observed between SOC ($F_{2,97} = 10.64$, $p < 0.001$). Pairwise comparisons revealed that participants identified as precontemplators had a lower level of interest in pet weight management than contemplators ($t_{97} = -3.67$, $p < 0.001$) and those in action or maintenance ($t_{97} = -3.57$, $p < 0.001$). There was no significant difference in interest between contemplators and those in action or maintenance

TABLE 3 Pet body condition score (BCS) as assessed by owner respondents ($n = 532$) using provided visuals of BCS on a scale of 1–9

BCS	Weight classification	Dog ($n = 360$) n (%)	Cat ($n = 172$) n (%)	Total ($n = 532$) n (%)
1	Underweight	11 (3.1)	0 (0.0)	11 (2.1)
2	Underweight	26 (7.2)	2 (1.2)	28 (5.3)
3	Underweight	60 (16.7)	6 (3.5)	66 (12.4)
4	Ideal weight (dogs only), underweight (cats only)	111 (30.8)	32 (18.6)	143 (26.9)
5	Ideal weight	85 (23.6)	46 (26.7)	131 (24.6)
6	Overweight	43 (11.9)	33 (19.2)	76 (14.3)
7	Overweight	22 (6.1)	35 (20.3)	57 (10.7)
8	Obese	2 (0.6)	12 (7.0)	14 (2.6)
9	Obese	0 (0.0)	6 (3.5)	6 (1.1)
Total >5		67 (18.6)	86 (50.0)	153 (28.8)

($t_{97} = -1.65$, $p = 0.101$). Furthermore, there were no significant differences in confidence ratings between participants identified to be in different SOC ($F_{2,97} = 0.73$, $p = 0.486$). The breakdown of interest and confidence by SOC is presented in Table 5.

DISCUSSION

This study provides preliminary insight into the RTC of pet owners who own an overweight or obese cat or dog. Most participants in this study with a self-reported overweight or obese pet were found to have an attitude towards pet weight management that aligns with the precontemplation SOC, where there is generally little awareness of a reason to change and no present intention of changing. A similarly large group of participants were identified to be in contemplation, suggesting that while they might have been considering change to address a pet's overweight or obesity, they were not yet committed to change. Few participants were indicated to be in the action or maintenance phase of addressing their pet's weight. Distinguishing clients in the early SOC from those in the later stages may be useful to veterinary professionals in determining their approach to communicating with an owner of an overweight or obese pet.

Veterinary professionals may be inclined to label precontemplative clients as 'difficult' or 'resistant' when engaging in pet weight management discussions. Understanding clients' SOC and recognising

when clients are in the early stages may help veterinary professionals consider resistance as a state that can be changed.²³ When clients are ambivalent or unsure about change, they will often voice responses to arguments for change that may appear to be counterarguments against change, yet this is a natural part of the change process.^{21,31} In the precontemplation stage, lecturing, providing unsolicited advice or attempting to create a plan without the client's involvement may work to increase levels of resistance in a veterinary–client interaction.²³ More beneficial for a client at this SOC may be accurate information about obesity-associated health concerns for the pet and an individualised exploration of the client's perception of their pet's weight. Obesity advocates have also suggested frequent weight monitoring for pets of precontemplative clients to increase the chances for clients to express concerns, and to recognise if and when a client may have become more ready to discuss their pet's weight and management.¹⁶ It is important for veterinary professionals to avoid proceeding with a pet weight management plan based on an assumption that all clients are in an action SOC. By pushing for a plan before the client is ready for and committed to change, buy-in and adherence may be low. Working from an assumption that a client is more ready for change than they actually are may increase defensiveness from the client or damage the veterinary professional's relationship with the client. The results of the present study suggest that many clients who own overweight pets may initially present with low RTC, which should be taken into consideration by veterinary professionals. Recognising that most weight-loss interventions are action-oriented, Churchill and Ward⁵ have suggested that several visits may be necessary to establish rapport with the veterinary team before clients with low initial readiness are ready to move to the next stage. Ongoing education and check-ins for these clients are important to raise awareness of pet obesity as a real health concern and to assess when the client may be more open to discussing the topic with the veterinary team.

A particularly interesting result from the present study is the gap between pet owners' interest in managing a pet's weight and their confidence in being able to do so, specifically among participants identified as already being action oriented in addressing their pet's weight status. Confidence relates to the expectation that people have about their ability to change or execute a behaviour.^{32,33} Individuals with high confidence are more likely to persevere when they encounter challenges and maintain optimism about

TABLE 4 Stage of change as determined by readiness to change score calculated from the adapted University of Rhode Island Change Assessment (URICA) questionnaire for 119 pet owners who identified a pet as overweight or obese

	Precontemplation	Contemplation	Action/maintenance
Dog owners ($n = 50$)	27	20	3
Cat owners ($n = 69$)	35	30	4
Total ($n = 119$)	62 (52.1%)	50 (42.0%)	7 (5.9%)

TABLE 5 Stage of change by interest in managing this pet's weight and confidence in being able to manage this pet's weight reported by 100 pet owners who identified a pet as overweight or obese

	Precontemplation (<i>n</i> = 51)	Contemplation (<i>n</i> = 42)	Action/maintenance (<i>n</i> = 7)	Total (<i>n</i> = 100)
	Mean (SD), median, range			
Interest in managing this pet's weight	6.90 (2.67)*,†, 8, 0–10	8.55 (1.48)*, 8.5, 5–10	10 (0)†, 10, 10–10	7.81 (2.35), 8, 0–10
Confidence in being able to manage this pet's weight	7.59 (2.12), 8, 0–10	7.05 (2.23), 7.5, 3–10	7.43 (0.78), 8, 6–8	7.35 (2.10), 8, 0–10

Note. Values that have the same superscripts (* or †) are significantly different at $p < 0.05$.

their ability to reach their goals.³⁴ In human health-care, high confidence levels have been found to be a predictor of successful changes for smoking and alcohol consumption³⁵ and have been suggested to also be important in the outcomes of human weight-loss efforts.³⁶ No pet owner participants who were staged in action or maintenance rated their confidence in being able to manage their pet's weight as higher than 8 out of 10, yet all indicated an interest level of 10 out of 10 for addressing their pet's weight. High interest ratings from this group are to be expected, as clients in action or maintenance would generally be expected to have high commitment to change and higher awareness of obesity as a potential health concern for their pet. The lack of significant differences in participants' confidence ratings between SOC found in the present study suggests that there is an opportunity to further explore how to support a pet owner's confidence in their ability to manage a pet's weight even when they identify in the action or maintenance SOC. This also indicates that, for pet owners with high interest or readiness, there may be opportunities for support from the veterinary team in following through with plans and working to make changes in the home.

Furthermore, every veterinary team member who has client contact has opportunities to promote owner involvement in weight management and influence their commitment to change,⁵ and weight management discussions are an ideal opportunity for practices to employ a team approach. Assisting clients in developing the confidence to address their pet's overweight or obese condition may be best achieved with in-clinic integration of all team members into nutritional and weight management counselling.⁵ Working with clients to establish reasonable expectations and a 'safety net,' or plan for dealing with unforeseen challenges, as well as information about accessing the veterinary team for support, may also help prevent early abandonment of weight management plans.³⁷ A follow-up phone call in the first days following a weight management conversation may provide the veterinary team with an opportunity to identify any immediate client concerns. Following that, in the initial stages of a pet's weight management programme, client follow-up is recommended every 2 weeks.¹³ These points of contact can be used as an opportunity to determine any new client concerns, discuss nonfood-related ways for the owner to feel they are supporting their bond with their pet and explore any obstacles that may be impacting client commitment to the programme.⁷ Finally, quality of life may be

improved by weight loss,³⁸ and in obese dogs, it has been observed that even a modest 5%–10% loss of bodyweight can reduce the impact of osteoarthritis.³⁹ Setting realistic, stepwise goals with clients that target milestones rather than targeting the pet's ideal bodyweight at the start of the programme may help build client confidence, as positive changes may be observed in the pet early on and throughout the gradual weight-loss process. Developing evidence-based best practices is likely to benefit veterinary professionals in supporting clients' confidence in their ability to be successful with pet weight management.

Even when confidence is high, it is important to consider that movement through the SOC is not necessarily linear, and people can return to an earlier SOC at any point in the change process.^{17,40,41} Relapse, or a return to the pre-change behaviour, is to be expected. Even for clients with high levels of readiness, the veterinary team should not anticipate immediate success. By expecting setbacks and working with clients in a nonjudgemental, compassionate manner to manage setbacks as they occur, veterinary professionals may be able to help reduce shame or frustration throughout the pet weight management process. It is also worth acknowledging that the cut points to determine SOC from the RTC score are essentially arbitrary and that in practice the SOC are not necessarily discrete.^{15,26} Viewing them as such can provide a useful framework for the purpose here of understanding pet owners' readiness to address pet obesity; however, it is important that clients' individual circumstances, preferences and perceptions be explored and taken into consideration when veterinary professionals are developing a tailored weight management plan.

Learning to recognise the characteristics or common client comments that align with a specific SOC when discussing pet weight management is one way to quickly determine a client's readiness, and several helpful examples of such client comments, as well as suggested responses for the veterinary team, have been previously outlined.^{5,16} For some behaviours, such as smoking and exercise, staging algorithms exist that can be used to quickly stage a client based on several brief yes or no questions.^{30,42} Other studies have relied on a single question with a four- or five-choice response format to assess SOC.^{36,43,44} If a similar tool were developed for use in veterinary medicine to assess clients' SOC regarding pet obesity, it may assist veterinary professionals with quickly ascertaining the communication approach that may be most effective at engaging a client in a discussion about their pet's

overweight or obese condition. Additionally, time constraints have previously been indicated by veterinarians as a barrier to effective communication in veterinary medicine.^{45,46} Brief staging tools may help to mitigate the time constraints in veterinary practice that have been reported as barriers to addressing obesity,¹¹ and any member of the veterinary team can administer and interpret the results of such tools. Developing algorithmic staging tools that depend on respondents selecting a single response and that can be completed and interpreted quickly may provide veterinary professionals with a clear indication of the clients' current readiness to consider pet weight management and inform both the approach and time commitment the veterinary team should consider when engaging with that client.

Due to the nature of this online questionnaire, pet owner participants in this study were asked to identify their pets' BCS. It was anticipated that many participants would likely underestimate this BCS despite the use of the provided images, which has been observed in prior research.^{47,48} As a result, it is possible that some participants who own an overweight or obese pet were not directed to the URICA. The percentage of pets, particularly dogs, in this study that were identified as overweight or obese is lower than many pet obesity prevalence estimates. Possibly these participants who did not accurately identify their pet as having a BCS greater than 5 would be identified as being in the early SOC if they had completed the URICA. There is also the potential for a social desirability bias in the interest and confidence ratings that could have led to an overestimation of pet owners' interest and confidence in addressing pet obesity; however, an overall mean confidence rating of less than 8 out of 10 indicates that there is still room to support pet owners' confidence in managing their pet's weight across SOC. Interest ratings follow the expected trend, with precontemplators' interest in managing their pet's weight being significantly less than those at later stages. The participants in this study were largely female and limited to pet owners who use social media and therefore may not represent the broader population of pet owners. Further research in a clinical setting, where clients who own overweight pets are given this information about their pet's BCS by a veterinarian, may better capture the nuances of how the presentation of this information impacts client readiness than what was possible to capture in the scope of an online questionnaire. Future studies may also consider investigating factors that affect client readiness and factors that may impact clients' confidence in being able to manage the weight of a pet (e.g., previous pet weight management attempts or experience).

The current study helps to provide early insights into pet owners' RTC regarding managing the weight of an overweight or obese dog or cat. Most participating pet owners who self-identified their pet as overweight or obese appeared to have low levels of RTC, with interest in pet weight management being lower for participants in the earlier SOC. An opportunity exists

for veterinary professionals to assess RTC in practice and to tailor communication according to an individual client's current readiness. Client confidence should also be considered when working to implement a pet weight management plan, regardless of SOC, as higher confidence may improve the success of clients' pet weight-loss efforts, particularly as clients encounter challenges throughout the change process.

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CONFLICT OF INTEREST

Dr. Coe regularly receives research funding, consults for, and receives honoraria from various veterinary organisations and commercial companies. Dr. Coe currently holds the VCA Canada Chair in Relationship-Centred Veterinary Medicine at the OVC, University of Guelph. The authors declare no conflicts of interest.

AUTHOR CONTRIBUTIONS

Katja Sutherland and Jason B. Coe conceived the study. All authors developed the methodology and distributed the survey. Katja Sutherland conducted the data analysis. All authors contributed to the interpretation. Katja Sutherland wrote the first draft of the manuscript, and all authors contributed to the manuscript revisions and approved the submitted version.

DATA AVAILABILITY STATEMENT

Research data are not shared due to privacy or ethical restrictions.

ETHICS STATEMENT

The study protocol was approved by the University of Guelph Research Ethics Board (REB#19-08-035).

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