Canine Research

What is important in canine-assisted intervention teams? An investigation of canine-assisted intervention program online screening tools

Elizabeth Kjellstrand Hartwig [a,*], John-Tyler Binfet [b]

[a] Department of Counseling, Leadership, Adult Education, and School Psychology, Texas State University, San Marcos, Texas, USA
[b] University of British Columbia, Faculty of Education, Okanagan Campus, Kelowna, British Columbia, Canada

ABSTRACT

The purpose of this study was to conduct an investigation of online information and criteria for potential canine-assisted intervention (CAI) teams to better understand current standards set by CAI programs. The field of animal-assisted interventions is burgeoning with CAI programs having moved beyond canine intervention teams visiting clients in a hospital setting to teams providing support to a range of clients in a variety of settings. In response to this surge in popularity of CAI programs, there is a need to better understand how both handlers and canines are deemed suitable for CAI work. The aim of this study was to investigate published online material for volunteer handlers and their canines as a means of identifying commonly sought information, screening criteria, and canine skills assessed across agencies. Over 320 programs were identified and 64 programs were randomly chosen to be coded for the analysis. A frequency distribution was used to identify most and least frequently occurring screening information, criteria, and assessed canine skills presented by CAI programs. Results indicated that the most common information requested of potential teams was basic information (e.g., human and canine name, canine breed), and the most frequently required criteria for potential teams included the team evaluation, canine age, and vaccine status. Our outcomes also identified the most commonly listed canine skills that are assessed in a team evaluation: accepting a friendly stranger, down, sit, and stay on cue, and reaction to a neutral dog. We found that requirements for handlers, such as handler skills, previous training, background checks, and ongoing monitoring, were lacking. Based on these findings, the authors recommend best practices for CAI program online screening. The findings from this study contribute to the emerging literature on CAI program screening procedures and hold implications for research involving CAI teams.

Introduction

The field of animal-assisted interventions (AAI) and in particular, canine-assisted interventions (CAI), is flourishing. CAI is a form of AAI in which a trained volunteer handler and canine team are incorporated into a treatment process to promote wellness in humans. CAIs can include canine-assisted activities (i.e., services provided by volunteer teams), canine-assisted therapy (i.e., goal-directed services provided by service professionals, such as

physical or occupational therapists), and canine-assisted counseling (i.e., goal-directed services provided by mental health practitioners). Although there are numerous studies assessing the effects of AAIs, the evidence base of CAI is still developing. The once common practice of one community volunteer handler and canine team visiting a health-impaired patient in a hospital setting has expanded to see a variety of therapy animals working with handlers to support the well-being of an array of clients across varied settings. For example, therapy canines now provide support for reluctant readers in elementary schools (Brelsford et al., 2017; Lenihan et al., 2016; Sorin et al., 2015), adolescents in counseling settings (Hartwig, 2017) on university campuses to reduce stress (Barker et al., 2017; Binfet, 2017; Daltry & Mehr, 2015) and homesickness (Binfet & Passmore, 2016), support witnesses giving

* Address for reprint requests and correspondence: Elizabeth Kjellstrand Hartwig, Department of Counseling, Leadership, Adult Education, and School Psychology, Texas State University, 601 University Drive, San Marcos, Texas 78666. Tel: 512-245-3757; Fax: 512-245-8872.
E-mail address: ekk6@txstate.edu (E.K. Hartwig).

testimony in court (courthousedogs.org), and reduce travelers' stress in airports (USA Today, 2014). Accompanying this surge in interest in CAI is a corresponding body of empirical literature attesting to the benefits that therapy animals provide to individual well-being (see Fine, 2015 for a review). Even brief interventions with canines (i.e., comprised of visits as short as 5 to 10 minutes) can result in significant reductions in participants' stress (Barker et al., 2016; Crossman and Kazdin 2015).

In response to the popularity of canine intervention programs, a plethora of organizations have arisen to offer localized CAI services. On college and university campuses alone, Crossman and Kazdin (2015) identified over 925 canine intervention and visitation programs. Typically, these organizations are not-for-profit and run by volunteers with the mandate of facilitating access to CAI teams for vulnerable populations across varied settings. In effect, these organizations assess canines to support public well-being. Such groups are trusted to evaluate the canine's behavioral and personality profiles (Taylor & Mills, 2006), oftentimes relying on measures with potentially questionable psychometric properties (Rayment et al., 2015; Serpell & Hsu, 2001; Tomkins et al., 2011). Further concerns have been raised around the qualifications or expertise of the personnel in charge of such assessments. In an evaluation of CAI team assessments in university and community settings, researchers suggest, "In effect, laypersons (with potentially little or no formal training) in charge of assessment within their respective organization, are responsible for the administration, scoring, and interpretation of these measures" (Binfet & Struik, 2018, p. 8).

What is evident and will be illustrated by the present study is that there is great variability in the information provided to potential handlers about CAI programs and in initial screening processes for potential CAI teams to participate in community initiatives that support community well-being. Some of these organizations rely on national screening standards to select handler and canine participants (e.g., Pet Partners), whereas others use independently generated criteria. As argued by Fine et al. (2015), standards of practice need to be developed and identified to advance the field of AAI. Our hope is that our review of CAI program information and screening procedures across North American CAI programs will provide a foundation for the identification of, and development of, best practices to ensure both client and canine-therapy team welfare and more standardized contributions to future studies employing CAI-based interventions.

The identification of best practices around the screening and assessment of canine intervention teams is important for a number of reasons. First, there have been calls to safeguard the well-being of canines participating in AAI (see Ng et al., 2015 for a review). Certainly, in light of the varied clientele (e.g., elementary school children to airport travelers to patients who are geriatric) and the varied settings in which AAI programs are delivered, the demands on canine partners can be high. Standardizing screening and selection criteria for therapy teams helps ensure that the canines chosen to work with target clients in targeted settings are well suited to the demands of the therapeutic work required. Second, there have been numerous and repeated calls to increase the rigor of studies done in AAI (Anestis et al., 2014; Herzog, 2011; Odendaal, 2000). A review of the extant psychological and anthrozoological literature showcasing AAI studies reveals little mention of, nor emphasis placed on, the screening and selection of canines for CAI work. Just as there is variability in the types of AAIs done, there is variability in how canines are selected, and this variability very likely contributes to the effectiveness of interventions. Canines that are not thoroughly screened may engage in, and contribute to, CAI in markedly different ways, and poorly selected canines may compromise the effectiveness of interventions. Could, for example, in intervention studies for which no significant differences are

found, poorly screened and assessed canine/handler teams be the reason? Identifying commonly shared or standard practices across CAI agencies helps identify screening and selection criteria and helps level the playing field with respect to the delivery of CAI.

As the public's interest continues to grow and the demand for CAI teams in public settings increases, there is a need to better understand the information solicited, and common practices used, by the different agencies for initial screening of potential CAI teams so as to identify best practice criteria that distinguish canines and handlers who are most compatible and proficient for providing CAI services. The aim of this study was twofold: (1) to conduct an investigation of the information solicited and screening criteria used by North American CAI organizations; and (2) on synthesizing these findings, to provide recommendations for best practices across published protocols. The research questions for this study were (1) What information is most and least frequently requested of potential teams by CAI programs?; (2) What criteria are most and least frequently required of potential teams by CAI programs?; and (3) What canine skills are most and least frequently assessed of potential teams by CAI programs? The summative findings of this review can inform the development of a screening tool that may be useful in identifying potential handlers and canines that would be the best fit for CAI work.

Method

Program selection

A research protocol, which included research questions and inclusion criteria, was established before the data collection and review process. We established three inclusion criteria for CAI programs/agencies: (1) the program provides CAI services; (2) the program has been established for two or more years; and (3) the program has published CAI program criteria online on a working website. We identified CAI programs by doing a search for CAI websites using the search terms: "canine-assisted therapy," "canine therapy," "animal-assisted therapy," "pet-assisted therapy," "therapy dog program," and "therapy dogs." The term "therapy" was used because this term is widely used by CAI programs, even though literature in AAI emphasizes the terms canine-assisted "interventions" or "activities" for volunteer teams. A total of 321 websites met the inclusion criteria. McDonagh et al. (2008) recommend that review teams screen a small number (e.g., 10%-20%) of studies that meet inclusion criteria for an initial investigation, such as this one. In alignment with that protocol, we randomly selected 20% (N = 64) of the total websites that met inclusion criteria to be coded for this investigation.

Of the 64 programs selected for the review, 59 were based in the United States and five were based in Canada. Four programs were national programs (i.e., programs, affiliates, or volunteers across the nation), two were regional (i.e., spanning more than one state/province), and 58 were local (i.e., based in one city, a cluster of cities, or within one state/province).

Program coding

The first step in the selection and screening process was to conduct a preliminary screening of CAI programs to develop content areas for our analyses. In this preliminary screening, a cursory search of canine therapy programs identified 132 CAI programs. A review of these programs allowed us to develop an understanding of CAI program content that was published online. The categories explored for this initial review included agency name, year established, website address, type of program (i.e., local, regional, or national), mission statement or vision, target setting, target clients, therapy team criteria, and logistics for training and volunteering. Based on findings from this preliminary screening, we identified

Table 1
Content sections and items for CAI program review

Item	Description
Basic program information	
Program name	The name of the CAI program
Website address	The active website of the CAI program
Year established	The year the CAI program was established
Specific location	The state, region, or country of the CAI program
Location type	The location type, listed as either local (L), regional (R), or national (N)
Mission or vision statement	Mission or vision statement is present on the website.
Pet partners	Information about being a Pet Partners community partner is present.
Insurance	Information about providing insurance to CAI teams is present.
Information Requested	
Canine age	Application/form requests the canine's age.
Canine aggression	Application/form requests if the canine has demonstrated any aggression.
Canine breed	Application/form requests the canine's breed.
Canine collar type	Application/form requests the type of collar the canine wears (e.g., nylon or leather collar, choke chain, prong collar).
Canine diet information	Application/form requests information about the canine's diet (e.g., type of food given to canine).
Canine name	Application/form requests the canine's name.
Canine gender	Application/form requests the canine's sex.
Canine species	Application/form requests the animal's species.
Canine sterilization	Application/form requests the canine's sterilization status (e.g., spayed, neutered, or intact).
Canine trainer/facility	Application/form requests the trainer or training facility with whom their canine was trained.
Canine training type	Application/form requests the type of training their canine received (e.g., positive reinforcement training, guard dog, service dog).
Canine weight	Application/form requests the canine's weight.
Duration with handler	Application/form requests the duration the canine has lived with the handler.
Facility type	Application/form requests the type of facility at which the handler would like to volunteer (e.g., hospital, school).
Handler age	Application/form requests the handler's age.
Handler contact information	Application/form requests the handler's contact information, such as address or phone number.
Handler motivation	Application/form requests the handler's motivation for volunteering as a CAI team.
Handler name	Application/form requests the handler's name.
Handler occupational information	Application/form requests information about the handler's occupation (e.g., employer or current job).
Handler special equipment	Application/form requests if the handler has any special equipment (e.g., walker, wheelchair).
Previous AAI experience	Application/form requests previous AAI experience that the handler has (e.g., previous AAI volunteer work or training)
Volunteer activities	Application/form requests the handler's interest in certain volunteer activities or programs (e.g., reading buddies, finals week at universities, visiting nursing home residents).
Volunteer availability	Application/form requests the handler's availability to volunteer (e.g., days and times).
Criteria required	
Agency training	The CAI program requires that the handler participates in an agency training.
Canine age	The CAI program requires that the canine be a certain age (e.g., a minimum of 1 year old).
Canine aggression	The CAI program requires that the canines do not display any signs of aggression.
Canine breed	The CAI program requires that the canine be of a certain breed.
Canine collar type	The CAI program requires that the canine has or does not have certain collars (e.g., no choke or prong collars).
Canine diet	The CAI program requires that the canines have a specific diet (e.g., no raw food).
Canine friendly temperament	The CAI program requires that the canine has a friendly temperament.
Canine good citizen certification	The CAI program requires that the CAI team have a canine good citizen (CGC) certification.
Canine health	The CAI program requires that the canine meets certain health requirements (e.g., no seizures).
Canine leash	The CAI program requires that the canine has or does not have certain leashes (e.g., no retractable leashes).
Canine sterilization	The CAI program requires that the canine be spayed or neutered.
CAI team evaluation	The CAI program requires that the handler and canine pass a CAI evaluation.
Criminal check	The CAI program requires the handler passes a criminal background check.
Duration with handler	The CAI program requires that the canine lives with the handler for a minimum amount of time (e.g., six months, one year).
Facility orientation	The CAI program requires that the handler attends an orientation at the facility with which they would like to volunteer.
Handler age	The CAI program requires that the handler be a certain age (e.g., 18 years old).
Handler interview	The CAI program requires that the handler be interviewed.
Handler skills	The CAI program requires that the handler demonstrates certain skills (e.g., ability to redirect canine).
Handler temperament	The CAI program requires that the handler has a certain temperament (e.g., friendly, caring, patient).
Number of volunteer hours	The CAI program requires that the CAI team volunteer for a minimum number of hours per month.
Observation visit	The CAI program requires that the handler attend a visit to a facility without her/his canine to observe a current CAI team at a facility.
Ongoing monitoring	The CAI program requires that the CAI team receive ongoing monitoring by program staff or volunteers.
Other training	The CAI program requires that the handler or CAI team participate in other training, either at the agency or at another agency.
Previous AAI experience	The CAI program requires that the handler has previous AAI experience.
Recertification	The CAI program requires that the CAI team be recertified after a certain time frame (e.g., every year, every 2 years).
Supervised facility visit	The CAI program requires that the CAI team be supervised during a facility visit.
Training fees	The CAI program requires training fees.
Vaccines	The CAI program requires that the canine receives certain vaccinations.
Veterinarian exam	The CAI program requires that the canine is cleared through a vet exam.
Canine skills assessed	
Accepting a friendly stranger	The canine remains near handler and does not retreat from meeting a stranger or the evaluator.
Accepting petting	The canine is a pet by an evaluator and stays near handler and does not retreat from evaluator.
Angry yelling	The canine has no or minimal reaction to volunteers who are yelling or talking loudly near the canine.
Appearance and grooming	The canine appears healthy and does not react or retreat when being brushed or touched by evaluator or volunteer.

Table 1 (continued)

Item	Description
Come when called	The canine can come when called.
Crowded and petted by several people	The canine has no or minimal reaction to being crowded and pet by several people at once.
Down on cue	The canine can move to a down position on cue.
Exuberant and clumsy petting	The canine has no or minimal reaction to being pet in a clumsy or exuberant way by an evaluator or volunteer.
Leave it	The canine has no or minimal reaction to a toy or food item that is placed several feet from the canine as it walks by the item.
Offered a treat	The canine gently takes a treat when offered by the evaluator or a volunteer.
Out for a walk	The canine walks on a loose leash next to the handler and stops when the handler stops.
Overall handling	The canine has no or minimal reaction to being touched by an evaluator or volunteer.
Pass between three strangers	The (small) canine can be held and passed between three strangers.
Reaction to a neutral dog	The canine has no or minimal reaction to a neutral dog brought in to the evaluation for a brief time.
Reaction to distractions	The canine has no or minimal reaction to visual and auditory distractions.
Restraining hug	The canine has no or minimal reaction to being hugged for several seconds by an evaluator or volunteer.
Sit on cue	The canine can sit on cue.
Staggering, gesturing individual	The canine has no or minimal reaction to a volunteer who is staggering, gesturing, wearing a robe or hat, and approaching the canine.
Stay in place	The canine can stay in place on cue.
Two-fingered tap	The canine has no or minimal reaction to being tapped on the canine's back or side.
Walk through a crowd	The canine walks on a loose leash next to the handler in a crowd.

four subsections of information with a total of 81 items: (1) basic program information, (2) information requested of potential teams by CAI programs, (3) information required of potential teams by CAI programs, and (4) required canine skills (see Table 1 for categories and their corresponding criteria). The Basic Program Information section comprised eight items that provided fundamental information about the CAI program. These items were not used to answer the research questions. The Information Requested section included 23 items that were requested of potential teams, either in a volunteer application or an online form. These items were used to answer Research Question 1. The Criteria Required section included 29 items that were required of potential teams. These items were used to answer Research Question 2. The Canine Skills Assessed section included 21 items comprised skills that canines must demonstrate to be part of a CAI team. The skills used in this review are the same skills evaluated in the Pet Partners Skills and Aptitude Evaluation (Pet Partners, 2016). These skills were used because in the preliminary screening, the majority of skills listed on various CAI program websites were the same as the ones listed in the Pet Partners Skills and Aptitude Evaluation. The items in the Canine Skills Assessed section were used to answer research question 3.

The investigation was conducted from August to November of 2017 by the first author and a trained graduate student assistant. Each item was coded according to whether the information was present (P) or not present (NP) on the website during the time frame of this investigation. For example, if a website clearly listed skills required of a canine but made no mention of skills required for a handler, then the canine skills section would be coded "P" for each canine skill mentioned on the website and "NP" for the "handler skills" item. The researcher and graduate student assistant reviewed all coding, then submitted the coding spreadsheet for a fidelity check. The second author, a researcher who did not originally code the data, did a fidelity check on 10% ($N = 6$) of the randomly selected programs in December 2017. In this fidelity check, the researcher found three items (0.62%) out of 486 total items that were mismatched. These items were discussed and modified. It is possible that CAI program websites were changed or updated since the initial coding, but we chose to update our coding spreadsheet after the fidelity check to ensure the data were accurate prior to data analysis. We then calculated a frequency distribution to identify the most and least frequently occurring items as a means of answering the three research questions guiding this study. The five most and least frequently occurring items for each research question are discussed in the section that follows.

Results

We conducted this review with the aim of identifying best practices in online-published information and criteria for CAI programs. To respond to each of our research questions, we calculated a frequency distribution to identify the most and least frequently occurring items. For this investigation, we identified the variety of information that CAI programs request and require of potential CAI volunteers. As Table 1 outlines, detailed information within four categories were identified, seeking to assess if information in 81 content areas was present on CAI program websites. Coalescing intake information across programs illustrates the variability of information deemed important by CAI agencies throughout North America.

To better understand the information requested by CAI programs of potential volunteers and to respond to our first research question, we then determined the most and least frequently requested information of potential volunteer handlers by CAI programs (see Table 2). Findings here are presented by subcategory (Note: As our first subcategory identified characteristics of the program itself, and not information requested of potential volunteers, the findings from this category are not reported here).

For the Information Requested Section, it is not surprising that across programs, both handler name and canine name and breed were the information most frequently sought. This information serves to identify individual potential teams and assist programs in the organization of new volunteers. What appears to be less emphasized here by virtue of how infrequently the information is requested, is information about the size (e.g., weight) and management of the canine (e.g., diet, type of collar used).

For the Criteria Required Section, the most frequently required standards for potential CAI teams focused on the requirement for a CAI team evaluation, which assessed both the handler's and canine's suitability for volunteer therapy work. This was followed by criteria related to the canine's temperament, age, and inoculation history and status. It is also important to note that CAI program training was highlighted as a program requirement. Less frequently emphasized was whether the handler had undergone an interview, any other training required by the CAI program, and the handler's prior AAI experience.

For the Canine Skills Assessed Section, the frequency of canine skills that are evaluated in a CAI team evaluation appears to be evenly distributed (range = 46%-56%) and emphasizes information asking about the canine's temperament, reaction to being approached by a stranger, reaction to another canine, and the canine's ability to follow behavioral commands (e.g., down, sit, stay).

Table 2
The most and least frequently occurring requested items by category

Item	Present	Not present	% Of items present
Research question 1: information requested of potential CAI teams section			
Most requested items			
Handler name	48	16	75.00%
Handler contact information	44	20	68.75%
Canine name	29	35	45.31%
Canine age	26	38	40.63%
Canine breed	24	40	37.50%
Least requested items			
Animal weight	5	59	7.81%
Canine collar type	4	60	6.25%
Canine trainer/facility	3	61	4.69%
Handler special equipment	2	62	3.13%
Canine diet	2	62	3.13%
Research question 2: criteria required of potential CAI teams section			
Most required criteria			
CAI evaluation	52	12	81.25%
Canine friendly temperament	46	18	71.88%
Canine age	37	27	57.81%
Vaccines	37	27	57.81%
Agency training/orientation	34	30	53.13%
Least required criteria			
Handler interview	6	58	9.38%
Other training	5	59	7.81%
Previous AAI experience	4	60	6.25%
Ongoing monitoring	2	62	3.13%
Canine breed	2	62	3.13%
Research question 3: canine skills assessed section			
Most frequently occurring canine skills			
Accepting a friendly stranger	36	28	56.25%
Down on cue	34	30	53.13%
Sit on cue	32	32	50.00%
Stay on cue	31	33	48.44%
Reaction to a neutral dog	30	34	46.88%
Least frequently occurring canine skills			
Restraining hug	11	53	17.19%
Two-fingered tap	9	55	14.06%
Offered a treat	8	56	12.50%
Pass between three strangers	5	59	7.81%
Staggering, gesturing individual	5	59	7.81%

What is less frequent within this category is how the canine responds to focused touch-based interactions (e.g., hugging, two finger touch) and if the canine will accept a treat from a stranger.

Discussion

Recall that the overarching aim of this study was to identify the kind of information emphasized by CAI programs as they strive to screen and select well-suited volunteer handlers and canines for the programs they offer within their communities. Our review of information across North American programs revealed the breadth and variability of information deemed important by CAI programs. The variability in criteria emphasized across programs is likely to reflect the extent to which those who govern programs have themselves received training in AAI and a reflection of their AAI knowledge base. A review of the extant anthrozoological literature revealed no established standardized criteria or requirements for CAI programs to guide CAI program development. In this regard, the variability in our findings across programs is consistent with the lack of overarching governance in the field of canine therapy and the sheer number of independent CAI programs in operation identified in our review.

To make sense of this variability in information asked of potential volunteers, we organized the findings into three distinct

categories: (1) Information Requested; (2) Criteria Required; and (3) Canine Skills Assessed. By virtue of identifying what is asked of potential volunteers and how frequently this information is requested across different programs, we also identify what is missing or absent, in essence, what is not (yet) deemed important in the identification and selection of volunteer canine/hander teams. What is evident from our analysis is that, despite working as a team in which both handlers and canines contribute, CAI programs accord importance to criteria regarding canine behavior and skills. As a result, the handler's qualifications or skills are underemphasized. Our finding here highlights the importance of screening handlers to a greater extent to ensure they are well suited to both managing their canine in public, and that they, themselves, are well suited for the intended work. This latter point is especially salient when handlers are asked to support the well-being of vulnerable participants.

Although the Information Requested Section findings indicated that CAI programs asked for basic demographic and contact information from potential CAI teams, the broader field of canine interventions emphasizes specialized practices in training, such as using positive reinforcement training and avoiding the use of choke, prong, or electric collars with canines (Ziv, 2017). CAI programs should consider requesting information that would give them helpful information from the initial volunteer application in determining the best fit for potential CAI teams. Recommendations are included in the Best Practices section below.

The Criteria Required Section highlights the importance that CAI programs place on the CAI team evaluation and the canine having a friendly temperament, with 72% of all programs including these requirements on their website. Canine age and inoculation history were also included in the top five frequently occurring criteria. Ng et al. (2015) note that vaccinations should be administered according to local regulations to reduce the transmission of zoonoses.

Verga and Michelazzi (2009) assert that selecting therapy animals for human-animal interaction (HAI) work should be "meticulous and comprehensive to ensure that animals chosen are highly adaptable and predictable in all environments" (Ng et al., 2015, p. 367). This is echoed by the work of Fredrickson-MacNamara and Butler (2010) who posit that a key indicator of a canine's suitability for therapy work lies in his/her ability to "… recover from the encroachment of strangers, cope comfortably in the environment, and respond appropriately to interactions" (p. 126). Ng et al. also emphasize that therapy animals should have a friendly temperament around a variety of people. Further refining the assessment criteria for canines involved in CAI services, these authors argue that canines should be a minimum of 1 year of age before beginning therapy work and decreasing length of involvement in sessions should be considered starting at age 8. Thus, our findings are in accord with what has been emphasized in the broader CAI literature.

The Criteria Required Section outcomes also indicate the less frequently occurring criteria, such as handler interviews, previous AAI experience of handlers, and ongoing monitoring. These findings indicated that CAI programs do not stress the need for handlers to have previous AAI experience, to be interviewed before program training, and to be monitored on an ongoing basis. In their review of animal selection procedures in AAI, Fredrickson-MacNamara and Butler (2010) highlight the importance of, and variability in, the skills required by handlers. As handlers are the conduit linking animals to the clients who participate in AAI programs, the handlers must concurrently possess strong interpersonal skills (e.g., social skills to engage clients during a visit) and canine handling skills (e.g., ability to read the canine's stress indicators during a visit). The lack of emphasis on handlers' skills as evidenced by our review of CAI programs and relative dearth of information in the

broader AAI literature around the identification of handler competencies suggests additional research is needed to clarify the roles of handlers both with respect to clients visiting programs and canines working with programs.

In addition to handler skills, our investigation found that only 17.19% of CAI programs required criminal background checks for handlers. Although this finding did not make it on the most or least frequently occurring criteria, this is an important finding based on two federal acts: the National Child Protection Act of 1993 (Davis, 1994) and the Volunteers for Children Act (VCA, 1998). Both of these federal acts sanction fingerprint-based national searches of criminal history records of persons seeking paid or volunteer positions with organizations that serve children, the elderly, or the disabled. Because CAI programs often serve these same populations in schools, hospitals, assisted-living facilities, airports, and other program locations, CAI programs should consider including criminal background checks as a program requirement. It is possible that CAI program partner facilities may already have a criminal background process setup, yet that may not be the most effective process. We suggest that CAI programs are in a better position to start the background check process early to make placement in partner facilities more efficient and to manage or address any background check results before extensive CAI team training.

Best practice recommendations

One aim of conducting an in-depth review of the criteria emphasized across CAI programs was to identify and recommend best practices. This was done with the intention of helping inform the CAI community (both practitioners and researchers alike) as to protocols and standards that best facilitate CAI work and can help move the field forward. Arising from our review of CAI programs, we offer the following recommendations for best practices to ensure the optimal selection of handlers and canines.

1. Based on current HAI literature (Fine, 2015; McConnell, 2002; Ziv, 2017), these authors recommend that CAI programs request the following information, in addition to basic demographic and canine information, from potential CAI teams.
   a. Collar and leash type: Understanding what type of collar and leash a handler currently or previously has used may provide helpful information on how a canine was trained before applying to become a CAI team. Canines that have been trained with a prong, choke, or electronic collar may have developed conditioned stress responses as a result of negative reinforcement training through the use of these collars (Ziv, 2017). Canines exhibiting stress in the presence of their handlers or in human-animal interactions are likely not to be a good fit for CAI work. For leashes, canine trainers often recommend the use of four- or six-foot leashes, rather than retractable leashes, so that handlers have more access and control to support their canine. The authors of this article recommend that CAI programs specifically ask: "What type of collars do you currently or have you previously used with your dog?" with response options: "nylon, buckle, choke, prong, e-collar, shock collar, et cetera." and "What type of leashes do you currently or have you previously used with your dog?" with response options "4 ft. or 6 ft. nylon or leather leash, retractable leash, martingale, harness, et cetera" CAI programs can then utilize that information to discuss evidenced-based methods for canine training (i.e., positive reinforcement training). It is important to note that if a canine has been trained with a collar intended for punishment, such as a prong collar, this does not mean the canine cannot become part of a CAI team, but

handlers and CAI programs should be aware of and look for stress signals in these canines and how that may affect CAI work with clients.
   b. Description of training with animal: Similar to the topic of collar and leash type, learning how the canine was trained can be helpful information to CAI programs. There are a variety of ways that canines can be trained: trained by the handler or trained away from home by a canine trainer, positive reinforcement training (e.g., using treats or toys to increase the frequency of a desired behavior), punishment training (e.g., using choke, prong, or e-collars to decrease the frequency of an undesirable behavior), harnesses and gentle leaders to guide behavior, basic skills classes, Canine Good Citizen classes and certification, or agility classes, to name a few. We promote positive reinforcement training as not only as a best practice, but as the most effective and ethical way to train therapy dogs. We recommend that CAI programs ask, "How was your dog trained?" and provide response options, such as the ones listed in this section. This information can be used by CAI programs to assess how previous training has affected the canine and discuss the use of positive reinforcement in future human-animal interactions.
   c. Handler experience with animals: Previous experience with animals in the CAI field is not a handler requirement but can be beneficial. Handlers who have experiences of growing up with animals or having animals as pets before becoming a CAI handler have more exposure to how animals react in various situations and with different people. Handlers who have previous experience leading a CAI team have specialized knowledge of the guidelines and processes surrounding how to become a certified CAI team and how best to provide services to clients. Learning if previous experience with animals has been positive or negative can also be helpful. Handlers with negative experiences with animals may be hesitant to provide the necessary structure, advocacy, and boundaries that the canine needs during human-animal interactions with strangers. We recommend that CAI programs request the following information on CAI applications: "What previous experience do you have with animals?" "What experience do you have in providing CAI or volunteering with an animal?" and "Have you ever had a negative experience with an animal? If so, please describe." CAI programs can discuss this information further with handlers during an interview or the training process.
   d. Handler motivation and mental fitness: It may be beneficial for CAI programs to learn why a handler is motivated to volunteer with his/her canine. There are a variety of reasons why potential handlers want to volunteer, such as wanting to give back to their community, help others, or have a hobby. In the mental health field, practitioners are often given psychological assessments, participate in interviews, and are evaluated throughout their graduate program to assess fitness for work with clients. Practitioners who are currently struggling with suicidal ideations, trauma, or mental health issues may not be the best fit for providing mental health services. Similarly, CAI volunteers struggling with those same issues may not be the best fit for providing CAI services. We recommend that CAI programs ask the following questions to assess fitness for work with clients: "What is your motivation for being a CAI team?", "Oftentimes, dog/handler teams work with clients who face mental health challenges. What steps do you take to safeguard your optimal mental health?" CAI programs should continue to assess handler motivation and fit throughout the training process.

This additional information may provide CAI programs with potential needs for CAI teams or background information that handlers might not otherwise share on an application or during an agency screening or assessment.

2. AAI researchers and CAI programs must develop and promote equitable standards for CAI teams. We assert that these standards should include the following elements.
   a. Requirements for team evaluations: Although 81% of CAI programs assessed in this study required team evaluations in order for teams to participant in their program, over 19% of programs did not require an evaluation. This indicates that some programs allowed CAI teams to interact with people in settings without a formal evaluation process in place. It is our recommendation that all programs require a team evaluation with similar standards.
   b. Canine and handler skills and temperament: Many programs (72%) had published criteria on canine temperament, but only 25% of programs had criteria for handler skills or temperament. In doing CAI work, handlers have the responsibility to initiate conversation, show clients how to interact with their canine in a way that promotes positive human-animal interactions, and uphold the values of the CAI program and the field of AAI. This work requires handlers to be friendly, assertive, encouraging, and advocate for the client and their dog. Thus, it is vital for CAI programs to have established criteria for handler skills and temperament. These skills can be assessed through CAI program training, but CAI programs should publish required skills online so handlers understand the expectations for CAI work in advance.
   c. Handler background checks: Similar to handler skills and temperaments, many CAI partner facilities require that volunteers pass a criminal background check before being on site. Only 17% of CAI programs listed a criminal background check as a requirement for their program. This may be due to the fact that partnering agencies where CAI teams would actually conduct visits (such as a nursing home or hospital) have their own processes for criminal history checks. Because CAI teams often undergo training, evaluation, and practice before they are able to volunteer at a facility, it is possible that a handler with a prior criminal background may be turned down after many months of training. CAI programs should post background check requirements online and consider collaborating with partnering facilities to begin the criminal background check process earlier.
   d. CAI program training: CAI programs are as varied as the populations they serve (e.g., children with cancer, patient who are geriatric, clients with disabilities, et cetera). Even though this variability exists, all CAI programs should offer training that equips handlers and dogs to work in a variety of settings and with a variety of clientele. Competencies currently exist for animal-assisted counseling practitioners (Stewart et al., 2016), and CAI programs should have comparable content standards for doing volunteer work. CAI training should focus on three primary content areas: knowledge, skills, and practice. Specific topics covered in these primary areas include knowledge about the canine species, husbandry, canine communication, and the behaviors and needs of their specific canine; skills for both canines and handlers, such as how to sign in at volunteer sites, interact with clients, and advocate for the canine during a stressful interaction; and practice, including practicing skills for the team evaluation, facility visits, interactions with different clients, and handling a crisis/challenging situation. CAI programs should follow standard guidelines for training volunteer teams and then offer specific training based on the populations they serve.
   e. Procedures for ongoing monitoring and recertification: After CAI teams meet the initial requirements for volunteer work at a facility (e.g., CAI program training, team evaluation, and an observation visit), they are often able to begin volunteering. One-quarter of CAI programs assessed in this study required recertification. For some of these programs, the recertification process involved passing another team evaluation every one or two years; however, for others, the process only involved paying a membership fee. This means that the canine and handler are often not required to be reassessed for skills after completing the initial training and evaluation requirements. Furthermore, only 3% of programs required ongoing monitoring. This indicates that the majority of programs do not see the value of ongoing monitoring of CAI teams or do not have sufficient resources to monitor the team's suitability postcertification. The ongoing monitoring of canine health and suitability for CAI work is important as it helps identify canines that may struggle with health conditions or have become stressed or reactive in certain environments. Ongoing monitoring helps safeguards both canine well-being and client safety. We recommend that all programs establish standards for recertification and/or ongoing monitoring to ensure that CAI teams are able to demonstrate the temperament and skills necessary for CAI work.

The focus should not only be on canine abilities but also on handler abilities to promote HAI with their canine partner.

3. The CAI research community should also create a standard team evaluation tool that can assess fit for potential teams in a variety of settings. The canine/CAI skills that we recommend to be assessed include accepting a friendly stranger, sit, stay, and down on cue, reaction to a neutral dog, loose leash walking, accepting petting, reaction to distractions, come when called, reaction to angry yelling/loud voices, and clumsy and crowded petting. All of these skills are utilized in facilities and are a good fit for team evaluations. Although we believe that the five least present skills listed online (i.e., restraining hug, two-fingered tap, offered a treat, pass between strangers, and staggering/gesturing individual) are important, CAI programs should decide if these skills are specific to certain populations or facilities.

In light of the surge in interest in CAI and its uptake across myriad settings to support the well-being of varied community members, there is a need for standardized screening and assessment intake criteria, protocols, training, and evaluation for both handlers and canines. Our investigation provides a starting point for future research in this field. More focused research that asks CAI program directors, staff, and CAI researchers and educators to identify CAI program standards can deepen the HAI evidence base and promote both animal and client welfare.

Limitations

Despite best intentions, this study was not without limitations. First, "not all websites are created equally" and the inconsistency with which CAI programs document their intake practices online varies tremendously. Thus, some programs may have accorded less importance to their online profile while perhaps implementing robust screening and assessment practices during face-to-face interactions with potential volunteers. We relied uniquely on a review of online published information and we could have

complimented this approach by incorporating interviews with CAI directors to: (1) corroborate that published criteria was, in fact, used to guide selection and assessment practices; and (2) identify additional practices undertaken to screen, assess, and select CAI teams that was not documented on each program's respective website.

Another limitation was the coding process itself. There were no current processes for coding online material. Following best practices, we used a preliminary review to develop content areas for coding. It is possible that other content areas may have been more helpful to assess, such as specific handler skills, yet these content areas were not identified in our preliminary review. We also chose to use a dichotomous present/not present coding process. It is possible that using a continuous measure, such as using a Likert-type scale or counting the number of times an item was listed, would provide a richer indication of the presence of the screening criteria we reviewed. Despite the above limitations, our hope is that our findings provide a launching point for future researchers to develop and assess online CAI program material and screening protocols.

Conclusion

There have been multiple calls to augment the rigor of research conducted in the field of AAI with authors calling for increased sample size, randomization of participants after pretest to either a treatment or control condition, and the incorporation of follow-up assessments beyond post-test to assess the "stick" or durability of effects (Anestis et al., 2014; Herzog, 2011; Odendaal, 2000). The findings of our study support this call for increased empirical rigor in AAI studies by standardizing the selection criteria for both volunteer handlers and canines. This "leveling of the playing field" reduces the effect any differences in the quality of screening, assessment, and selection processes might have on a study's outcome variables. Might more rigorously vetted CAI teams more intently engage in sessions with clients and thus enhance the effects of the AAI experience? Our work stands to inform researchers and practitioners interested in advancing the field of AAI, particularly CAI, through the identification of what CAI programs currently deem important when identifying handler-canine teams.

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Ethical considerations

No ethical approval was required as this was a screening of online published material.

Conflict of interest

The authors have no conflicts of interest.

References

Anestis, M.D., Anestis, J.C., Zawilinski, L.L., Hopkins, T.A., Lilienfeld, S.O., 2014. Equine-related treatments for mental disorders lack empirical support: a systematic review of investigations. J. Clin. Psychol. 70, 1115–1132.

Barker, S.B., Barker, R.T., McCain, N.L., Schubert, C.M., 2016. A randomized cross-over exploratory study of the effect of visiting therapy dogs on college student stress before final exams. Anthrozoös 29, 35–46.

Barker, S.B., Barker, R.T., McCain, N.L., Schubert, C.M., 2017. The effect of a canine-assisted activity on college student perceptions of family supports and current stressors. Anthrozoos 30 (4), 595–606.

Binfet, J.T., Passmore, H.A., 2016. Hounds and homesickness: The effects of an animal-assisted therapeutic intervention for first-year university students. Anthrozoös 29 (3), 441–454.

Binfet, J.T., 2017. The effects of group-administered canine therapy on university students' wellbeing: A randomized controlled trial. Anthrozoös 30 (3), 397–414.

Binfet, J.T., Struik, K., 2018. Dogs on campus: Holistic assessment of therapy dogs and handlers for research and community initiatives. Society & Animals, 1–30.

Brelsford, V.L., Meints, K., Gee, N.R., Pfeffer, K., 2017. Animal-assisted interventions in the classroom: a systematic review. Int. J. Environ. Res. Public Health 14, 669–702.

Crossman, M., Kazdin, A.E., 2015. Animal visitation programs in colleges and universities: an efficient model for reducing student stress. In: Fine, A.H. (Ed.), Handbook on Animal-assisted Therapy: Foundations and Guidelines for Animal-assisted Interventions, 4th ed. Elsevier Academic Press, San Diego, CA, pp. 333–337.

Crossman, M., Kazdin, A.E., Knudson, K., 2015. Brief unstructured interaction with a dog reduces distress. Anthrozoös 28, 649–659.

Daltry, R.M., Mehr, K.E., 2015. Therapy dogs on campus: recommendations for counseling center outreach. J. Coll. Stud. Psychother. 29, 72–78.

Davis, N.S., 1994. National Child Protection Act of 1993. National Criminal Justice Reference Service Abstracts. Available at: https://www.ncjrs.gov/App/publications/Abstract.aspx?id=152876. Accessed November 9, 2017.

Fine, A.H., 2015. Handbook on Animal-assisted Therapy: Foundations and Guidelines for Animal-assisted Interventions, 4th ed. Elsevier Academic Press, San Diego, CA.

Fine, A.H., Tedeschi, P., Elvove, E., 2015. Forward thinking: the evolving field of human-animal interactions. In: Fine, A.H. (Ed.), Handbook on Animal-assisted Therapy: Foundations and Guidelines for Animal-assisted Interventions, 4th ed. Elsevier Academic Press, San Diego, CA, pp. 21–35.

Fredrickson-MacNamara, M., Butler, K., 2010. Animal selection procedures in animal-assisted interaction programs. In: Fine, A.H. (Ed.), Handbook on Animal-assisted Therapy: Theoretical Foundations and Guidelines for Practice, 3rd ed. Elsevier Academic Press, San Diego, CA, pp. 111–134.

Herzog, H., 2011. The impact of pets on human health and psychological well-being: fact, fiction, or hypothesis? Curr. Dir. Psychol. Sci. 20, 236–239.

Hartwig, E.K., 2017. Building solutions in youth: Evaluation of the Human-Animal Resilience Therapy intervention. Journal of Creativity in Mental Health 12 (4), 469–481. https://doi.org/10.1080/15401383.2017.1283281.

Lenihan, D., McCobb, E., Diurba, A., Linder, D., Freeman, L., 2016. Measuring the effects of reading assistance dogs on reading ability and attitudes in elementary school children. J. Res. Child. Educ. 30, 252–259.

McConnell, P.B., 2002. The other end of the leash: Why we do what we do around dogs. Ballentine Books, New York, NY.

McDonagh, M., Peterson, K., Raina, P., Chang, S., Shekelle, P., 2008. Avoiding Bias in Selecting Studies: Methods Guide for Comparative Effectiveness Reviews (Prepared by the Oregon Health & Science University, McMaster University, and Southern California Evidence-based Practice Centers under Contract No. 290-2007-10057-I.) AHRQ Publication No. 13-EHC045-EF. Agency for Healthcare Research and Quality, Rockville, MD.

Ng, Z., Albright, J., Fine, A.H., Peralta, J., 2015. Our ethical and moral responsibility: ensuring the welfare of therapy animals. In: Fine, A.H. (Ed.), Handbook on Animal-assisted Therapy: Foundations and Guidelines for Animal-assisted Interventions, 4th ed. Elsevier Academic Press, San Diego, CA, pp. 357–376.

Odendaal, J.S., 2000. Animal-assisted therapy: magic or medicine? J. Psychosom. Res. 49, 275–280.

Pet Partners, Inc., 2016. Team Evaluator Policies and Procedures Manual. Pet Partners, Inc, Bellevue, WA.

Rayment, D.J., De Groef, B., Peters, R.A., Marston, L.C., 2015. Applied personality assessment in domestic dogs: limitations and caveats. Appl. Anim. Behav. Sci. 163, 1–18.

Serpell, J.A., Hsu, Y., 2001. Development and validation of a novel method for evaluating behavior and temperament in guide dogs. Appl. Anim. Behav. Sci. 72, 347–364.

Sorin, R., Brooks, T., Lloyd, J., 2015. The impact of the classroom canines program on children's reading, social and emotional skills, and motivation to attend school. Int. J. Lit. 22, 23–35.

Stewart, L.A., Chang, C.Y., Parker, L.K., Grubbs, N., 2016. Animal-Assisted Therapy in Counseling Competencies. American Counseling Association, Animal-Assisted Therapy in Mental Health Interest Network, Alexandria, VA.

Taylor, K.D., Mills, D.S., 2006. The development and assessment of temperament tests for adult companion dogs. J. Vet. Behav.: Clin. Appl. Res. 1, 94–108.

Tomkins, L.M., Thomson, P.C., McGreevy, P.D., 2011. Behavioral and physiological predictors of guide dog success. J. Vet. Behav.: Clin. Appl. Res. 6, 178–187.

USA Today, 2014. Therapy Dogs Help Soothe the Stress of Air Travel. Available at: http://www.usatoday.com/story/travel/flights/2014/11/19/airport-therapy-dogs/19225511/. Accessed November 16, 2017.

Verga, M., Michelazzi, M., 2009. Companion animal welfare and possible implications on the human-pet relationship. Ital. J. Anim. Sci. 8, 231–240.

Volunteers for Children Act (VCA), 1998. Public Law105-251. Available at: http://uscode.house.gov/statutes/pl/105/251.pdf. Accessed November 16, 2017.

Ziv, G., 2017. The effects of using aversive training methods in dogs: a review. J. Vet. Behav.: Clin. Appl. Res. 19, 50–60.