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Attitudes and intention of using animal-assisted interventions: Associated variables among southern Spain psychologists --Manuscript Draft--

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| Abstract: | <p>The present study examines acceptance toward animal-assisted interventions (AAI) among a total of N = 332 Spanish psychologists (mostly women). Participants filled out measures of their attachment to animals, empathy, anthropomorphism, attitudes toward AAI, information on AAI, and their intention to use AAI. The results showed that over 85% of the participants were interested in using AAI, even though fewer than 20% referred to having AAI training. Considering companion animals as person substitutes and specific training were associated with better expectations from AAI, while personal distress was negatively associated. The variables that influenced interest in developing AAI were, in decreasing order, positive attitudes, anthropomorphism, being female, and training, explaining 59% of the variance. Altogether, the results note that AAI enjoy high acceptance among psychology professionals, but interest in their implementation was stronger when participants had positive attitudes towards AAI, anthropomorphism was high, and were female than resulted from specific training.</p> |
| Keywords: | Animal-assisted intervention; Animal-Assisted Therapy; intention of use; Human-animal interaction; attitudes |
| Funding Information: | |
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Dear editor,

There I attach a new version of the manuscript. We included all the style changes –thank you so much for the edition- and introduced minor changes where needed.

We want to thank you –editorial team, reviewers- for your interest and insights. I would specially thank you for mentioning that the English, although improvable, was right; that is one of the most worrying insecurities for non-English speakers.

Please let us know if there are any further changes needed.

Kind regards from Spain.

Attitudes and intention of using animal-assisted interventions: Associated variables among southern Spain psychologists

Running head: AAI among Spanish psychologists

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ABSTRACT. The present study examines acceptance toward animal assisted interventions (AAI) among a total of N = 332 Spanish psychologists (mostly women). Participants filled out measures of their attachment to animals, empathy, anthropomorphism, attitudes toward AAI, information on AAI, and their intention to use AAI. The results showed that over 85% of the participants were interested in using AAIs, even though fewer than 20% referred to having AAI training. Considering companion animals as person substitutes and specific training were associated with better expectations from AAI, while personal distress was negatively associated. The variables that influenced interest in developing AAI were, in decreasing order, positive attitudes, anthropomorphism, being female, and training, explaining 59% of the variance. Altogether, the results note that AAIs enjoy high acceptance among psychology professionals, but interest in their implementation was stronger when participants had positive attitudes towards AAI, anthropomorphism was high, and were female than resulted from specific training. Representing and publicizing AAIs as evidence-based treatments is important to enhance professional growth in the field.

Keywords: Animal-assisted intervention; animal-assisted therapy; intention of use; human-animal interaction; attitudes.

Acknowledgements: present study was carried out with the support of the Official Psychology Association of Eastern Andalusia (Colegio Oficial de Psicología-Andalucía Occidental)

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4 The term animal-assisted intervention (AAI) includes a variety of professional interventions,
5
6 characterized by taking advantage of the benefits of human-animal interaction to improve the
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8 likelihood of success. Thus, AAI is not a different kind of intervention, but a modality of well-known
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10 disciplines such as psychotherapy, education, and others (Animal-Assisted Intervention
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12 International, 2013; López-Cepero, 2020).
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16 Interest in the possibilities of AAI for improving mental health intervention has been
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18 analyzed in the literature with studies performed in Norway (Berget, Grepperud, Aasland &
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20 Braadstad, 2013), the USA (Thew, Marco, Erdman & Caro, 2015), Australia (Black, Chur-Hansen &
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22 Winefield, 2011), and elsewhere. Qualitative studies have suggested that mental health
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24 practitioners expect positive effects from the presence of the animal on the therapeutic relationship
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26 and the client's process of change (e.g., Black et al., 2011; Thew et al., 2015). Although some studies
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28 also emphasize some problems, such as risks associated with allergies, heavier workload, or
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30 skepticism of other professionals, those qualms tend to be minimized, in line with a positive bias
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32 derived from overrepresentation of persons interested in these interactions (Herzog, 2011).
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38 The literature shows a lack of information on training plans for health professionals,
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40 questioning whether the decision of implement AAI rely on technical criteria or on personal
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42 preferences. Some studies have sought to establish which variables associate with positive attitudes
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44 toward AAI and intention of use, assessing the role of both personal and training variables. The sex
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46 of the participant is the variable which has received the most attention in the literature. For
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48 example, with mental health practitioners, Berget & Grepperud (2011) found better attitudes
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50 toward AAI among women than men, while Berget et al. (2013) found more support for AAI among
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52 men than women.
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4 The impact of the bond with animals on attitudes toward AAI has been analyzed in other
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6 studies carried out with social workers (Risley-Curtiss, Rogge & Kawan, 2013) and university
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8 students (López-Cepero, Perea-Mediavilla, Sarasola & Tejada, 2015), which agree in noting a direct
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10 relationship between cohabitating and intention of using AAI. However, other studies found no
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12 relationship at all (e.g., Rabbit, Kazdin & Hong, 2014). It should also be mentioned that these studies
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14 only assessed cohabitating, without measuring the attachment generated.
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19 In a second group, several studies have concentrated their attention on the impact of
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21 specific information on attitudes and intention to use AAI. In her review, Trembath (2014)
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23 mentioned that most mental health professionals who used AAI considered themselves self-taught.
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25 Thew et al. (2015) found that over 65% of American psychologists reported having very little or no
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27 information on AAI, even though 68% said they would be willing to use them in their professional
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29 practice. In Spain, the study by López-Cepero, Perea-Mediavilla, Tejada et al. (2015) with students
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31 in various degree programs did not find any relationship between training or experience and
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33 intention to use AAI, with only 25% of the participants having consulted articles on AAI, and 14%
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35 having some type of training.
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41 Increasing training in courses and/or direct experience does seem to have a positive impact
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43 on attitudes toward and intention to use AAI. López-Cepero, Perea-Mediavilla, Sarasola et al. (2015),
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45 for example, found an improvement (an increase in positive attitudes and intention to use AAI, and
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47 a decrease in negative attitudes) after a four-hour training session, and Bibbo (2013) and Moody,
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49 King and O'Rourke (2002) described improvements in attitudes of medical professionals after direct
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51 experience with an AAI program. However, the literature does not include specific studies on the
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53 change in attitudes in mental health professionals, nor its relative weight against other variables.
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4 Some studies have shown a positive relationship between attitudes toward AAI and
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6 attitudes toward companion animals in general (e.g., Crossman & Kazdin, 2017; Trembath, 2014).
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8 Therefore, reviewing studies on attitudes toward animals can offer some clues to possible
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10 precursors of interest in AAI. A review of the literature shows that two variables have received the
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12 most attention: empathy (tendency to consider others' viewpoints and vicariously experience their
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14 emotional states; Ingoglia, Lo Coco & Albiero, 2016) and anthropomorphism (attribution of human
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16 qualities to non-human beings; Brown & McLean, 2015). Taylor and Signal (2005) found that the
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18 empathic concern scale was associated with better attitudes toward animals in Australian
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20 universities, and Menor-Campos et al. (2019) found a correlation between empathic concern and
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22 concern for the use of animals in various activities (such as research or teaching) in a sample of
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24 Spanish veterinary students. In a regression study done in Rumania, Apostol et al. (2013) mentioned
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26 two empathy scales (perspective-taking and empathic concern), but also an anthropomorphism
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28 scale to have positive correlation with better attitudes toward animals. In all three cases, women
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30 showed more positive attitudes toward animals.
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38 Although these references do not represent an exhaustive review (for further information:
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40 Amiot & Bastian, 2017; Herzog, 2007; Letheren, Kuhn, Lings & Pope, 2016; López-Cepero, 2019),
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42 they illustrate three important points: Some explanatory variables (such as sex of the participant,
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44 attachment to animals, empathy and anthropomorphism) have been repeatedly pointed out as
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46 possible precursors of attitudes toward animals; it is likely that there are interactions among these
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48 variables in their effect on these attitudes; and the wide diversity in samples (sex, profession, origin,
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50 and so on) and in study design, impedes firm conclusions. Thus, more information on the role those
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52 variables play is needed.
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57 In Spain, AAI have received growing attention in generalist communication media (López-
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59 Cepero, Perea-Mediavilla, Tejada et al., 2015). Psychology is the profession most represented within
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4 the entities devoted to developing AAI in Spain (Martos-Montes et al., 2015). However, the
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6 literature does not offer information on the attitudes of the psychology professionals toward AAI,
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8 nor the variables (personal characteristics, specific training, or a combination of these) that could
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10 have an impact on these attitudes or an intention to use AAI. Therefore, this study set three
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12 objectives:
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17 1) Analyze the level of acceptance of AAI (specifically, attitudes toward and intention to use
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19 AAI) among psychology professionals in Spain;
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22 2) Test the impact of personal variables (sex, empathy, anthropomorphism, and attachment
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24 to animals) and training (generalist and scientific-technical knowledge) on attitudes toward AAI; and
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27 3) Test the impact of personal and training variables on the intention to use AAI.
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33 MATERIALS AND METHODS

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40 *Participants.* Participants were 332 psychology professionals aged 21 to 82 ($M = 39.2$; $SD = 11.0$). Of
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42 these, 84.1% were women and 15.7% were men ($N = 5$ chose “other”). All the participants had
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44 degrees in psychology (undergraduate and/or postgraduate), with $M = 10.0$ years (0 to 40 years, SD
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46 = 9.6 years) of work experience, and agreed to participate in the study voluntarily. Most (80.4%) of
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48 the participants said they had cared for companion animals at some time in their life, and 59.6%
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50 said they did so at the present time. By species, 70.8% had had dogs, 44.6%, cats, and 62.7%, other
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52 species of animals (small rodents, rabbits, birds, fish, and so forth). Around 80% of the participants
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54 considered themselves animal lovers, and 67% mentioned knowing about animal-assisted
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56 interventions.
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7 *Materials.* The participants completed a battery of six self-administered questionnaires, applied on
8
9 an online platform. The variables evaluated were:

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12 a) *Attitudes toward AAI:* A modified version of the Attitudes Towards Dog-Assisted Interventions
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14 (*Cuestionario de Actitudes hacia las Intervenciones Asistidas por Perros-CAINTAP*; López-Cepero,
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16 Perea-Mediavilla, Tejada et al., 2015), adapted to enable its application to intervention assisted by
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18 dogs, horses and cats was applied. The questionnaire, based on the *Brisbane Attitudes Towards*
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20 *Animal Assisted Therapy* (BATAAT; Moody et al., 2002), includes 20 items which evaluate positive
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22 expectations (11 items, EAP alpha = .904; i.e., *AAI will help clients to relax, AAI will make the center*
23
24 *a better place to work in*) and negative expectations (9 items, EAP alpha = .874; i.e., *Animals will*
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26 *probably damage instruments and installations, Animals may worsen respiratory problems*) for AAI,
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28 to be answered on a seven-point Likert scale of agreement (from 1-strongly disagree to 7-strongly
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30 agree).

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37 b) *Intention to use AAI:* Evaluated by three items (*I think AAI would be useful in my place of work, I*
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39 *would recommend performing AAI in my place of work, and I would be interested in engaging in*
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41 *AAI*), to be answered on a four-point Likert scale (0-not at all, 3-very much). This scale had a
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43 standardized alpha = .883.

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47 c) *Amount of information about AAI:* Four items evaluate access to information on AAI through
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49 generalist information media (1 item) or specialized (3 items referring to scientific-technical texts,
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51 professional experience and specialized training; EAP alpha = .832). The answers are given on a four-
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53 point Likert scale (0-never/no training, 3-frequent/specialized training).

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57 d) *Anthropomorphism:* An adapted version of the instrument by Brown and McLean (2015),
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59 composed of seven items (i.e., *I think my pet has her own ideas*) to be answered on a seven-point
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4 Likert scale of agreement (1-strongly disagree, 7-strongly agree) was used. The instrument showed
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6 adequate reliability (EAP Alpha = .904).
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10 *e) Attachment to companion animals:* The Spanish translation of the Lexington Attachment to Pets
11 Scale (LAPS; González, Quezada & Landero, 2014; Johnson, Garrity & Stallones, 1992) was
12 administered. This instrument has 23 items answered on a seven-point Likert scale (1-strongly
13 disagree, 7-strongly agree). The LAPS provides information on three scales: general attachment (11
14 items, i.e., *I consider my pet to be a great companion*; EAP alpha = .979), people substituting (7
15 items, i.e., *My pet means more to me than any of my friends*; EAP alpha = .933) and animal rights (5
16 items, i.e., *I believe that pets should have the same rights and privileges as family members*; EAP
17 alpha = .922).
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21 *f) Empathy:* The brief version of the Interpersonal Reactivity Index (IRI; Ingoglia et al. 2016) was
22 administered. This has four scales: perspective taking (i.e., *I often have tender, concerned feelings*
23 *for people less fortunate than me*; EAP alpha = .811), personal distress (i.e., *Being in a tense*
24 *emotional situation scares me*; EAP alpha = .844), empathic concern (i.e., *When I see someone being*
25 *treated unfairly, I sometimes don't feel very much pity for them*; EAP alpha = .800) and fantasy (i.e.,
26 *When I am reading an interesting story or novel, I imagine how I would feel if the events in the story*
27 *were happening to me*; EAP alpha = .853). Each of the scales had four items answered on a seven-
28 point Likert scale (1-strongly disagree, 7-strongly agree).
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32 *Procedure.* The research team adapted the questionnaires selected for their administration to the
33 target population. When the materials were unavailable in Spanish, parallel translations were made
34 by each researcher and the differences found were discussed until a consensus was arrived at.
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38 The battery of questionnaires was designed to be administered on an online platform.
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40 Before they could access the evaluation, the participants gave their express consent for
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4 participating, and were told the objectives of the study, that their participation was voluntary, and
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6 that their answers were anonymous, and that they could quit at any time if they preferred not to
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8 send in the data. Contact information was also provided for solving any questions, if necessary.
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11 The study was performed in collaboration with the Seville branch of the *Colegio Oficial de*
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13 *Psicología de Andalucía Oriental* [Official Psychology Association of Eastern Andalusia] (COP-AO;
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15 Andalusia, Spain), and was approved by its institutional review board. The study was publicized in
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17 three rounds by sending it to the email addresses available through the COP-AO. The answers were
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19 collected from a total of 428 participants, of whom 96 (22.4%) were eliminated as in other disciplines
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21 ($N = 4$) or students ($N = 92$).
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30 *Statistical procedures.* This study involved descriptive procedures (measures of overall trend,
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32 dispersion, distribution and frequency), bivariate correlations (Pearson's r), Student's t-test for
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34 comparison of means, and linear regressions (all using $\alpha = .05$, two-tailed), available in SPSS
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36 software version 26. EAP alpha reliability (Bayes Expected A Posteriori alpha; acceptable at $\alpha >$
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38 $.700$) was also estimated for the various scales using FACTOR, version 10.10 (Ferrando & Lorenzo-
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40 Seva, 2016). Finally, the effect size was calculated with Cohen's d (Cohen, 1988), considering small
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42 effect for values ≈ 0.20 ; medium for values ≈ 0.50 ; and large for values ≈ 0.80 .
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50 RESULTS

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52 First, descriptive results were found for the quantitative variables (Table 1). The means of
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54 interest in AAI and positive attitudes toward AAI showed means statistically higher than the
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56 midpoint on the answer scales with moderate effect sizes (respectively: *expected* $M = 4.5$, $t_{(gl = 331)} =$
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4 13.145, $p < .001$, $d = 0.72$; *expected M* = 44, $t_{(gl = 331)} = 13.075$, $p < .001$, $d = 0.72$), while the average
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6 negative attitudes toward AAI were statistically lower than the midpoint on the scale, with a large
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8 effect size (*expected M* = 36, $t_{(gl = 331)} = 21.721$, $p < .001$, $d = 1.19$).
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15 *PLEASE INSERT TABLE 1 AROUND HERE*
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21 Practically all of the participants (98.5%) said they had received information on AAI in
22 generalist media, while access to scientific-technical resources was lower (36.4% had not looked it
23 up in any technical text, 75.9% had no experience, and 80.4% lacked training). Around two thirds of
24 the participants considered AAI as potentially useful and thought positively carrying them out in
25 their place of work, with 90% interested in engaging in AAI. More details are provided in Table 2.
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37 *PLEASE INSERT TABLE 2 AROUND HERE*
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43 Pearson’s bivariate correlations among all quantitative variables included in the study were
44 analyzed. Given the aims of the study, analysis focused on the relationship between the three
45 outcome variables (positive and negative attitudes toward AAI, and interest in their
46 implementation) and information on AAI, empathy, attachment to companion animals, and
47 anthropomorphism. Seven of these measurements showed significant correlations with the three
48 outcome scale. Intention to use AAI also had significant correlations with the positive ($r = .745$, $p <$
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10 For the second objective of the study, two linear regressions were performed to find out
11 how different personal variables (participant sex, anthropomorphism, attachment to animals,
12 empathy) and training affected attitudes toward AAI, measured with the CAINTAP. Complete
13 records were available for 90% of the participants ($N = 298$) for these calculations. The regression
14 model for the CAINTAP positive attitudes scale was statistically significant ($F_{(11, 181)} = 11.841; p <$
15 $.001$), with explained variance near 32% ($R^2 = .317; adjusted R^2 = .290$). Higher level of scientific-
16 technical knowledge and person substituting related to higher positive attitudes, while empathic
17 stress showed the opposite association (Table 4). The regression model for negative attitudes scale
18 was statistically significant ($F_{(11, 181)} = 9.228; p < .001$) and explained about 27% of the variance ($R^2 =$
19 $.265; adjusted R^2 = .237$), including a direct relationship with personal distress, and an inverse
20 relationship with scientific-technical knowledge. These results are shown in Table 5. In both
21 analyses, zero-order correlations were bigger than beta coefficients, showing redundancy among
22 variables.
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50 To meet the third objective of the study, a linear regression was performed to test the
51 relationship between all the above variables on interest in carrying out AAI in their place of work.
52 The regression model was statistically significant ($F_{(13, 279)} = 31.210, p < .001$) and included four
53 variables (positive attitudes, anthropomorphism, being female and scientific-technical knowledge),
54 with an explained variance of over 59% ($R^2 = .593, adjusted R^2 = .574$). Again, zero-order correlations
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4 showed to be bigger than beta coefficients, showing redundancy among variables. The regression
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6 coefficients are shown in Table 6.
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19 **DISCUSSION AND CONCLUSION**
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22 This study provides novel information on psychologists' attitudes toward AAI, their
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24 intention of implementing them, and the variables that may influence this decision. This information
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26 provides new insights regarding the level of acceptance of AAI in Spain, which is useful for facing
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28 immediate professional challenges among Spanish psychologists.
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32 In the first place, around 90% of the participants said they were interested in carrying out
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34 AAI in their professional practice. These results were higher than those found in other international
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36 samples (Berget et al., 2013; Thew et al., 2015), while specific training and direct experience with
37
38 these interventions were in the minority. Furthermore, the answers to the CAINTAP showed notably
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40 positive expectations, with low fear levels, and with a strong negative correlation between scales
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42 (> .500). Altogether, these results suggest strong polarization of expectations as noted by Herzog
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44 (2011), which may be related to biographic elements and not training. These results show the
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46 urgency for developing training programs for Spanish psychology professionals.
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52 Attachment to animals proved to have a clear correlation to attitudes towards AAI and
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54 intention of use. One of the scales of LAPS (person substituting) showed to be the strongest
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56 precursor of positive attitudes toward AAI, in agreement with previous studies (Crossman et al.,
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58 2017; Trembath, 2014). These results support the idea that bonding with animals is the variable that
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4 influences expectations from AAI, more than just living with companion animals, as well as
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6 highlighting the importance of the roles and status which humans attribute to companion animals,
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8 beyond the intensity of the bond.
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11 This study included four measures of empathy, of which only one—personal distress,
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13 referring to emotional reactivity to tense interaction—predicted participant attitudes. These results
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15 do not coincide with the findings of Taylor et al. (2005), the only study found which included all the
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17 IRI scales (although it focused on attitudes toward animals as companions, not as an element to be
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19 included in the workplace). An alternative hypothesis stemming from the composition of the sample
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21 (psychologists) may influence the values found by the IRI, a point that could be tested in future
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23 studies by including comparison groups.
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29 Scientific-technical training was shown to have an impact on perception of AAI, improving
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31 expectations and intention of use, and reducing qualms associated with its practice. These results
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33 are compatible with those noted by Risley-Curtiss et al. (2013) with social workers, but do not agree
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35 with the only study carried out in Spain (López-Cepero, Perea-Mediavilla, Sarasola et al., 2015) with
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37 university students. Differences between the present and previous studies rely on the evaluation
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39 method, which involved evaluation of several different aspects of training, and used ordinal (instead
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41 of dichotomous) scales to acquire the information. Given the low percentage of professionals who
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43 had read scientific texts on AAI, or had had specific training and/or direct experience with AAI,
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45 assembling all these questions in a single measure assists in providing a more comprehensive view
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47 of the level of knowledge of the participants. In addition, separating professional and generalist
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49 knowledge was demonstrated to be a useful strategy, given that practically the entirety of
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51 participants reported having received information through mass communication media.
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4 For participants' intention to use AAI, this study included a measurement scale combining
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6 several items, enabling ordinal reading that was not present in previous initiatives (i.e., Risley-Curtiss
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8 et al., 2013; López-Cepero, Perea-Mediavilla, Sarasola et al., 2015). The main predictor variable was
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10 found in the CAINAP positive attitudes scale, for which the beta was five to seven times higher than
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12 anthropomorphism, sex, or scientific-technical training. This result supports its validity and
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14 encourages us to explore its usefulness in research and in the applied field (for example, for
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16 detecting exaggerated expectations from AAI among professionals). The lack of statistical
17
18 significance in its relationships to the attachment and empathy measurements may be explained by
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20 covariance between variables, as shown by zero-order correlation. Those findings are in accordance
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22 with Apostol et al. (2013) or Menor-Campos et al. (2019), and point out the need for further studies
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24 in order to learn more on the relationships among anthropomorphism, empathy, attachment and
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26 other personal variables.
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33 Among the limitations of the study is the possible sampling bias, which could have led to
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35 inclusion of more participants interested in AAI or in human-animal bonding (Herzog, 2011). The
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37 sampling method, sending emails to all the professionals in the official association, and the offer of
38
39 an incentive for participating, attempted to palliate this possible bias. However, the 298 participants
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41 included in the regression analysis all described some relationship with companion animals (present
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43 or past), which was also strongly skewed – with a means over 57 points out of a 77 maximum–
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45 impeding the evaluation of the differential impact of attachment to animals. Future studies should
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47 procure participation of persons with no interest in AAI for a wider and more comprehensive
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49 description of attitudes and intention of use of these interventions. However, the study provides
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51 novel useful information for psychology professionals, as well as knowledge of AAI development in
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53 Spain. The findings described justify the development of new training and publicizing initiatives for
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these professionals in order to assist in decision-making based on their efficacy, efficiency and safety
for all the animals—human and nonhuman—involved in AAI.

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Table 1. Descriptive Results for the Study Variables.

| | <i>N</i> | Range | <i>M</i> | <i>SD</i> | Skew | <i>SE</i> | Kurtosis | <i>SE</i> |
|---------------------------------|----------|-------|----------|-----------|--------|-----------|----------|-----------|
| Interest in carrying out AAI | 332 | 0-9 | 6.26 | 2.44 | -.630 | .134 | -.441 | .267 |
| Attitudes toward IAAs (CAINTAP) | | | | | | | | |
| Positive attitudes | 332 | 11-77 | 52.57 | 11.94 | -.470 | .134 | .162 | .267 |
| Negative attitudes | 332 | 9-45 | 24.69 | 9.49 | .682 | .134 | .649 | .267 |
| Empathy (IRI) | | | | | | | | |
| Perspective-taking | 311 | 4-28 | 21.78 | 3.295 | -.625 | .138 | .791 | .276 |
| Fantasy | 311 | 4-28 | 20.07 | 4.370 | -.489 | .138 | .251 | .276 |
| Empathic concern | 311 | 4-28 | 22.17 | 3.431 | -.701 | .138 | .660 | .276 |
| Personal distress | 311 | 4-28 | 12.34 | 3.998 | .112 | .138 | -.536 | .276 |
| Attachment to animals (LAPS) | | | | | | | | |
| General attachment | 298 | 11-77 | 57.27 | 15.13 | -1.138 | .141 | 1.139 | .281 |
| Person substituting | 298 | 7-49 | 27.52 | 10.44 | -.050 | .141 | -.565 | .281 |
| Rights | 298 | 5-35 | 26.07 | 6.48 | -.574 | .141 | -.295 | .281 |
| Anthropomorphism | 298 | 7-49 | 32.24 | 9.27 | -.629 | .141 | .211 | .281 |
| Information about AAI | | | | | | | | |
| Generalist information | 332 | 0-3 | 2.15 | 0.926 | -.440 | .141 | -1.402 | .281 |
| Technical information | 332 | 0-9 | 1.77 | 2.04 | 1.57 | .141 | 2.127 | .281 |

M = means; SD = standard deviation; SE = standard error

Table 2. Percentages of Answers to Questions on Training and Intention of Use

| | Information on AAI | | | | Interest in carrying out AAI | | |
|--------|--------------------|--------------|------------|----------|------------------------------|-------------|----------------------------------|
| | Internet/TV | Publications | Experience | Training | Useful | Recommended | Interested in engaging in AAI |
| None | 1.5 | 36.4 | 75.9 | 80.4 | 12.0 | 12.3 | 3.6 |
| Little | 31.6 | 40.1 | 12.7 | 13.3 | 20.2 | 20.5 | 8.1 |
| Some | 17.2 | 5.7 | 4.5 | 2.1 | 34.6 | 32.2 | 25.6 |
| Much | 49.7 | 17.8 | 6.9 | 4.2 | 33.1 | 34.9 | 62.7 |

Table 3. Pearson's Bivariate Correlations Between Variables in the Study

| | | CAINTAP positive | CAINTAP negative | Interest in AAI |
|--------------------------|----------|---------------------|---------------------|-----------------|
| Technical knowledge AAI | <i>r</i> | .260*** | -.272*** | .289*** |
| | <i>p</i> | (.000) | (.000) | (.000) |
| Generalist information | <i>r</i> | .103 | -.042 | .162** |
| | <i>p</i> | (.061) | (.446) | (.003) |
| LAPS Attachment | <i>r</i> | .473*** | -.428*** | .428*** |
| | <i>p</i> | (.000) | (.000) | (.000) |
| LAPS Person substituting | <i>r</i> | .460*** | -.349*** | .429*** |
| | <i>p</i> | (.000) | (.000) | (.000) |
| LAPS Rights | <i>r</i> | .469*** | -.422*** | .407*** |
| | <i>p</i> | (.000) | (.000) | (.000) |
| IRI Perspective-taking | <i>r</i> | .218*** | -.181** | .201*** |
| | <i>p</i> | (.000) | (.001) | (.000) |
| IRI Fantasy | <i>r</i> | .156** | -.119* | .107 |
| | <i>p</i> | (.006) | (.036) | (.059) |
| IRI Empathic concern | <i>r</i> | .157** | -.119* | .163** |
| | <i>p</i> | (.006) | (.036) | (.004) |
| IRI Personal distress | <i>r</i> | -.117* | .134* | -.032 |
| | <i>p</i> | (.040) | (.018) | (.569) |
| Anthropomorphism | <i>r</i> | .355*** | -.319*** | .380*** |

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|------------------|----------|--------|----------|---------|
| | <i>p</i> | (.000) | (.000) | (.000) |
| CAINTAP positive | <i>r</i> | | -.549*** | .745*** |
| | <i>p</i> | | (.000) | (.000) |
| CAINTAP negative | <i>r</i> | | | -.454* |
| | <i>p</i> | | | (.000) |

p* < .05; *p* < .01; ****p* < .001

Table 4. Regression Coefficients for Positive Attitudes Toward AAI.

| | <i>Beta</i> | <i>Zero-order r</i> | <i>t</i> | <i>p_{Beta}</i> |
|----------------------------|-------------|---------------------|----------|-------------------------|
| (Constant) | | | 4.634 | .000*** |
| LAPS Person substituting | .198 | .474 | 2.069 | .039* |
| Technical Knowledge of AAI | .142 | .254 | 2.773 | .006** |
| IRI Personal distress | -.133 | -.133 | -2.531 | .012* |
| LAPS Rights | .153 | .479 | 1.430 | .154 |
| IRI Perspective taking | .110 | .225 | 1.924 | .055 |
| LAPS Attachment | .096 | .481 | 0.855 | .394 |
| Anthropomorphism | .079 | .367 | 1.183 | .238 |
| IRI Empathic concern | -.072 | .172 | -0.999 | .318 |
| IRI Fantasy | .041 | .164 | 0.614 | .540 |
| Generalist information | .019 | .072 | 0.373 | .710 |
| Sex (female) | .011 | .033 | 0.209 | .834 |

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 5. Regression Coefficients for Negative Attitudes Toward AAI.

| | <i>Beta</i> | <i>Zero-order r</i> | <i>t</i> | <i>p</i> _{Beta} |
|----------------------------|-------------|---------------------|----------|--------------------------|
| (Constant) | | | 8.964 | .000*** |
| Technical Knowledge of AAI | -.155 | -.248 | -2.913 | .004* |
| IRI Personal distress | .136 | .148 | 2.503 | .013* |
| LAPS Rights | -.208 | -.429 | -1.877 | .062 |
| LAPS Attachment | -.198 | -.431 | -1.710 | .088 |
| Anthropomorphism | -.115 | -.327 | -1.652 | .100 |
| Sex (female) | -.094 | -.096 | -1.798 | .073 |
| IRI Perspective taking | -.091 | -.174 | -1.531 | .127 |
| IRI Empathic concern | .088 | -.113 | 1.180 | .239 |
| LAPS Person substituting | .067 | -.359 | 0.673 | .502 |
| IRI Fantasy | -.041 | -.112 | -0.590 | .556 |
| Generalist Information | .024 | -.036 | 0.447 | .655 |

p* < .05; *p* < .01; ****p* < .001

Table 6. Linear Regression for Interest of Using AAI.

| | <i>Beta</i> | <i>Zero-order r</i> | <i>t</i> | <i>p</i> _{Beta} |
|----------------------------|-------------|---------------------|----------|--------------------------|
| (Constant) | | | -2.970 | 0.003** |
| CAINTAP-positive | 0.639 | 0.737 | 12.692 | 0.000*** |
| Anthropomorphism | 0.119 | 0.389 | 2.278 | 0.023* |
| Sex (female) | 0.105 | 0.131 | 2.678 | 0.008** |
| Technical Knowledge of AAI | 0.088 | 0.283 | 2.162 | 0.031* |
| LAPS- Person substituting | 0.077 | 0.441 | 1.028 | 0.305 |
| IRI- Perspective taking | 0.066 | 0.216 | 1.477 | 0.141 |
| IRI- Personal distress | 0.063 | -0.034 | 1.532 | 0.127 |
| Generalist information | 0.057 | 0.127 | 1.435 | 0.152 |
| IRI- Fantasy | -0.046 | 0.124 | -0.885 | 0.377 |
| LAPS- Attachment | -0.036 | 0.431 | -0.416 | 0.678 |
| LAPS- Rights | -0.032 | 0.417 | -0.380 | 0.705 |
| CAINTAP-negative | -0.044 | -0.467 | -0.900 | 0.369 |
| IRI- Empathic concern | -0.017 | 0.171 | -0.300 | 0.764 |

p* < .05; *p* < .01; ****p* < .001