I wish he'd listen: Client-centered interviewing approaches are associated with higher compliance with behavioral modification advice in pet dog owners

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ABSTRACT

In the UK, over 40,000 dogs are given up annually to shelters or euthanized due to problem behaviors. It may be possible to reduce these numbers through behavior counseling and development of a behavior modification plan (BMP) by a canine professional (CP). However, if the client does not or cannot adhere to the BMP the dog's prospects may be compromised. This study explored the experience of the initial behavior consultation and possible reasons for adhering to (or not) the BMP from the client's perspective. An online survey solicited the opinions of canine behavior clients who had sought professional help in the UK for their dog's unwanted behavior within the last 2 years. Principal Component Analysis of Likert scale statements revealed one significant PC ($P < 0.001$) that explained 57% of the variation in the data and was significantly correlated with BMP compliance ($r = 0.567$, $P < 0.001$). Specifically, believing the plan was right for their dog and having CP support throughout to achieve behavior improvement through the implementation of a mutually agreed BMP were important. Qualitative thematic analysis of free text responses regarding motivation for future client BMP compliance echoed these factors. Conversely, a negative consultation experience was created by CPs adopting an authoritarian or 'telling' approach with their clients for example, making them feel judged. This was associated with a lack of BMP compliance.

Essentially, CPs who involved their clients in BMP development were perceived as creating a positive experience of the initial behavior consultation and as a result were able to promote client BMP adherence and improvement in unwanted behavior improvement. This CP approach, which adopts a nurturing rather than an authoritarian strategy, has been termed Client-Centered Interviewing (CCI). The main thing about CCI is the client is an equal partner in the process. The core conditions are as per Rogers and Egan of empathy, congruence and unconditional positive regard. CCI builds on empathy with the client, avoids inappropriately challenging client beliefs by gently exploring options without being judgemental, clearly explains the likely cause of the behavior and the plan to resolve it, and provides a BMP that is bespoke and flexible. Future research is required to validate the findings, for example through a prospective comparison of Client-Centered Interviewing versus an instructional (authoritarian) approach. Crucially, the impact of Client-Centered Interviewing on canine welfare must also be evaluated.

Introduction

Around 44,000 UK dogs are taken to shelters or euthanized annually owing to behavioral problems (Diesel et al., 2010; Clark et al., 2012; O'.Neill et al., 2013). Compassionate behavior counseling with a canine professional (CP), who recognizes the needs of overwhelmed owners, may help dogs to stay in their homes (Buller and Ballantyne, 2020). Typically, following assessment, a behavior modification plan (BMP) is developed and follow-up support provided (B.S.A.V.A., 2012). However, BMP non-compliance has been implicated in poor canine behavior progress (Takeuchi et al., 2000; Ogata and Dodman, 2011; Ballantyne and Buller, 2015). This is concerning as, ultimately, the client acts as the dog's 'therapist', and if unsuccessful the dog is at risk of poor welfare and/or relinquishment. The reasons for BMP non-

compliance may be nuanced. The term compliance suggests that a BMP may be something that happens *to* rather than is developed *with* the client (Arthur, 2017). It is postulated here that a shift of control away from the client could start at the consultation (not necessarily intentionally), perhaps leading to BMP resistance.

In human medicine and therapies relating to human behavior change such as Cognitive Behavior and Brief Therapy, it has long been recognized that patient/client-clinician collaboration is key to therapy compliance and that an authoritarian approach is less successful (Duncan et al., 1996; Osterberg and Blaschke, 2005; Martin et al., 2005). Patient-centered communication and motivational interviewing (Hashim, 2017; Miller and Moyers, 2017) utilize open questioning and active listening. The purpose is to evoke motivation for behavior change through involvement in therapy planning. This nurturing approach, which confers a degree of autonomy and control, has effectively increased patient adherence in mental health therapy (Perkins, 2002). Turning to the development of a useful canine BMP, accurate client information is required (Hunthausen, 1994). Such information gathering was found to be facilitated through relaxed and open interviewing through which the client understands the entire therapeutic process and the reasons for their pet's behavior (Danneman and Chodrow, 1982; Voith and Borchelt, 1985). For example, allowing clients to develop feline environmental enrichment ideas (rather than telling them what to do) correlated with successful behavior prognosis (Herron and Buffington, 2012). Furthermore, a survey assessing client opinion of CP performance emphasized the importance of communication skills (Lamb et al., 2018). Following univariate analysis, three parameters were significant regarding the likelihood of advice adherence; trust in the CP, avoiding long-term canine distress and the advice being applied unsuccessfully previously. To develop this work further, a role for the conceptual 'strict authoritarian' versus 'nurturing' parent model (Lakoff, 2014) in the CP-client relationship (and BMP adherence) were explored. In our study, a CP adopting a 'telling' approach in the initial behavior consultation would be perceived as instructional/authoritarian, while a collaborative CP would be considered authoritative.

In summary, a knowledge gap exists regarding the reasons for canine BMP non-compliance from the client's perspective. This study aimed to investigate the prevalence and influence of a nurturing 'client-centered interviewing' (CCI) approach. The following hypothesis was tested: in clients seeking behavior counseling for their dog, CCI (compared to instructional/authoritarian advice), is associated with a positive experience of the initial behavior consultation and compliance with the prescribed BMP. The findings of this study could provide CPs with indicators of how to improve their counseling skills to ultimately benefit the animals under their care.

Materials and methods

Questionnaire

A questionnaire exploring the client experience of the initial behavior consultation and their subsequent compliance with the recommended behavior modification plan was conducted. Here, a targeted sub-section of that data is presented to address the aim of this study. The first eight questions covered demographics. The following seven questions were comprised of a total of 31 Likert scale statement responses. These statements related to the client experience of the behavior consultation, their willingness to use the training methods recommended and the client's own assessment of their adherence to the Behavior Modification Plan. The final question took the format of a free text answer (Appendix 1). All responses were collected using Online Surveys (JISC, Oxford, UK). A pilot survey of six volunteers (four lay people, one dog trainer and one veterinarian) was conducted. Their responses were used to refine

question clarity and to assess completion time (<20 min for the entire survey).

Participants

Clients (anonymous survey participants) were drawn from a convenience sample of UK adults, aged 18 and above, who had sought paid professional help for their dog's unwanted behavior within the last 2 years. Dogs with behaviors relating to medical issues or requiring behavioral medication or supplements were not eligible to participate in the study.

Canine professionals

For this study the term canine professionals (CPs) include veterinarians (any), dog trainers (who plan and manage the general training of dogs for example, in group classes) and behaviorists (who are specifically trained to work with undesirable, problematic and/or dangerous behavior) (Daniels et al., 2023).

Data collection

The survey URL was shared on multiple Facebook pages, including the author's own (JTD). Data were collected from 16th December 2020 until 11th February 2021.

Data preparation

Data were exported from the JISC Online Survey tool into Excel. Three of 238 clients were not UK based so were excluded from the study. One further participant indicated that they had not consulted a CP. However, this was assumed to be a mistake, as a free text response question demonstrated that a consultation had occurred, hence zero was changed to 'one' for analysis. It was possible to re-assign all CP types identified by clients as 'other' to one of the named based on their free text response. Likert data extracted from the JISC survey tool were attributed numerical scores; 5 = strongly agree, 4 = agree, 3 = neutral, 2 = disagree and 1 = strongly disagree. Some statements were reverse scored as indicated in Appendix 1 by an *.

Data analysis and statistics

Principal Component Analysis (PCA) (Bernaards and Jenrich, 2015) was conducted using PC-ORD (Wild Blueberry LLC) on Likert scale statements representing client perception of the behavior consultation. The purpose was to simplify the data while identifying any trends (positive or negative experiences). Five survey responses were removed because of missing data. The final PCA was run on 230 survey responses and 30 statements. Significant principal components (PC) were determined based on breakpoint analysis and randomization tests (Peres-Neto et al., 2005). The threshold for loading score interpretation was values above 0.4 (Streiner, 1994). Significant PCs were taken forward into either a General Linear model (GLM) or a Mann-Whitney, depending on the distribution of the significant PCs, to determine any associations with CP type (Behaviorist and Trainer) or consultation method (remote access or Face-to-Face). Veterinarians (n = 4) were removed from the GLM analysis as there was insufficient data. Spearman correlation was performed on significant PCs and whether the client complied with the BMP. Unless stated otherwise, Minitab (version 20) was used for all statistical analyses. A level of $P < 0.05$ was accepted as significant.

Qualitative thematic analysis

To drill down further into the factors that would persuade clients to adhere to a BMP in the future, a free text question was asked. The

data were minimally cleaned for readability and confidentiality using Word. Typographical errors were corrected and references to named individuals replaced with an 'X'. To identify categories and themes indicating factors important to clients for future BMP compliance, thematic analysis (Braun and Clarke, 2006) was applied manually by the author using Excel. During first cycle coding, in vivo sub-codes (phrases) were extracted from the clients' own words (Saldana, 2016). These were used in second cycle coding to derive main codes (sub-code content descriptors), and finally over-arching themes (response patterns) (Holland et al., 2021). The number of occasions an in vivo code appeared within each category (*n*) was used to calculate the proportion (%) of the total responses each category represented. (As many participant responses included more than one category, percentages totaled > 100). To avoid interpretation bias by the author (JTD), thematic analysis was conducted before statistical analysis was applied to survey data.

Results

Demographics

A complete set of demographics for this survey has been published (Daniels et al., 2023). Briefly, out of 230 eligible survey participants, 201 (87.39%) were female pet dog owners. The CP types consulted were 142 dog trainers (accounting for 61.73% of the total survey responses), 84 behaviorists (36.52%) and four veterinarians (1.74%). Regarding the mode of behavior consultation, 131 trainers, 67 behaviorists and three veterinarians conducted face-to-face consultations, while 11 trainers, 17 behaviorists and one veterinarian held remote consultations.

The consultation

Only one significant PC (PC1) was identified ($P < 0.001$). This accounted for 57.1% of the total variance within the data set. Within PC1, two opposing components of the 'Client and dog experience' were identified (Figure 1). The higher the positive or negative value the better or worse the experience of the consultation respectively. Statements related to the client (and dog) having had a positive experience of the initial behavior consultation (positive loading values) were attributed to CCI. The top CCI statements were 'I believed the plan represented the right approach for my dog', 'the canine professional was supportive throughout the behavior consultation' and 'the canine professional and I were in agreement about what to include in the treatment plan'. Conversely, statements related to a negative experience were attributed to an instructional/authoritarian approach (negative loading values). The top authoritarian statements were 'I felt the canine professional was judging me personally on the answers I gave to their questions', 'I felt the canine professional was judging me personally on how I trained my dog' and 'the treatment plan suggested measures I did not agree with'. Full or partial client compliance with the BMP was positively correlated with PC1 (Full compliance: $r = 0.567$, $P < 0.001$; Partial compliance: $r = 0.373$, $P < 0.001$) (Figure 2).

GLM on PC1 scores and the type of CP (Behaviorist vs. Trainer) leading the consultation, or the method of consultation (remote vs. face-to-face) revealed non-normal distribution of residuals. As a result, a Mann Whitney was performed on type of CP and method of consultation separately. The median PC1 for Face-to-Face consultations was higher indicating greater compliance when the initial consultation was face-to-face for both behaviorists and trainers (Figure 3) but the difference was not statistically significant (type of CP: $P = 0.275$; method of consultation: $P = 0.569$).

Qualitative themes

Of the eligible clients, 227 responded to the question asking about factors important to them for future BMP adherence (Appendix 2). Eight had nothing further to add to their survey responses. Following qualitative thematic analysis (Table 1), four themes emerged as being important:

1. **Having a favorable opinion of the CP.** The priority was achievement of results and following up post consultation. Empathy, trustworthiness, avoiding blame or judgment, believing and listening to the client, providing practical support and evidence of approach efficacy were also valued.
2. **Understanding the behavior problem and the plan to resolve it.** It was important to clients that they, and the CP, understood the reasons for the dog's unwanted behavior, and that the BMP made sense to the client.
3. **Sharing similar attitudes and beliefs as the CP.** Regardless of the type of training methods recommended, it was important to clients that they agreed with them to implement them. Concern for the dog's welfare was also notable.
4. **Having a bespoke and flexible plan.** Tailoring an incremental plan to the individual dog and client lifestyle was appealing to clients. For some people, finding time for BMP implementation was challenging.

Examples of the in vivo sub-codes used to generate the main codes are illustrated in the table. The number of times each main code was applied to the survey response data is represented by '*n*'. The proportion, expressed as a percentage (%), of responses coded to each main code is also shown.

Discussion

Introduction

This survey indicated that the dynamics of the CP-client relationship influences the client's experience (positive or negative) of the initial behavior consultation and the client's likelihood to adhere to the CP's BMP. Favorable client experiences, and BMP compliance, were positively correlated with the concept of CCI. Here, CPs adopted a nurturing and authoritative approach toward their clients (and their dogs) and involved the client in the development of the BMP rather than simply telling them what to do. However, since self-reported compliance is difficult to measure, and is in general susceptible to over reporting (Vermiere et al., 2001; Casey and Bradshaw, 2008), further studies will be required to quantitatively explore the relationship between CCI and BMP adherence. Unsurprisingly, the type of training methods recommended in the BMP provoked strong survey opinions. This suggested that CP-client philosophical congruence/mismatch is likely to influence client experience of the consultation and BMP adherence. While this study captured client opinions of different CP types across the UK it cannot be generalized owing to the self-selected nature of survey participation. Furthermore, this survey did not specifically explore whether clients had pre-conceived ideas about training method preference or/and or whether these ideas changed because of the initial consultation. Nevertheless, it is possible that the way training methods are proposed can influence whether (or not) they are adopted. Hence, this research does support and extend beyond previous findings of client opinion of behavior modification conducted in a single UK clinic (Lamb et al., 2018). Furthermore, the current data is in line with research on human behavior change in other contexts, in both initiating and sustaining that change. The authors propose that CCI provides a framework and recommendations for continued
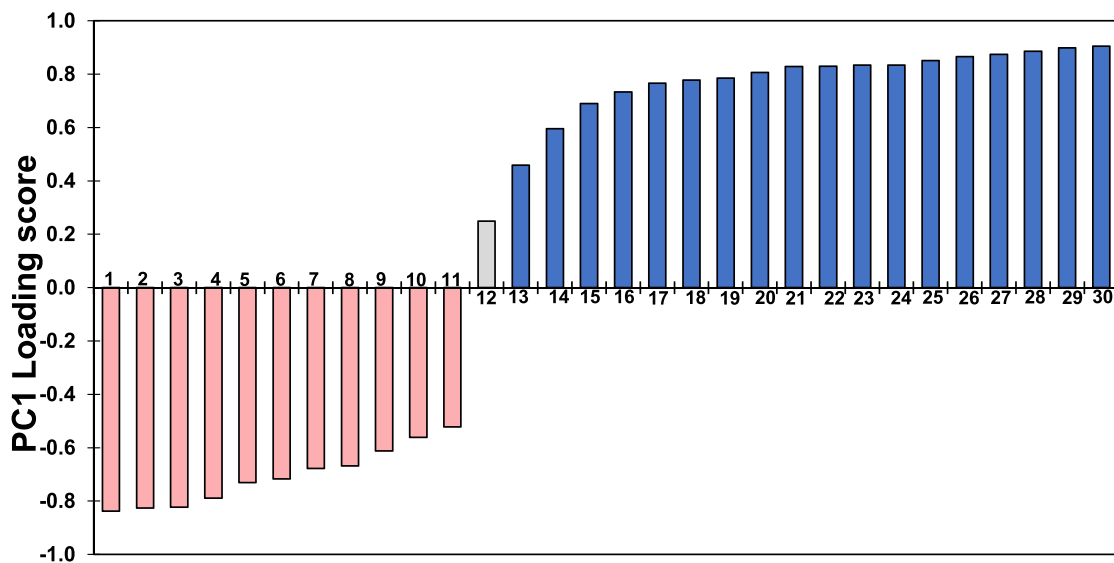
Key	Abbreviated answer	Key	Abbreviated answer
1	Felt my answers were judged by CP	13	Behavior severe I complied with BMP
2	Felt my training was judged by CP	14	I was able to give full answers
3	I disagreed with BMP	15	I made suggestions for the BMP
4	CP was confrontational	16	CP provided follow up
5	I disagreed so missed out parts of BMP	17	I trusted the CP
6	Training contradicted my beliefs	18	I could ask questions
7	I didn't believe BMP would work	19	CP showed concern for my dog
8	Missed BMP parts as my dog became stressed	20	CP listened to me
9	Found myself giving lots of short answers	21	My dog had a good experience
10	Felt obliged to follow methods	22	CP understood my dog
11	Had already tried methods (and failed)	23	My dog's behavior improved
12	My views of dog behavior were challenged	24	CP was flexible
		25	I was happy with training methods
		26	I could question CP advice
		27	Involved me in BMP planning
		28	CP and I agreed on the plan
		29	CP was supportive
		30	The BMP was right for my dog

Figure 1. Loading scores. Loading scores for the first Principal Component (PC1). Scores are shown from lowest to highest with the corresponding question (Q1-Q30) along the x-axis. Bars for loading scores were colored if they were greater than 0.40. Red bars are negative loading scores and blue bars are positive loading scores. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

improvement of CP best practice in canine behavior modification from the perspective of the client, an important and under-considered view in the literature to date.

Demographics

To focus specifically on CP-client interactions, participants with dogs requiring behavioral medication or behavior-related food supplements were excluded. The use of canine psychoactive medication can cause client concerns about sedation and personality changes (van Haaften et al., 2019). Furthermore, psychoactive medication use has been shown to correlate with reduced BMP compliance (Mills et al., 2003). The inclusion of dogs undergoing such treatment (with potentially more severe symptoms) could have confounded the

results reported here irrespective of the conduct of consultation process. Interpretation of the survey was limited to mainly female client opinion, perhaps reflecting the predominance of females in dog training class attendance (Gabrielsen, 2017) and possible willingness to complete a dog behavior-related survey. Interestingly, the CP gender was more balanced (Daniels et al., 2023). Future studies could explore any influence of gender upon the likely use of CCI.

Consultation

Turning to the initial behavior consultation, the client/dog experience (PC1) varied. For a positive consultation experience, believing the treatment was the right approach for their dog, having a supportive CP and ultimately achieving behavior improvement
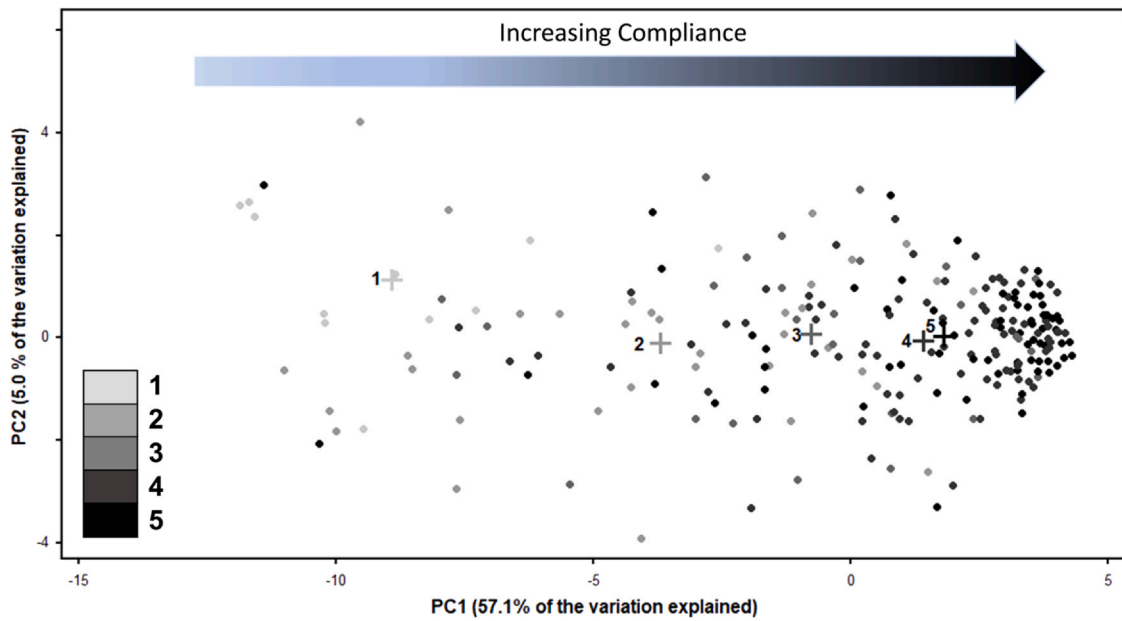
Figure 2. Principal Component Analysis. Plot of Principal Component (PC) 1 PC1 and PC2 with data color coded based on the client response to the statement about full compliance where 5 = completely agree and 1 = completely disagree. PC1 explains 57.1% of the variation in the data and represents increasing compliance. (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

through a mutually agreed plan was important. Furthermore, this positive experience exemplified the concept of a CP-driven CCI approach where clients felt included in the development of the BMP, the CP allowed them to question their advice and showed concern for the dog. In turn, a CCI approach was positively correlated with BMP adherence. These results corroborated previous findings in a single clinic indicating CP communication as a key component encouraging client canine BMP compliance (Lamb et al., 2018). Moreover, through asking different yet complementary questions, this study extends the previous findings through the engagement of a UK-wide client population to reflect broader practice. However, this survey lacked the recommended moderation of CP-assessed client BMP compliance to validate the client's perception of their adherence (Lamb et al., 2018). Ideally, the CP should not assess the compliance of their own clients. Compliance should be evaluated by an independent CP to avoid potential bias such as focusing on specific cases of concern or interest. Nevertheless, qualitative predictors of canine BMP compliance were identified which shared similarities with a clinician's ability to encourage human medication adherence or behavior change adherence (Osterberg and Blaschke, 2005;
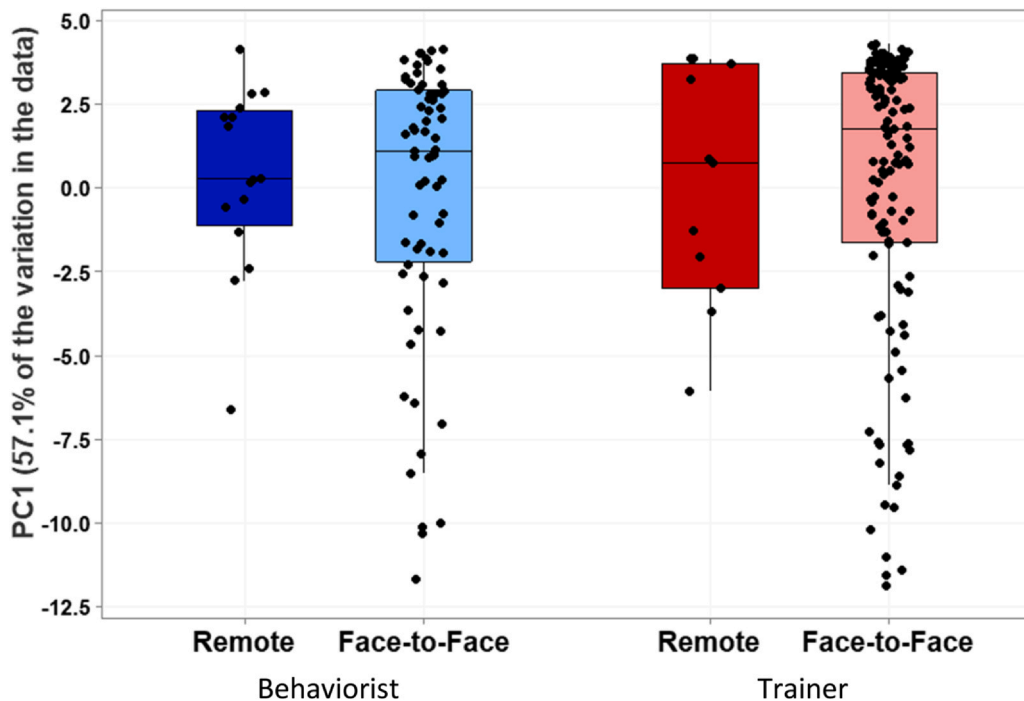

Figure 3. General Linear Model Analysis. GLM on PC1 scores and the type of CP (Behaviorist vs. Trainer) leading the consultation, or the method of consultation (remote vs. face-to-face) revealed no statistically significant differences in PC1 scores for type of CP: $P = 0.275$ or method of consultation: $P = 0.569$.

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Table 1
Major themes and codes identified from direct quotes collected in the survey.

Themes	Codes	Direct survey participant *in vivo* sub-code examples	n	%
Having a favorable opinion of the CP	Achieving results	Continued improvement / Success and a well-balanced dog / Real life results / Every little achievement	55	24.2
	Following up	Weekly updates/check in / Be there to help me to know where I'm going wrong / Ongoing support from behaviorist / I would have loved some more follow-up advice	31	13.7
	Trusting CP	Trust in the professional / Using a trainer that I trust / Trusting the behavior adviser / I fully trusted my behaviorist; she was kind and made me feel safe	13	5.7
	Providing evidence	Seeing results from previous clients / Evidence / Proof it works / Proven methods	5	3.5
	No blaming or judging	Consultation rather than feeling like I was judged / We need supportive, non-judgemental, science and evidence-based information / If the professional was able to help adjust the plan in areas that just aren't working– no matter how much I said that I wasn't seeing an improvement I was told to continue the same things, and then blamed for not doing it correctly / Helpful advice and no judgment	7	3.1
	Listening to client	I wish he'd listened more. I was struggling to get X to eat each day and I showed him my cupboard and fridge with about 20 bags of opened dog foods, which he hadn't eaten. All he'd written on the plan was. make him love food but I didn't receive any strategies for that. I felt lost / Someone who cared about what the owner says / To be listened to and our prior work be considered	7	3.1
	Believing client	Believing clients when they say it isn't working / Not dismissing things that are said	2	0.9
	Costing less	Be cheaper couldn't afford to keep it up	1	0.4
Understanding the behavior problem and the plan to resolve it	Understanding BMP	Something that makes sense and works / Understanding why the methods used work / If the methods were fully explained / That it made sense to me	18	7.9
	Understanding behavior (client)	Understanding why my dog offers the behaviors / A clear explanation of why the dog does the behavior / Understanding why he does what he does / To fully understand the reasons behind my dog behaving as she does	17	7.5
	Understanding dog (CP)	Know that the trainer understood my dog / If they could understand the breed / The professional explaining why my dog acts the way they do, how they recommend fixing it but importantly WHY their suggestions will work / If I knew the trainer fully understood my dog's needs and behaviors	11	4.8
Sharing similar attitudes and beliefs as the CP	Agreeing with methods	Methods I agree with / That the plan aligned with my beliefs / So long as it didn't go against my ethics / Force-free methods / A balanced trainer / Balanced dog training all the way / I would only agree to treatment plans that did not suggest I correct or harm my dog / E-collar training / If it was kind, reward based, and didn't encourage me to be at all physically/verbally unkind to my dog / In the future I will look for balanced trainers and not force free / Positive reward-based approach / Confidence that the behaviorist is a force-free, reward-based trainer / Knowing that I had a balanced trainer and not a "positive only" fraud / Balanced training not misrepresented biscuit pushing / A method that doesn't involve jabbing the heel of a shoe in the dog's ribs	61	26.9
	Concern for dog welfare	I would follow a plan if it was kind and considerate to my dog / Improved quality of life for my dog / For her to be less anxious / Having it be good for the well-being of my dog	30	13.2
Having a bespoke and flexible plan	Incrementing BMP	Keeping it simple / Simple and clear, written down / Clear, easy to follow guidelines / Simple, clear steps with increases in difficulty as improvement noticed	16	26.9
	Tailoring the BMP	Ability to fit in around my life / One that is very bespoke to my personal situation / Ideally done in a way that incorporates stuff that I already do with my dog on a day-to-day basis / Changing the plan when there's no evidence of improvement	24	10.6
	Finding time	Often, it's having the time, occasionally I would miss some of the training / The only issue with 100% adherence to the plan was time	6	2.0

Hofmann et al., 2012). For example, listening to a patient's wishes and concerns, and being willing to consider alternative treatment regimens where the patient found compliance difficult. Furthermore, eliciting their agenda, involving patients in decision-making, showing empathy and understanding beliefs and attitudes has been found to promote concordance and treatment adherence (Martin et al., 2005; Hashim, 2017). Unsurprisingly, these human clinician qualities resonate with animal practitioners adopting CCI practices, as it is the human whose behavior they are working to change and sustain in order to change the animal's behavior. For example, allowing feline behavior clients to choose from a selection of enrichment options for their cat, rather than telling them what and how to deliver it, encouraged clients to make changes that improved their cat's behavior (Herron and Buffington, 2012).

In contrast, a negative consultation experience was associated with the CP taking an authoritarian approach. Here, clients felt judged and unable to provide full answers. Furthermore, the CP was confrontational if the client disagreed with them. A lack of client BMP adherence was unsurprising given previous research showing that a therapist 'teach and confront' approach with mothers experiencing child management problems immediately prompted non-compliance with the therapy program (Patterson and Forgatch, 1985). Furthermore, some clients reported not committing to the BMP owing to concerns for their dog's welfare; however, others felt obliged to follow it. This may be the result of an imbalance of power where the client is criticized by the CP for being ineffective and therefore conforms to achieve their approval (Arthur, 2017). This of course could have negative ramifications for the dog depending on the training methods being used. Hence, further work is required to assess authoritarian CP approach impact.

Other factors shown to influence BMP compliance include behavior severity which may motivate clients to act. Since the worst behaviors at baseline have the greatest potential for improvement (Powell et al., 2021), small achievements may provide the client with encouragement to continue with the BMP. Finally, client frustration with previously unsuccessfully tried methods corroborated previous findings (Lamb et al., 2018). Here, frustration was also associated with a challenge to the client's view of the cause of their dog's unwanted behavior. This could be because of a poor consultation experience overall (CCI not adopted) or due to the fact that humans are subject to confirmation bias, that is they may seek alternative evidence to support their existing views (Gregg et al., 2017). Furthermore, if beliefs are inappropriately challenged, they can become stronger (Martin et al., 2005; Rao et al., 2009). Hence, if client's attitudes and beliefs are incongruent with those of the CP, this could impede the client's intention to implement the BMP. Therefore, taking a 'nudging' approach to changing client attitudes, beliefs and behavior, where decision-making is subtly influenced by a choice architecture, may positively enhance BMP compliance by avoiding CP-client conflict. This concept has been explored through the provision of animal welfare information nudging motivated consumers toward more ethical food supply choices (Vigors, 2018).

On balance, CCI appears to promote a positive consultation experience and BMP compliance. However, clients were not asked for how long they had been complying at the time of the survey. As adherence could wane with time, further research is required to see if a sustained CCI follow-up approach would be beneficial. Regardless, all clients are individual and finding the right balance may be difficult. In human psychotherapy for example, the same therapist behaviors may be considered as helpful or hindering depending on the client's perspective (Swift et al., 2017). Hence, CP self-reflection is valuable. No significant difference between CP groups was found in occurrence of CCI adoption. This was encouraging as CCI skills are essential to good teaching and coaching of another human to ensure behavior change in either CP role.

Since this study occurred during the COVID-19 pandemic, a proportion of the behavior consultations evaluated were conducted remotely. The sample size was relatively small (12.34% of respondents), so it is difficult to draw firm conclusions; however, no significant difference was found in the PC1 scores for remote versus face-to-face consultations. Remote consultations are not new and may be appropriate for some behaviors; for example, separation-related problems (Cottam et al., 2008). However, the prevalence of remote consultations, and client perception of their value, remains to be determined beyond the COVID-19 pandemic.

Behavior modification plan

While most clients reported improvement in their dog's behavior after following the BMP to some extent, improvement was not quantified. This was an important limitation of the present study in assessing the effectiveness of CCI in the CP-client partnership. Furthermore, there is ongoing debate (beyond the scope of our research) around the efficacy and appropriateness of reward-based versus balanced dog training methods. To date, this dispute in the literature has mainly focused on CP opinions (Todd, 2018) with scientific evidence based on tested hypotheses lacking. Further exploration of why dog guardians/owners chose the training methods they do is relevant to interpretation of the survey data as client-CP philosophical mismatch is unlikely to promote BMP adherence unless the CP can be very persuasive, and this can be the case even with a CCI approach (McBride, 2016).

Future adherence

When clients were asked what would encourage them to adhere to a canine BMP in the future, thematic analysis of the free text responses broadly corroborated the outcomes of the PCA. Here, behavior improvement, understanding the problem and agreeing with the methods recommended in a tailored, flexible, and incremental plan were prominent. Furthermore, having a favorable opinion of the CP corresponded with not feeling blamed or judged, a feature of CCI. This resonates with the World Health Organization's view that human medication compliance is complex and not the sole responsibility of the patient. Clinician facilitation of a blame-free discussion and treatment regimen flexibility are important for enhancing medical compliance (Brown and Bussell, 2011). Returning to the canine behavior survey, being listened to exemplified by 'I wish he'd listened' and being believed that things are not working was also important to clients. Also, receiving CP follow-up to help achieve results was frequently mentioned. It has previously been shown in clients seeking help for dogs with fear-related aggression that structured clinician-initiated (rather than client initiated) follow-up was perceived by clients to correlate with behavior improvement, and continuation of clinician engagement if required (Radosta-Huntley et al., 2007). This research and our own illustrate the importance of the client's perspective in maintaining CP and BMP engagement, which could be facilitated by CCI.

The qualitative text also agreed with previous findings that clients need simple BMP instructions that make sense to them (Casey and Bradshaw, 2008; Lamb et al., 2018). For example, five or fewer instructions have been recommended to maximize BMP adherence for separation-related problems (Sargisson, 2014). Furthermore, realistic expectations of behavior prognosis should be honestly explained at any individual stage of the BMP process, another factor previously linked to BMP compliance (Overall and Dunham, 2002). A key take-home message for BMP adherence from this literature and the current study is the requirement of the CP to deliver small, incremental and achievable goals for the client and their dog.

Sharing similar attitudes and beliefs as the CP, especially in training method choice and dog welfare concern, were highlighted
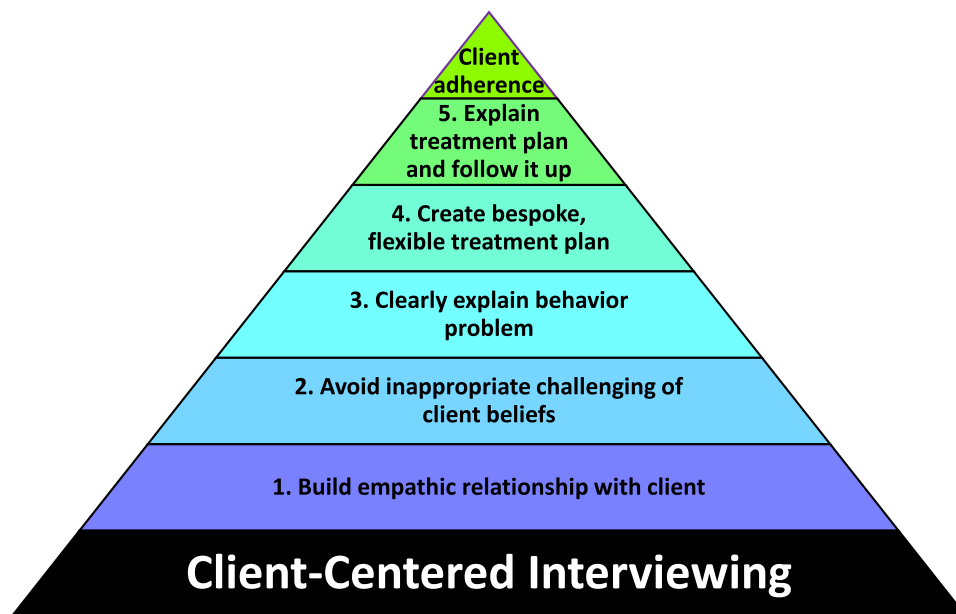
Figure 4. The Canine Professional's Pyramid. The pyramid illustrates the fundamental principles of CCI underpinning a canine behavior consultation and likely client adherence to a behavior modification plan.

as being important for following a future BMP. Again, the controversy regarding the use of reward-based versus 'balanced' training was evident in some client responses. Further and more in-depth research such as client interviews would be required to explore which methods (if any) clients perceived to be non-welfare friendly.

The survey has indicated that CP-client concordance is important for client BMP adherence. This may be especially true for clients experiencing difficulty living with their dog's behavior (Buller and Ballantyne, 2020). However, CP-client philosophical mismatch can occur. The adoption of CCI may be a useful approach to avoid conflict. The Canine Professional's Pyramid (Figure 4) illustrates the premise of Client-Centered Interviewing and the key building blocks, as defined in this survey, toward client satisfaction and behavior modification plan adherence. While this paper has only considered clients seeking help for problems with their dogs, the Client-Centered Interviewing approach is appropriate for trainers and behaviorists regardless of the species owned. It is the human that is the species of concern!

Study limitations

Further study limitations beyond those already discussed need to be considered in the interpretation of the data. Internet-based surveys offer participant convenience, minimal researcher financial and time costs, and can be targeted to relevant populations through social media (Rea and Parker, 2014). However, the findings may not represent the wider canine behavior client population. For example, those not active on social media (Facebook) were excluded in this study. Furthermore, study reach was limited to the author's (JTD) Facebook page and those who saw it and chose to share it. This could have led to a biased sample population. That said, the survey was shared on various Facebook pages including some with views opposing those of the authors on the use of punitive training methods. Also, individuals insufficiently motivated to participate yet holding valuable opinions (positive and negative) for informing CP best practice could have been missed, compromising the generalizability of the results. Nevertheless, web-based studies can be comparable to traditional recruitment routes (e.g. newspaper advertisements)

(Gosling and Vazire, 2004). Moreover, the present survey reached participants employing various UK-based CPs.

Conclusion

Unwanted canine behaviors can cause seemingly unresolvable problems for dogs and their human families resulting in the dog's relinquishment to a shelter or even euthanasia. For other dogs, continuing to live with the unwanted behavior in their own home may have a negative effect on the well-being of everyone involved. However, with the support of a CP positive behavior change may be possible. Furthermore, nurturing CPs (trainers and behaviorists working with any species) who involve clients in BMP development create a positive experience at the initial behavior consultation and are likely to promote client BMP adherence. Hence, the null hypothesis – (in clients seeking behavior counseling for their dog, CCI (compared to instructional/authoritarian advice), is not associated with a positive experience of the initial behavior consultation and compliance with the prescribed BMP) – of the study was rejected. This CP nurturing and authoritative approach is rooted in Client-Centered Interviewing techniques used in other fields relating to human behavior change. Future research is required to explore the effect of CCI on canine welfare, especially if CCI is used to persuade the use of punitive rather than canine-centric welfare-compatible training methods.

CRediT authorship contribution statement

The idea for the paper was conceived by JTD. The experiments were designed by JTD, DB and SB. The experiments were performed by JTD. The data were analyzed by JTD and MCT.
The paper was written by JTD, DB, MCT and SB.

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Ethical approval

Ethical approval (HERC_632_20) was obtained from the University of Edinburgh Human Ethical Review Committee. Since the survey could evoke participant memories of sadness, guilt or regret with respect to their dog's behavioral problems, the survey followed the do no harm principles of the British Psychological Society (B.P.S., 2014). A comprehensive study explanation and links to support sources were provided (A.B.T.C., 2020; I.C.A.N., 2021). Informed consent was obtained, and no identifiable data were collected. Data will be securely stored at the UoE for up to 10 years post-publication. The study is General Data Protection Regulation 2016/679 compliant.

Conflict of interest statement

The authors have no competing interests to declare.

Appendix A. Supporting information

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.jveb.2023.03.003.

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