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Bereavement for Companion Animals: Intensity, Moderating Variables, and Effects on Wellbeing

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ABSTRACT

This study examines the intensity of grieving experienced by volunteers from animal protection organizations in southern Spain. A total of 130 volunteers (86% female; $M = 42.0$ years) reported on their reactions to loss following the death of animals under their care, levels of empathy, anthropomorphism, and attachment experienced toward these animals, received social support, and overall health status. The results showed that 65.5% of participants displayed signs of general complicated grieving (83% on the grief scale; 40% on the anger scale; 47% on the guilt scale). The intensity of grief was associated with higher symptomatology (linear polynomial ANOVA, $^{**}p < .01$). The linear regression analysis revealed a relationship between attachment levels, anthropomorphism, empathy, family support (inverse), and the intensity of grieving experienced ($^{*}p < .05$). Taken together, these findings indicate the existence of complicated mourning reactions among volunteer staff in animal protection organizations, justifying the development of specific prevention programs.

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Companion animals; bereavement; grieving; health outcomes; volunteers; animal protection organizations

The relationship between humans and animals is filled with nuances. While most of the Western world considers dogs and cats as preferred companion animals (Gray & Young, 2011; López-Cepero et al., 2021), even those species can be valued solely for their productive utility (e.g., providing property security or pest control) or classified as a nuisance to be eliminated (Bradshaw, 2017; Herzog, 2011). Although the status granted to animals may vary, the literature reflects that those considered companion animals are often included as part of the family (Irvine & Cilia, 2017; Power, 2008). This sociological shift, coupled with a relatively short lifespan for most companion animals, invites an examination of the grieving process surrounding the death of non-human animals.

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The literature indicates some similarities in the experience of loss when it comes to humans and companion animals. On the one hand, grieving reactions to an animal fit within the signs described in the DSM-5 for grief disorder (Lee, 2020), and the consequences for the survivor's mental health can be similar (including somatic symptoms, anxiety, depression, and social dysfunction; Habarth et al., 2017). Several studies have indicated that the intensity of grief over an animal may be lower compared to that associated with human loss, although these differences have small to negligible effect sizes (Eckerd et al., 2016; Lavorgna & Hutton, 2019). Regarding differences, some studies have found greater idealization of non-human animals compared to humans (Rémillard et al., 2017), a higher frequency of exposure to loss due to the shorter lifespan of most companion animals (Laing & Maylea, 2018), and a higher frequency of losses mediated by euthanasia, with much more limited social and professional support than in the case of humans (Davis et al., 2003; Lavorgna & Hutton, 2019).

Beyond subjective experiences, the literature points out significant differences regarding the available rituals for bidding farewell to deceased animals. While some studies indicate that elegies for pets mimic those written for human beings (Rennard et al., 2019), and that funeral services for animals have gradually gained ground (Chur-Hansen et al., 2011), transitional rituals such as wakes, burials, or other ceremonies have not been established as a standard in Western societies. The importance of these gaps lies in the fact that when loss is not recognized as significant (disenfranchised grief), it is likely that mourning will be kept secret (Cordaro, 2012; Rennard et al., 2019).

Most of the available studies on pet bereavement have been conducted with cohabitating participants, with the Pet Bereavement Questionnaire (PBQ; Hunt & Padilla, 2006) being one of the most widely used specific tools. For example, a study conducted in Ghana found that 76.4% of individuals showed signs of complicated grief, estimated by surpassing the midpoint of the response scale (Botchway et al., 2022). Weighted means for the three scales of the PBQ show that the most intense reaction is sadness over the animal, followed by signs of guilt and anger, a consistent finding in studies conducted in Australia (Spain et al., 2019), Italy (Testoni et al., 2019), and Ghana (Botchway et al., 2022). So far, comparable data are not available for Spanish or Ibero-American samples.

This present study focuses on the loss experience of volunteer personnel in animal welfare organizations, who represent the majority of the available workforce in animal protection organizations in Spain (Fundación Affinity, 2018). Although shelter volunteers do not necessarily live with the animals they care for, they frequently come into contact with animals that have been victims of abuse and often experience their death, resulting in

continuous exposure to traumatic experiences (Figley & Roop, 1997; Mitchell, 2020; Polachek & Wallace, 2018). While the literature includes a considerable number of studies conducted with veterinarians and veterinary nurses (Macía et al., 2022; Scotney et al., 2019), volunteer personnel in animal shelters have received limited attention (Deacon & Brough, 2021).

Beyond measuring the existence of the phenomenon, understanding which variables predispose to or protect against adverse grieving reactions is of interest to improve the supervision of volunteers (e.g., assigning tasks within the organization or monitoring their performance). Social support emerges as one of the main moderators of adverse grieving reactions in companion animal loss (Cleary et al., 2022; Park et al., 2023). This support has a protective effect in the face of stress symptoms, both among those living with the animal (King & Werner, 2011) and in personnel of animal welfare organizations (Marton et al., 2020). However, some previous studies have indicated that volunteers often struggle to obtain support for these losses both in their personal environment and within the organization itself (Chur-Hansen, 2010; Fournier & Mustful, 2019; Marton et al., 2020). The perception of support seems to be directly linked to the validation of the experienced grieving; on one hand, Rémillard et al. (2017) find that such recognition is crucial for the mourner to feel that their emotions are valid; on the other hand, other experiences indicate that messages emphasizing the replaceability of the animal (e.g., "it's just a dog," "you can get another cat") tend to hinder emotional expression and promote isolation (Cleary et al., 2022; Hess-Holden et al., 2017; Park et al., 2023).

Other variables have been analyzed for their potential impact on complicated grief. Firstly, the effect of gender yields inconclusive results: while some studies indicate higher intensity in symptoms such as sadness and anger among American, Italian, and Turkish women (respectively: Eckerd et al., 2016; Testoni et al., 2019; Yüksel et al., 2023), other studies find similar results for men (e.g., in Ghana: Botchway et al., 2022). The inconsistency of results is compounded by other limitations, such as potential cultural differences in the expression of grief (Davis et al., 2003), the overwhelming majority of female participants in studies on the topic (close to 85%; Cleary et al., 2022), or the variety of contexts in which participants are recruited (community samples versus grief helpline calls). Secondly, higher values in certain components of social cognition, such as anthropomorphism (e.g. attribution of humanlike qualities to non-human beings) and empathy, have been associated with a greater likelihood of experiencing adverse grieving reactions (Adrian & Stitt, 2017; Behler et al., 2020; Schabram & Maitlis, 2017; Uccheddu et al., 2019). Thirdly, the intensity of grieving has been positively associated with attachment to

animals (Barnard-Nguyen et al., 2016; Habarth et al., 2017) and perceived closeness to the deceased animal (Eckerd et al., 2016; Lavorgna & Hutton, 2019).

In summary, the literature suggests that individuals who care for companion animals may experience adverse reactions following their death, and various variables can moderate these reactions. It has also been confirmed that the majority of these studies have been conducted on the experiences of pet owners, with fewer studies dedicated to veterinarians or veterinary nurses, and very few references focused on volunteers. It is important to note that veterinary professionals receive less training in grief management and trauma exposure compared to professionals in human health (Deacon & Brough, 2021), and volunteers may receive no training at all, depending on the organization they collaborate with. Lastly, there is a lack of available data on Spanish samples, despite volunteers representing the majority of the workforce in animal protection organizations in Spain (Fundación Affinity, 2018). Therefore, this study aims to achieve three objectives: assess the presence of adverse grief reactions in volunteers from animal protection organizations; evaluate the relative impact of various predictive variables on the occurrence of complicated grieving; and establish a possible relationship between this phenomenon and potential health issues.

Method

Participants

A total of $N = 130$ volunteers from Andalusian animal protection organizations participated in the study. All participants were adults ($M = 42$ years; SD = 12.8 years) and had experience volunteering within animal protection organizations, with a duration of over one year in 87.4% of cases. Women were overrepresented in the sample, with a ratio of six women (85.8%) for every male participant (14.2%). Most participants (95.2%) had experienced the loss of companions at home (17.5%), at the animal welfare organization (4.0%), or both (73.8%). Information on participants' experiences within organizations is expanded on Table 1.

Instruments

A battery of instruments consisting of seven sections was administered to collect data. These sections focused on gathering sociodemographic information, reactions to animal grief, attachment to animals, anthropomorphism, empathy, social support, and symptomatology.

Table 1. Information on participants' involvement in animal welfare organizations.

Item	Affirmative responses (%)
Total time of participation	
Less than 1 month	2.4
From 1 month to 1 year	10.2
From 1 to 2 years	7.1
More than 2 years	80.3
Animals attended on average	
Less than 10	12.6
From 10 to 49	31.5
From 50 to 99	26.0
100 or more animals	29.9
Human resources within organization	
Five or less people	28.3
From 6 to 10 people	20.5
From 11 to 20 people	24.4
From 21 to 50 people	11.8
More than 50 people	15.0
Roles played within the organization	
Veterinary care	27.6
Animal training	26.0
Cleaning the facilities	70.1
Managing the organization	57.5
Animal care inside the facilities (eg.: feeding, playing, etc.)	74.8
Animal care outside the facilities (eg.: caring for cat colonies)	37.0
Rescuing animals	68.5

Sociodemographic data

Information was collected regarding the participant's gender (male, female, prefer not to say, other), age (in years), type of involvement in the animal protection organization (volunteer and/or professional), and duration of collaboration (less than a month, between one month and one year, between one year and two years, more than two years).

Reactions to pet bereavement

The Pet Bereavement Questionnaire (PBQ; Hunt & Padilla, 2006) was administered, which is composed of three scales: *grief* (seven items devoted to sadness; e.g., *I have had nightmares about the animal's death*; EAP alpha = 0.909), *anger* (five items; e.g., *I feel angry at the veterinarian for not being able to save* them; EAP alpha = 0.747), and *guilt* (four items; e.g., I feel bad that I didn't do more to save them; EAP alpha = 0.943). Responses were collected using a five-level scale, ranging from 0 (strongly disagree) to 4 (strongly agree). The wording of the items was modified to refer to the animals of the animal protection organization, rather than to a specific individual. The EAP alpha for the total instrument was 0.909. To compare the results with previous studies, cases were classified as positive if they scored above the midpoint on each scale (grief $\geq$ 14; anger $\geq$ 10; guilt $\geq$ 8; total $\geq$ 32), using the thumb rule provided by Botchway et al. (2022).

Anthropomorphism

The Animal Anthropomorphizing Questionnaire (AAQ) was administered, which is a 12-item scale designed to measure the degree of similarity between human and non-human qualities (e.g., *animals have their own intentions; animals can experience many different emotions*). Participants responded to these items on a five-point ordinal scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores implied continuity and closeness between species. The instrument has been validated in the Spanish population (López-Cepero et al., 2022) and demonstrates adequate reliability (EAP alpha = 0.917) in the present sample.

Empathy

The empathetic concern (e.g., *When I see someone being treated unfairly, I sometimes don't feel very much pity for them*) and interpersonal distress (e.g., *Being in a tense emotional situation scares me*) scales from the Brief Interpersonal Reactivity Index (B-IRI; Ingoglia et al., 2016) were administered. Each scale consisted of four items to be rated on a five-point agreement scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The scales demonstrated EAP alpha coefficients of 0.817 and 0.972, respectively, indicating good reliability in the present sample.

Pet attachment

The Lexington Attachment to Pets Scale (LAPS; Johnson et al., 1992) was administered to measure pet attachment. It consists of two scales: Attachment (11 items; e.g., *Companion animals and I have a very close relationship*) and Substitution of People (seven items; e.g., *My pet means more to me than any of my friends*). The wording of the scale was modified to refer to companion animals as a collective, rather than a specific individual. Participants rated their agreement on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). The reliability coefficients for the present study were EAP alpha = 0.900 and 0.856, respectively, indicating good internal consistency.

Social support

Social support received in the personal domain was measured using the Support Toward Animal Protection Labor (STAPL) scale (López-Cepero et al., 2023). It consists of ten item pairs (e.g., *They support me in my protective work; They tell me I care too much about animals*) aimed at assessing support from family (STAPL-Fam, EAP alpha = 0.947) and friends (STAPL-Fri, EAP alpha = 0.911). Perceived support within the

organization was measured using the Support in Animal Care Organizations questionnaire (SACO; López-Cepero et al., 2023), which includes two scales: Communication Quality within the organization (five items, e.g., *My proposals and ideas are taken into account by the organization*; EAP alpha = 0.958) and Perceived Resources for performing the work (five items, e.g., *We have too much work for our resources*; EAP alpha = 0.851). Participants rated their agreement on a five-point scale ranging from 1 (strongly disagree) to 5 (strongly agree) for items in both the STAPL and SACO scales.

Symptomatology

The General Health Questionnaire, 28-item version (GHQ-28; Goldberg & Hillier, 1979) was administered. The instrument consists of four scales, each comprising seven items, assessing symptomatology experienced in the past 12 months: somatic symptoms (e.g., *Have you experienced headaches?*; EAP alpha = 0.908), anxiety (e.g., *Have your worries made you lose a lot of sleep?*; EAP alpha = 0.950), social dysfunction (e.g., *Have you felt capable of making decisions?*; reverse-scored item; EAP alpha = 0.902), and depression (e.g., *Have you thought that you are worthless?*; EAP alpha = 0.967). Participants rated their responses on a frequency scale (e.g., from 0-Not at all to 3-Much more than usual) for each item.

Procedure

The study was approved by the Research Ethics Committee of the University of XXXX (code 0854-N-22). Since comprehensive data on the number of animal protection organizations and volunteers in Andalusia were not available, it was determined that a minimum of 113 participants were needed to conduct the study, based on the following parameters: 80% statistical power, 95% confidence level, and a 5% replacement rate, with the aim of detecting medium to large effect sizes. The research team created a census of animal protection organizations in Andalusia using official records of associations and foundations, as well as online searches that included general search engines and social media platforms such as Twitter and Facebook. In total, contact information was obtained from 212 organizations, and out of these, 167 (78.8%) confirmed receiving the study information after five rounds of dissemination. The list of contacted organizations is available on the following website: [*XXX removed due to anonymity XXX*].

Statistical procedures

Descriptive procedures (measures of central tendency, dispersion, and distribution) were conducted, including frequency analysis, mean comparisons

(*t*-tests and linear polynomial analysis of variance; $^{*}p < .05$), effect size calculation ($d =$ mean difference divided by standard deviation; Cohen, 2013), and linear regression (enter method; $^{*}p < .05$), using the statistical software SPSS, version 26. Reliability was estimated using the Bayes Expected-A-Posteriori statistic (EAP alpha >0.700) through the software FACTOR, version 10.10 (Ferrando & Lorenzo-Seva, 2016).

Results

First, the results obtained by the participants on the PBQ questionnaire regarding reactions to the death of animals were analyzed. The weighted means (mean of the scale divided by the number of items) were $M_{grief} = 2.88$, $M_{anger} = 2.11$, $M_{guilt} = 2.22$, consistent with previous literature. The overall instrument items obtained a mean of $M = 2.40$, which was statistically higher than the scale's expected mean ($M_{expected} = 2$; one-sample *t*-test $^{***}p_{(t = 5.434;\ df = 119)} < 0.001$; $d = 0.50$). A total of 65.5% of participants exhibited signs of complicated grieving on the total PBQ scale (83.2% on the grief scale, 39.7% on the anger scale, 47.1% on the guilt scale). Descriptive results of the PBQ and other variables included in the study are presented in Table 2.

Secondly, the relationship between indicators of grieving and health problems was explored. Spearman's Rho bivariate correlations showed small to medium size relationships between bereavement responses (measured with PBQ) and health outcomes (GHQ; please refer to Table 3). Regression analysis confirmed that the intensity of grief was associated with higher

Table 2. Descriptives for measures included in the present study.

					Asymmetry		Kurtosis	
	Min	Max	M	SD	Est	D.E.	Est	D. E.
PBQ_Grief	0	28	20.16	5.94	−0.729	0.218	−0.043	0.433
PBQ_Anger	0	20	9.58	4.72	0.119	0.218	−0.709	0.433
PBQ_Guilt	0	16	8.88	5.31	−0.192	0.218	−10.300	0.433
PBQ_Total	0	64	38.38	12.80	−0.138	0.222	−0.736	0.440
LAPS_Attachment	11	55	49.71	4.39	−10.124	0.221	10.613	0.438
LAPS_PersonSub	7	35	26.25	5.47	−0.671	0.219	0.383	0.435
BIRI_EmpathConcern	4	20	17.15	2.37	−0.869	0.218	0.704	0.433
BIRI_InterpersDistress	4	20	10.86	3.20	0.011	0.218	−0.391	0.433
AAQ_Anthropomorph.	12	60	46.13	8.55	−0.663	0.220	0.140	0.437
SACO_Perc. Resources	5	25	10.47	4.35	0.673	0.220	−0.485	0.437
SACO_Communic	5	25	21.03	3.71	−0.791	0.221	−0.129	0.438
STAPL_Family	10	50	35.46	8.88	−0.891	0.223	0.636	0.442
STAPL_Friends	10	50	36.54	7.78	−0.361	0.222	−0.113	0.440
GHQ_Somatic	0	21	7.83	4.65	0.481	0.221	−0.311	0.444
GHQ_Anxiety	0	21	9.18	5.35	0.294	0.221	−0.639	0.438
GHQ_Depression	0	21	6.47	3.16	0.353	0.221	0.691	0.438
GHQ_Social Disf.	0	21	3.27	4.52	1.640	0.221	20.101	0.438
GHQ_TOTAL	0	84	26.75	13.61	0.323	0.224	−0.737	0.444

PBQ: Pet Bereavement Questionnaire; LAPS: Lexington Attachment to Pets Scale; BIRI: Brief Interpersonal Reactivity Index; AAQ: Animal Anthropomorphizing Questionnaire; SACO: Support in Animal Care Organizations; STAPL: Support Toward Animal Protection Labor; GHQ: General Health Questionnaire.

Table 3. Bivariate correlations (Spearman's Rho) for measures included in the study.

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.PBQ_Grief	0.518***	0.405***	0.615***	0.645***	0.060	0.157	0.429***	0.062	0.040	−0.188*	−0.030	0.150	0.194*	0.159	0.153
2.PBQ_Anger		0.463***	0.294**	0.268**	0.107	0.278**	0.344***	−0.142	−0.017	−0.38***	−0.283**	0.221*	0.243***	0.188*	0.164
3.PBQ_Guilt			0.096	0.209*	0.124	0.244**	0.229*	−0.145	−0.113	−0.257**	−0.158	0.187*	0.153	0.322***	0.269**
4.LAPS_Attachment				0.648**	0.051	0.041	0.443***	0.044	0.030	0.009	0.099	0.124	0.135	−0.008	0.065
5.LAPS_PersonSub.					0.005	0.181*	0.479***	−0.018	−0.034	−0.098	0.110	0.184*	0.141	0.171	0.185*
6.BIRI_EmpathConcern						0.094	0.062	−0.019	0.118	0.065	0.140	−0.009	0.157	0.106	0.154
7.BIRI_InterpersDistress							0.119	0.016	−0.031	−0.037	−0.136	0.119	0.173	0.321***	0.276**
8.AAQ_Anthropomorph								0.003	0.078	−0.084	0.089	0.163	0.143	0.011	0.025
9.STAPL_PercResources									0.194*	0.245**	0.311***	−0.284**	−0.294**	−0.041	−0.063
10.STAPL_Communicat										0.225*	0.321***	−0.096	−0.037	−0.026	−0.258**
11.SACO_Family											0.430***	−0.129	−0.096	−0.087	−0.188*
12.SACO_Friends												−0.079	−0.093	−0.112	−0.089
13.GHQ_Somatic													0.790***	0.344***	0.401***
14.GHQ_Anxiety														0.369***	0.503***
15.GHQ_Depression															0.447***
16.GHQ_Social Func.															

PBQ: Pet Bereavement Questionnaire; LAPS: Lexington Attachment to Pets Scale; BIRI: Brief Interpersonal Reactivity Index; AAQ: Animal Anthropomorphizing Questionnaire; SACO: Support in Animal Care Organizations; STAPL: Support Toward Animal Protection Labor; GHQ: General Health Questionnaire.

*$p < .05$; **$p < .01$; ***$p < .001$. Significant correlations are colored in green when positive (ranging: $0 < 0.3$; $0.3 < 0.5$; 0.5 and above) and in red when negative.

levels of somatic symptoms ($F = 6.381$; $df = 109$; $^{*}p = .013$), anxiety ($F = 7.094$; $df = 111$; $^{**}p = .009$), depression ($F = 7.526$; $df = 111$; $^{**}p = .007$), social dysfunction ($F = 7.962$; $df = 111$; $^{**}p = .006$), and overall symptomatology ($F = 13.241$; $df = 109$;$^{***}p < .001$).

Finally, a regression analysis was conducted to determine the predictive power of various independent variables (attachment, empathy, anthropomorphism, and social support) on the intensity of grieving reactions (grief, anger, guilt, and total). The gender variable was excluded from the analyses because the means for males and females were statistically similar ($p > .05$), except for the guilt scale, which showed a negligible effect size ($^{**}p < .01$; $d = 0.09$).

The grief reaction was found to be related to animal attachment (attachment and substitution of people scales), explaining over 44% of the variance. The anger scale scores showed a positive relationship with two measures of social cognition (interpersonal distress and anthropomorphism), while personal social support (family and friends) served as a protective factor, explaining around 33% of the variance. Regarding guilt, the regression equation reached statistical significance but included only one independent variable (personal distress), explaining only 10% of the variance. Taking the PBQ instrument as a single scale of grieving intensity, the regression equation explained 37% of the variance, including one attachment measure (substitution of people), three social cognition measures (empathetic concern, interpersonal distress, and anthropomorphism), and one social support measure (family support). These details are presented in Table 4.

Discussion

The majority of personnel involved in animal protection activities are volunteers (Fundación Affinity, 2018), yet they have received marginal attention in scientific literature. This study provides the first findings on the experience of animal death among volunteers in animal protection organizations in Spain. This knowledge is essential for assessing current needs and designing responses to potential overlooked challenges, as well as it may help to deepen in our understanding of multispecies bonds.

Firstly, the study assesses the intensity of the response to the loss of animals in animal shelters using the PBQ. This instrument was originally designed to assess the loss of cohabiting companion animals, but the adaptation made allowed for the examination of similarities in grief experiences in both contexts. From a dichotomous perspective, using the cutoff point proposed by Botchway et al. (2022), two-thirds of the participants showed signs of complicated grieving, which is consistent with previous studies.

Table 4. Lineal regressions for four PBQ measures (total and by-scale results).

	Unstandardized coefficient					
A. PBQ_Total	*B*	*CI* (95%)		*Beta*	*t*	*p*
(Constant)	−8.991	−38.426	20.445		−0.606	.546
LAPS_Attachment	0.510	−0.089	1.109	0.179	1.690	.094
LAPS_PersonSub	0.600	0.093	1.106	0.255	2.350	.021*
BIRI_EmpathConcern	0.927	0.091	1.763	0.172	2.199	.030*
BIRI_InterpDistress	0.787	0.168	1.406	0.201	2.523	.013*
AAQ_Anthropomorph.	0.262	0.001	0.523	0.175	1.989	.049*
SACO_Perc. Resources	−0.019	−0.493	0.455	−0.007	−0.080	.936
SACO_Communication	0.101	−0.472	0.673	0.028	0.349	.727
STAPL_Family	−0.254	−0.493	−0.015	−0.175	−2.111	.037*
STAPL_Friends	−0.206	−0.494	0.081	−0.125	−1.424	.158
Model fit	$F = 8.092$; df = 109; ***$p < .001$					
Exp. Varian. (adjusted)	36.9%					
	Unstandardized coefficient					
B. PBQ_Grief	*B*	*CI* (95%)		*Beta*	*t*	*p*
(Constant)	−11.647	−24.649	1.356		−1.777	.079
LAPS_Attachment	0.450	0.185	0.714	0.336	3.373	.001**
LAPS_PersonSub	0.437	0.214	0.661	0.395	3.879	.000***
BIRI_EmpathConcern	0.228	−0.141	0.598	0.090	1.227	.223
BIRI_InterpDistress	0.128	−0.145	0.402	0.069	0.931	.354
AAQ_Anthropomorph.	0.017	−0.098	0.132	0.024	0.291	.772
SACO_Perc. Resources	0.059	−0.150	0.269	0.043	0.561	.576
SACO_Communication	0.076	−0.177	0.329	0.045	0.595	.553
STAPL_Family	−0.040	−0.146	0.065	−0.059	−0.759	.450
STAPL_Friends	−0.058	−0.185	0.069	−0.075	−0.910	.365
Model fit	$F = 10.668$; $df = 109$; ***$p < .001$					
Exp. Varian. (adjusted)	44.4%					
	Unstandardized coefficient					
C. PBQ_Anger	*B*	*CI* (95%)		*Beta*	*t*	*p*
(Constant)	−2.110	−13.129	8.909		−0.380	.705
LAPS_Attachment	0.148	−0.076	0.373	0.144	1.311	.193
LAPS_PersonSub	0.038	−0.154	0.229	0.044	0.390	.698
BIRI_EmpathConcern	0.297	−0.019	0.614	0.148	1.862	.065
BIRI_InterpDistress	0.328	0.092	0.563	0.224	2.757	.007**
AAQ_Anthropomorph.	0.141	0.042	0.240	0.255	2.831	.006**
SACO_Perc. Resources	−0.029	−0.210	0.153	−0.026	−0.313	.755
SACO_Communication	0.130	−0.088	0.347	0.098	1.185	.239
STAPL_Family	−0.135	−0.227	−0.044	−0.250	−2.943	.004**
STAPL_Friends	−0.127	−0.236	−0.017	−0.207	−2.295	.024*
Model fit	$F = 6.982$; $df = 111$; ***$p < .001$					
Exp. Varian. (adjusted)	32.7%					
	Unstandardized coefficient					
D. PBQ_Guilt	*B*	*CI* (95%)		*Beta*	*t*	*p*
(Constant)	5.612	−8.683	19.907		0.779	.438
LAPS_Attachment	−0.105	−0.397	0.186	−0.091	−0.717	.475
LAPS_PersonSub	0.131	−0.118	0.380	0.135	1.046	.298
BIRI_EmpathConcern	0.389	−0.022	0.800	0.173	1.877	.063
BIRI_InterpDistress	0.333	0.027	0.639	0.203	2.161	.033*
AAQ_Anthropomorph.	0.101	−0.027	0.229	0.162	1.560	.122
SACO_Perc. Resources	−0.046	−0.281	0.189	−0.037	−0.386	.701
SACO_Communication	−0.099	−0.381	0.183	−0.067	−0.696	.488
STAPL_Family	−0.078	−0.196	0.040	−0.128	−1.306	.195
STAPL_Friends	−0.022	−0.164	0.120	−0.031	−0.302	.764
Model fit	$F = 2.383$; $df = 111$; *$p = .017$					
Exp. Varian. (adjusted)	10.1%					

B: unstandardized coefficient; CI: confidence interval (lower and upper); Beta: standardized coefficient; df: degrees of freedom. *$p < .05$; **$p < .01$; ***$p < .001$.

In fact, although the percentage of individuals with high levels of anger and guilt was lower in our sample, the presence of grief was proportionally higher compared to the findings of Botchway et al. Secondly, from a dimensional perspective, the mean scores obtained by volunteers in our study were higher than those reported for Australian pet owners in the only study that used a comparable version of the PBQ (Spain et al., 2019). The validity of these comparisons is debatable due to the differences in sample origin (volunteers in Spain versus pet owners in other countries), and it should be stressed that the cutoff points proposed by Botchway et al. have not yet been demonstrated to be clinically sound, needing further attention in future studies. However, they do demonstrate that grieving over the death of companion animals is experienced by volunteers in animal protection organizations. The absence of cohabitation not only does not prevent grief but may exacerbate it due to the lack of recognition (Chur-Hansen, 2010; Marton et al., 2020).

Secondly, the study examined the coexistence of mourning reactions and health problems. The intensity of grieving showed a positive relationship with the symptomatology assessed by the GHQ-28, specifically for three out of its four scales (somatization, anxiety, and social dysfunction). These findings align with what is expected in the literature (Habarth et al., 2017) and underscore the implications for health resulting from exposure to animal death. However, it is likely that the results provided by this research underestimate the true extent of the problem, as volunteers who accumulate traumatic experiences may discontinue their involvement, thus falling outside the scope of the study. Therefore, these findings should serve as motivation for further studies that capture not only the experiences of active staff but also those volunteers who have discontinued their involvement.

Thirdly, the study examines the variables that affect the likelihood of experiencing adverse reactions to animal loss. Regarding personal variables, the respondent's gender was excluded from the regression analysis due to the overwhelming majority of women in the sample (consistent with findings in other studies on loss and human-animal bonds; Cleary et al., 2022). In the remaining measures, there was consistency with findings from studies on pet loss, where more negative grieving reactions were associated with higher scores in the subscale of substitution of people (Barnard-Nguyen et al., 2016; Habarth et al., 2017), empathy (Adrian & Stitt, 2017; Behler et al., 2020), and anthropomorphism (Eckerd et al., 2016; Lavorgna & Hutton, 2019). The non-significant result for the attachment scale of the LAPS may be related to the fact that the mean scores on the scale were very high in the sample (close to 50 out of a maximum of 55), causing a ceiling effect.

The specific analysis of the different dimensions of the PBQ revealed that grief reactions were related to the strength of attachment to companion animals, while anger was associated with social cognition (empathy and anthropomorphism). These results suggest that different components of bereavement may be influenced by different types of emotional-attitudinal adaptations (McAdams & Pals, 2006). The role of anthropomorphism suggests that participants attribute identity to animals, highlighting the need to analyze in future studies the implications of these relationships for human identity (McAdams & Pals, 2006), as well as the animal's history within the participant's life story, similar to how significant relationships are examined (Thomsen & Pillemer, 2017).

Regarding the social support received, families played a significant role in preventing adverse grieving reactions, consistent with previous literature (Chur-Hansen, 2010; Marton et al., 2020). In the case of anger, friendships also had a protective effect, albeit to a lesser extent. A strength of the present study is the use of the STAPL (López-Cepero et al., 2023), an instrument specifically designed to analyze support related to animal protection work, sensitive to the level of acceptance of the human-animal bond, as opposed to using generic tools in the aforementioned studies. On the other hand, it is noteworthy that the support provided by the animal protection organization did not have an effect on grieving reactions. In this case, the possible ceiling effect does not seem to offer a plausible explanation, as the means for both measures of the SACO were well below the maximum value for the scale. Although the lack of statistical significance could be explained by the statistical power used (aimed at detecting at least moderate-sized effects), it is also possible that the support from the organization has two opposing effects: providing support for the traumatic experience and encouraging greater involvement (and exposure) to that experience. This hypothesis, derived from anecdotal reports obtained during the contact phase with shelter volunteers, needs to be tested in future studies.

Compared to grief and anger measures, the regression for guilt scores showed a lower percentage of explained variance, with only one variable (interpersonal distress) reaching statistical significance for the model. This finding could be related to key similarities in the motivations of the participants. Schabram and Maitlis (2017) found that the call to volunteer in animal welfare organizations connects to the identity of volunteers: frequently, they perceive themselves as responsible for the welfare of animals, making them vulnerable to self-blame when they cannot prevent animal suffering. Future studies should address this hypothesis, including motivations and attributional styles within explanatory variables.

The findings described should be interpreted with caution for several reasons. The first reason is that there are no previous studies conducted

with shelter volunteers in Spain, making it difficult to assess the consistency of the results in relation to previous experiences. Although studies conducted in other countries are available, the expression of mourning, moderating variables, and coping strategies can be influenced by cultural context (Davis et al., 2003). Consistent with this, it is necessary to examine the experience of shelter volunteers from a paradigm that is sensitive to gender differences (Cleary et al., 2022), something that was not possible in this study. Those gaps could be overcome by triangulation of quantitative and qualitative methods.

However, the study also has strengths. One of the main strengths is providing results on the experience of death in a group that has received marginal attention in research, despite being a key component of the animal protection system. Another strength is providing information specific to the Spanish population. Despite having a modest sample size, there are several findings that demonstrate three important points: that this group experiences negative reactions to grieving in a similar manner to cohabiting pet owners; that these experiences are repetitive and traumatic, having an impact on the volunteers' health; and that personal and contextual factors can play a role in the occurrence of adverse reactions. Those findings may fill some gaps in the scientific literature, as well as they may help to make visible the growing importance of multispecies relationships in Spain. Given the sociological changes that Western communities are facing, it seems important to foster debates that may discuss the contradictions of anthropocentrism of human-animal relationships (e.g. the fact that some individuals are considered as family members, meanwhile many thousands of their own species are abandoned, abused, or neglected every year).

In summary, this information is of scientific and applied relevance as it justifies the promotion of efforts to ensure the well-being of volunteer staff in animal protection organizations. It demonstrates the importance of providing these organizations with tools to evaluate personal characteristics, social support, and experience with the care and loss of companion animals when selecting and managing volunteers. These resources, currently not available for the Spanish population, will help improve the volunteer selection and supervision processes, as well as enhance task assignment within the organizations, aiming to protect individuals who are more susceptible to developing adverse reactions from trauma exposure. This will ultimately improve the volunteers' experience and, consequently, the well-being of the animals they care for.

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Data availability statement

Dataset is available upon request.

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