Influence of Biographical Variables and Academic Background on Attitudes towards Animal-Assisted Interventions

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Over the past two decades, there has been increasing evidence of the benefits of animal-assisted interventions (AAI) among diverse groups and settings. However, little is known of the variables that can affect the attitudes of professionals towards these interventions. Two studies were done with university students in southern Spain. The first study (N=474, 80% women, M=23 years old) showed that personal experience with companion animals was the variable that best predicted intent to practice AAI, following by information received by the mass media and gender (higher intent among men). In this study, neither reading scientific literature on the topic nor formal training in AAI had a significant effect. The second study (N=22 women, M=24.5 years old) evaluated the change in attitudes before and after a three-hour learning session that included technical information and practical exercises. According to this study, 95% of the participants had higher expectations for AAI after the session, a change that can be attributed mainly to the direct experience with the animal and to a lesser extent, to the conceptual and scientific contents of the session. Researchers discuss the implicit risk of confusion detected between personal preferences and the technical capacity of AAI, revealing a need for training that is not currently covered in undergraduate studies.

Key words: animal-assisted interventions, attitudes, university students

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The positive effects of human-animal interaction have been well-documented in scientific literature, with evidence of its impact on the survival of cardiopathic patients (Barker & Wolen, 2008; Filan & Llewellyn-Jones, 2006); on stress reduction in a non-clinical population (Virués-Ortega & Buela-Casal, 2006); and on the perception of social assistance without value judgments (Geist, 2011; Moody, King & O'Rourke, 2002), among others. This evidence has been used to justify the introduction of animals in therapeutic contexts as a technical resource capable of improving the working alliance (Wesley, 2008; Wesley, Minatrea & Watson, 2009). Although there are myriad terms and concepts that make reference to this work format (assisted therapy and activities, hippotherapy and zootherapy, among others; Kruger & Serpell, 2010; López-Cepero et al, 2014), these experiences are all included

under the blanket term animal-assisted interventions (AAI; Hart, 2010).

Various studies and meta-analyses have detected the beneficial effects of AAI on specific population groups. These include studies on the elderly either with or without dementia (Bernabei et al., 2013; Filan & Llewellyn-Jones, 2006; Perkins, Bartlett, Travers & Rand, 2008), mood disorders (Souter & Miller, 2007), behavior disorders (Nimer & Lundhal, 2007), hospitalised patients (Halm, 2008; Nimer & Lundhal, 2007) and neurorehabilitation (Muñoz-Lasa et al., 2013). The reported benefits also extend to non-clinical samples, with improvements in different dimensions of the quality of life of participants (see Perea-Mediavilla, López-Cepero, Tejada & Sarasola, 2014). Although many of the available studies on the effectiveness of AAI present various methodological deficiencies (Kazdin, 2010), the experiences that do take into account potential biases concur that these interventions do provide benefits, albeit moderate ones (Marino, 2012).

The findings of quantitative studies focusing on expectations regarding AAI have been mainly positive, independently of the reference group of professionals. First, there are three studies conducted among Norwegian psychiatric professionals. One of these studies, by Berget, Ekeberg, and Braastad (2008), showed that two thirds of participants believed that the use of farm animals could improve the interaction between therapists and patients. In the second, Berget and Grepperud (2011) concluded that somewhere between 55-87% of participants (depending on their profession) believed that the use of animals was somewhat or very helpful in the treatment of different mental disorders. Finally, Berget, Grepperud, Aasland and Braadstad (2013) found that 88% of participants considered the use of

animals necessary during interventions with a psychiatric population. Meanwhile, in Australia, Moody et al. (2002) noted high expectations for AAI among professionals in a paediatric ward.

Different variables have been studied as possible facilitators for the inclusion of animals in therapeutic contexts, yet none has yielded consistent results. In the first place, the influence of gender of the respondent is a recurrent topic in the literature, although some studies have attributed greater trust and interest in AAI to men (Berget et al, 2013; López-Cepero et al., 2015) and others to women (Berget et al., 2008; Berget & Grepperud, 2011). In the second place, different studies have contemplated the potential influence of the level of information about AAI. In this respect, many authors have noted the lack of academic training in AAI in fields such as psychology, medicine, and social work (Berget et al., 2013; Black, Chur-Hansen & Winefield, 2011; Risley-Curtiss, 2010). However, Berget et al. (2013) found exactly the opposite, with 70% of professionals in his study claiming to have some or plenty of information on the usefulness of AAI, though some argue that this finding may be biased by the fact that people with training in the field were more likely to respond to the survey than those with no training/interest. Thus, the literature does not offer a clear interpretation of the effects that informal information and specific training can have on the intention to conduct AAI programs. In terms of the other variables of interest such as experience with pets and/or farm animals, experience with assisted interventions and profession, none has been a consistent predictor of attitudes towards AAI (Berget & Grepperud, 2011; Berget et al., 2013; López-Cepero et al., 2015; Moody et al., 2002).

Given that the expectations of professionals are important to potentially

practicing AAI, it is surprising that few studies have focused on assessing changes of attitudes among professionals. In this regard, the only reference is that of Moody et al. (2002), who noted that direct experiences with animals at the work center helped to improve expectations among professionals in a pediatric ward, although the reduction of fears was not statistically relevant.

The findings described here serve to formulate two questions that will be explored in both of our studies. First, the effect that diverse biographical and academic background factors (independent variables) have on a professional's interest in conducting AAI (dependent variable); and second, the relative importance of the presence of a dog, the presentation of information and group work (IV) in changing attitudes towards AAI (DV) in a sample of university students from southern Spain.

Study 1

Methods

Participants. The first study involved 474 students from public education institutions in the provinces of Huelva and Seville. In terms of their area of study, 50.8% (N=251) of the participants were majoring in the social sciences (educational sciences, social work, social education, sociology and political science) and 49.2% (N=233) were studying health sciences (psychology and nursing). By gender, 20.5% reported themselves as men (M=24.5 years; SD=8.31) compared to 79.5% women (M=22.3; SD=4.60 years), with an average age of 22.7 (SD=5.61)

Instruments. The research team administered a set of instruments including a sheet to gather sociodemographic information (gender, age, academic background and job status, among others) and a set of dichotomous questions (yes/no) referring to one's experience with animals (having had a pet, having taken care of farm animals and, if so, whether it was considered a positive experience) and on the level of information on AAI (through mass media, having read a scientific text, having had formal training, having experience with AAI). The set of instruments also included a questionnaire on attitudes towards AAI that was not included in this first study (see Study 2).

Procedure. Accidental sampling was used for the study, with the research team members requesting collaboration from among a network of professional collaborators. However, there were no reasons to anticipate significant differences in age, gender or other personal variables associated with the population of origin that could invalidate the conclusions of the study. One member of the team visited the educational institutions where students had agreed to participate, passing out instructions and picking up the completed evaluation protocols. All of the participants were adults and received information on the voluntary nature of participation. Finally, all provided verbal consent to participate in the study.

The data from the evaluation were coded in an SPSS database, Version 22. The descriptive statistical procedures (frequency analysis) were carried out along with binary logistic regression analysis, including the Hosmer-Lemeshow test (acceptable with values $p>0.05$) and the estimation of the percentage of explained variance using Nagelkerke R^2. The effect of each variable in the equation was quantified through probability reasoning -Exp(B)-.

Results

The frequency analysis for the variables established as independent showed a percentage of valid cases equal or higher than 87% in 8 of the 9 items included (positive experience with farm animals reached 39%). On the other hand, positive experiences with pets yielded a percentage of affirmative answers higher than 95% (see Table 1) yet did not prove significant in the logistic regression analysis. This, in addition to the conditional nature of these responses (they could only be answered by those who have been entrusted with an animal's care), justified the elimination of both items in the subsequent analyses.

Logistic regression analysis provided an equation that explained around 18% of the variance ($R2$=0.178), proving significant at a level of $p<0.001$ ($X^2_{(7)}$=50.156). The Hosmer-Lemeshow statistic showed an adequate adjustment level (p=0.324). Three variables had a significant effect on a respondent's interest in conducting AAI: having had a pet (which tripled the likelihood of answering this question affirmatively), having seen or heard about AAI in mass media (which doubled the likelihood)

and the gender of the respondent (with a 60% deviation in favour of men). These results are broken down on Table 2 (see next page).

Study 2

Methods

Participants. Database number 2 included a total of 23 students from a graduate program in gerontology. Only one participant identified as a male and was thus eliminated from the analyses. A total of 44 protocols were gathered (22 at the beginning and 22 at the end). The average age for female participants was 24.5 (SD=2.46).

Instruments and participating animals. The participants filled in two evaluation protocols, one at the beginning of the session and another at the end. On both occasions, participants filled in a sociodemographic information sheet (gender, age and job status, among other information) and the Attitudes toward Dog-Assisted Interventions Questionnaire (CAINTAP, its Spanish acronym; López-Cepero et al., 2015).

Table 1. Cases valid for analysis and percentage of affirmative responses to each question.

Variable	N valid	% positive
Gender[a]	474	79.5%
Pet	474	49.8%
Positive Experience with Pet	414	95.2%
Farm Animal	470	7.9%
Positive Experience with Farm Animal	183	90.2%
News AAI	472	63.3%
Articles AAI	469	25.2%
Training AAI	471	14.2%
Experience IAA	468	4.3%
Desire to participate IAA	460	83.3%

[a] The percentage of women is shown here.

Table 2. Prediction of intent to practice AAI based on logistic regression analysis.

Variable	B	Standard Error	Wald	df	Exp(B)	*p*
Pet	1.216	.304	15.961	1	3.372	.000***
News AAI	.757	.290	6.823	1	2.132	.009**
Gender (ref. men)	-.831	.297	7.840	1	.435	.005**
Farm Animal	.750	.784	.913	1	2.116	.339
Articles AAI	.550	.383	2.059	1	1.734	.151
Training AAI	-.192	.388	.245	1	.825	.621
Experience AAI	-1.081	.625	2.989	1	.339	.084
Constant	-3.196	1.971	2.628	1	.041	.105

$**p<0.01$; $***p<0.001$.

CAINTAP is a self-administered instrument with 20 items designed to evaluate expectations towards AAI. It has two scales coined as positive attitudes (referring to the benefits expected for the participants and the center; 11 items, alpha=0.879) and negative attitudes (referring to fears and concerns; 9 items, alpha=0.884) towards AAI. In the second evaluation, a set of six statements were included; the statements summarized information on increased participant expectations for AAI over the course of the session and on the influence attributed to the behavior of the dogs, the exercises done with the dogs, the theoretical information received, the research results reviewed and the group discussion work in the classroom. Participants were asked to rank their level of agreement with each statement on a scale of 1 (strongly disagree) to 5 (strongly agree).

Ula, a female six-year-old golden retriever, participated in the intervention phase along with her guide. This dog had intervention experience in different contexts (health and education) and presented both education (stable and predictable behavior while resting) and canine training (responding to orders to lie down, roll over, find and bring objects and interrupt exercises already begun, among others) according to the INTAP Association work method. The dog's health checks (zoonoses, deworming, etc.) had been done by veterinarians.

Procedure. The evaluations were done at a Master's level class at a public university in Seville where the team had been invited to participate. The informative session lasted for three hours and included an introduction to AAI theory; an analysis of the topic in recent scientific literature; a demonstration of training (guided exercises) and education (behavior outside the active phase) of a dog from the INTAP Association; assisted-intervention exercises done through role playing; and group discussion on the limitations and benefits of AAI. The first evaluation was done before the dog entered the classroom. Given that the educational institute did not allow animals on site, special permission was requested in order to conduct the study.

The data from both evaluations was coded in an SPSS database, Version 22. Descriptive statistical procedures were done (frequency analysis, measures of central tendency and dispersion), comparison of means (Student's t-test, significance level of $p<0.05$), and effect size calculation (d=differences of means between standard deviation, using the rule of thumb proposed by Cohen, 1988:

Table 3. Comparison of means for the pre- and post-intervention moments on the positive and negative expectation scales of the CAINTAP. [a] The means obtained before the intervention were statistically similar to those found for women in Study 1.

	Evaluation	N	M	$|M_1-M_2|$	SD total	t	p	d
Positive Attitudes	Pre[a]	22	41.00	4.18	6.04	-2.331	.030*	0.69
	post	17	45.18					
Negative Attitudes	Pre[a]	22	23.68	7.42	8.21	3.306	.003**	0.90
	post	19	16.26					

small for values between ≥0.20 and<0.50; medium for values between ≥0.50 and<0.80; and large for values ≥0.80).

Results

A comparison of means was done using a Student's t-test to gauge potential changes in the scales of positive and negative attitudes on the CAINTAP. It was noted that the means obtained for both factors in the pre-treatment phase were statistically similar to those obtained from the female participants in Study 1 (Student's t-test; *p*=.725 for positive attitudes, *p*=.550 for negative attitudes).

Given that the scale of positive attitudes showed significant differences in terms of its pre- and post-test variance, a decision was made to do the comparison of means without assuming homoscedasticity. A significant increase of the means obtained on the scale of positive attitudes was corroborated, while the mean attained for the measure of negative attitudes dropped significantly. These changes reached a medium (>.50) and large (>.80) effect size, respectively (see Table3).

Finally, the responses of participants after the intervention to the question about expectations regarding AAI were analyzed. On a 5-point scale, the mean for the sample was 4.95 (with 95% giving the highest score). In terms of the factors to which participants most attributed the change, the best scores went to the dog's behavior and the practical exercises done (Table 4).

General Discussion and Conclusions

This article presents novel information in the area of animal-assisted interventions, offering conclusions relevant to the development

Table 4. Means and percentages of responses with maximum scores for each explanatory factor of change.

	N	M	SD	Minimum	% Maximum
Increase in Expectations	19	4.95	.229	4	94.7%
Behavior of dogs in classroom	20	4.85	.366	4	85.0%
Exercises with dogs	19	4.84	.375	4	84.2%
Information on theory	19	4.42	.692	3	52.6%
Group discussion	19	4.32	.749	3	47.2%
Research results	19	3.84	.958	2	26.3%

of AAI among future Spanish professionals.

The first study boasted a broad sample of students from different disciplines. A vast majority of participants (83%) stated that they were interested in participating in AAI, a finding comparable with that of Berget et al. (2008), Berget and Grepperud (2011), Berget et al. (2013), and Moody et al. (2002), while a minority reported having specific training (14%), a finding similar to that of Black et al. (2011) and Risley-Curtiss (2010), among professionals in other countries. In this regard, there is a clear need for training that is not being met at the undergraduate level.

The logistic regression analysis corroborated that the best predictor of intention for implementing an AAI is having direct experience with animals, a finding in line with that of Berget et al. (2013) but different from that of Berget and Grepperud. (2011). Specifically, having taken care of a pet tripled the likelihood of showing interest in participating in AAI while having experiences with farm animals doubled the likelihood. This last variable did not reach a significance level high enough to justify its inclusion in the regression equation, probably due to the low proportion of valid cases included in the analysis. It will thus be necessary to test its predictive capacity in future studies. The other variables included in the regression equation were the gender of respondents (men expressed more intention to participate in AAI, as also noted by Berget et al., 2013 and López-Cepero et al., 2015) and having had access to information in the mass media.

The low percentage of variance explained by the regression equation can be explained based on the omission of relevant variables in the analysis, like university degree program (Berget et al., 2011; 2013); however, a prior study among students in southern Spain noted that the field of knowledge may not influence attitudes towards AAI, even when students are in undergraduate or graduate programs that are not geared towards interventions with people (Perea-Mediavilla et al., 2014). This similarity in expectations can be interpreted in two ways: either the interest sparked by AAI is so high in our environment that the tools utilized are not sensitive enough to detect the differences among students from different disciplines; or specific training does not increase one's expectations (for example, by reducing irrational notions that animals have a gift for "healing"). In this regard, new efforts should be directed at determining which variables may be of interest in terms of making up one's mind, gathering biographical information about research participants and the role of animals in their environment, among others.

On the other hand, the study of pre- and post- moments represents an initial approach to the effects of direct experience on attitudes towards AAI in a Spanish sample. Two findings should be highlighted: that the information provided by the research team improved participants' perception of the AAI while also reducing associated fears (results that build on the findings of Moody et al., 2002); and that the more technical contents of the intervention, like offering theoretical information, research findings or the group discussion are perceived as less important than those related to the dog and her behavior in the classroom (contents that reflect education) and the exercises in which participants interact with the animal (which show how well-trained she is). To our knowledge, no study in the past has focused on these attributions, making this an initial attempt to examine the significance attributed to different aspects of training. Looking towards the future, it would be important to conduct interventions with a control group and make certain modifications in the study

design, such as using recorded material instead of actually bringing the dog into the classroom; placing more emphasis on different parts of the session; including animals without education and/or training, etc.

Naturally, the use of such a limited and accidental sample (22 female students in a single graduate program) necessitates a careful analysis of the findings. However, both the fears as well as the expected benefits of this group were statistically similar to those of the reference group, making it plausible to think that the observed changes could be reproduced in larger samples.

Together, both studies noted the strengths and weaknesses of perceptions of AAI in Spain. In the first place, the study confirmed that the attitudes towards AAI are predominantly positive, with more than 80% of students willing to conduct them. However, contact with animals is the strongest predictor of this willingness, as opposed to technical material (like research results) or specific training, which have a smaller impact on making this decision. These findings, along with the fact that the expected benefits and fears towards AAI are similar among Spanish students from different fields of study (Perea-Mediavilla et al., 2014), allow us to posit that high expectations for AAI are not associated with an empirically founded knowledge or it being ingrained locally; on the contrary, it is useful to ask whether such expectations are more associated with personal experience and interest in the animals.

This interpretation could explain the low percentage of variance contemplated in the regression equation of the first study while serving as an indicator of a phenomenon that could threaten the development of AAI programs in Spain and other Spanish-speaking countries (from which there is not any available data yet). The fact that professionals can consider the animal to be the core of the

intervention as opposed to a tool for their own professional work indicates that there is confusion between means and ends that could ultimately discredit AAI and, of course, put into risk the potential beneficiaries (provided that the decision of developing these interventions would be based on personal interests, rather than in actual capacities and limitations). Therefore, the results presented here call attention to the need to include AAI within undergraduate study programs in order to provide contextualised information about the available programs and the results of their application. The potential and limitations of these interventions should be taught, thus helping students to clearly distinguish between personal preferences and the practical uses of AAI.

References

Barker, S.B., & Wolen, A.R. (2008). The benefits of human-companion animal interaction: a review. *Journal of Veterinary Medical Education, 35*, 487-495.
DOI: 10.3138/jvme.35.4.487

Berget, B., Ekeberg, O., & Braastad, B.O. (2008). Attitudes to animal-assisted therapy with farm animals among health staff and farmers. *Journal of Psychiatric and Mental Health Nursing, 15*, 576-581.
DOI: 10.1371/journal.pone.0083993

Berget, B., & Grepperud, S. (2011). Animal-assisted interventions for psychiatric patients: beliefs in treatment effects among practitioners. *European Journal of Integrative Medicine, 3*, e91-e96.
DOI: 10.1016/j.eujim.2011.03.001

Berget, B., Grepperud, S., Aasland, O.G., & Braastad, B.O. (2013). Animal-assisted interventions and psychiatric disorders: knowledge and attitudes among general practitioners, psychiatrist, and psychologists. *Society and Animals, 21*, 284-293.
DOI: 10.1163/15685306-12341244

Bernabei, V., De Ronchi, D., La Ferla, T., Moretti, F., Tonelli, L., Ferrari, B., Forlani, M., & Atti, A.R. (2013). Animal-assisted interventions for elderly patients affected by dementia or psychiatric disorders: a review. *Journal of Psychiatric Research, 47*, 762-773. DOI: 10.1016/j.jpsychires.2012.12.014

Black, A.F., Chur-Hansen, A., & Winefield, H.R. (2011). Australian psychologists' knowledge of and attitudes towards animal-assisted therapy. *Clinical Psychologist, 15*, 69-77. DOI: 10.1111/j.1742-9552.2011.00026.x

Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*. (2nd ed). U.S.: Erlbaum.

Filan, S.L., & Llewellyn-Jones, R.H. (2006). Animal-assisted therapy for dementia: a review of the literature. *International Psychogeriatric, 18*, 597-611.
DOI: 10.1017/S1041610206003322

Geist, T.S. (2011). Conceptual framework for animal assisted therapy. *Child and Adolescent Social Work, 28*, 243-256.DOI: 10.1007/s10560-011-0231-3

Halm, M.A. (2008). The healing power of the human-animal connection. *American Journal of Critical Care, 17*, 373-376.

Hart, L.A. (2010). Positive effects of animals for psychosocially vulnerable people: a turning point for delivery. In H.A. Fine (Ed.). *Handbook of animal-assisted therapy: Theoretical foundations and guidelines for practice (3rd ed.)* (pp.59-84). U.S.: Academic Press.

Kazdin, A. (2010). Methodological standards and strategies for establishing the evidence base of animal-assisted therapies. In H. Fine (Ed.). *Handbook of animal-assisted therapy: Theoretical foundations and guidelines for practice* (3rd ed.) (pp.519-546). U.S.: Academic Press.

Kruger, K.A., & Serpell, J.A. (2010). Animal-assisted interventions in mental Elath: definitions and theoretical foundations. In H.A. Fine (Ed.). *Handbook of animal-assisted therapy: Theoretical foundations and guidelines for practice* (3rd ed.) (pp.33-48). U.S.: Academic Press.

López-Cepero, J., Perea-Meadiavilla, M.A., Tejada, A., & Sarasola, J.L. (2015). Validación del Cuestionario de Actitudes ante las Intervenciones Asistidas por Perros (CAINTAP) entre estudiantes universitarios del sur de España: beneficios percibidos y temores ante las intervenciones asistidas. (Submited for publishing).

López-Cepero, J., Rodríguez-Franco, L., Perea-Mediavilla, M.A., Blanco, N., Tejada, A. & Blanco, A. (2014). Animal-assisted interventions: review of current status and future challenges. *International Journal of Psychology and Psychological Therapy, 14*, 85-101.

Marino, L. (2012). Construct validity of animal-assisted therapy and activities. How important is the animal on AAT? *Anthrozoos, 25*, s129-s151. DOI: 10.2752/175303712X13353430377219

Moody, W.J., King, R., & O'Rourke, S. (2002). Attitudes of paediatric medical ward staff to a dog visitation programme. *Journal of Clinical Nursing, 11*, 537-544. DOI: 10.1046/j.1365-2702.2002.00618.x

Muñoz-Lasa, S., Máximo, N., Valero, R., Atín, M.A., Varela, E., & Ferriero, G. (2013). Intervenciones asistidas por animales en neurorrehabilitación: una revisión de la literatura más reciente. *Neurología* (in press). DOI: 10.1016/j.nrl.2013.01.012

Nimer, J., & Lundahl, B. (2007). Animal-assisted therapy: A meta-analysis. *Anthrozoos, 20*, 225-238. DOI: 10.2752/089279307X224773

Perea-Mediavilla, M.A., López-Cepero, J., Tejada-Roldán, A., & Sarasola, J.L. (2014). Intervenciones asistidas por animales y calidad de vida: expectativas en estudiantes universitarios andaluces. *Escritos de Psicología, 7*, 10-18. DOI: 10.5231/psy.writ.2014.1909

Perkins, J., Bartlett, H., Travers, C., & Rand, J. (2008). Dog-assisted therapy for older people with dementia. *Australasian Journal of Ageing, 27*, 177-182. DOI: 10.1111/j.1741-6612.2008.00317.x

Risley-Curtiss, C. (2010). Social work practitioners and the human-companion animal bond: A national study. *Social Work*, 55, 38-46.

Souter, M.A., & Miller, M.D. (2007). Do animal-assisted activities effectively treat depression? A meta-analysis. *Anthrozoos, 20*, 167-180.
DOI: 10.2752/175303707X207954

Virués-Ortega, J. & Buela-Casal, G. (2006). Psychophysiological effects of human-animal interaction: theoretical issues and long-term interaction effects. *The Journal of Nervous and Mental Disease, 194*, 52-57. DOI: 10.1097/01.nmd.0000195354.03653.63

Wesley, M.C. (2008). *Animal assisted therapy and the therapeutic alliance in the treatment of substance dependence* (doctoral dissertation). Lindsey Wilson College, KY, US.

Wesley, M.C., Minatrea, N.B., & Watson, J.C. (2009). Animal-assisted therapy in the treatment of substance dependence. *Anthrozoos, 22*, 137-148.