



Separation distress in a sample of rescued *galgos* from Spain

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Abstract: Given the potential impact separation distress could have on the welfare of the dog experiencing it and on the overall quality of life of the whole family, this study investigated the presence of such complaint among 189 (123 females, 66 males, aged 5.1 ± 2.6 years) already rehomed rescued *galgos* from Spain, the pieces of advices given to prevent it, the perceived compliance with them and their effectiveness. An online dedicated questionnaire and a convenience sample of respondent were used. A logistic regression with presence/absence of separation distress as the target variable, and age and sex of the dog, length of adoption, presence of another dog in the household and presence and type of advice as possible predictors included in the initial model was run. Twenty-one *galgos* (11.1%; 12 females, 9 males) were reported as showing separation distress. Advice in order to prevent the development of separation distress was given by the rescue association in 168 cases. The most frequent pieces of advice given, often in combination, were to gradually get the dog used to be alone (120 cases), to not pet/cuddle/give attention to the dog (apart from the necessities of life) for the first 2-4 weeks post-adoption (79 cases), to leave the radio/TV on when leaving the dog alone (23 cases). The score given by respondents to their compliance with the advice was not significantly different depending on the advice/combination of advice given. Among the nine respondents declaring that they had regretted adopting the dog at some point after adoption, three gave separation distress as reason. Among the possible predictors included in the initial model, only age of the dog and being given the advice of “gradually getting the dog used to separations” were significant in the final Logit model, the former having a protective effect ($p < 0.01$), the latter increasing the risk of the dog showing the behavior ($p < 0.05$).

Key Words: counselling, dog, problem behavior, separation anxiety, sighthound.

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Introduction

Separation distress (sometimes also called with similar names, such as separation anxiety or separation-related behavior problems) is a relatively common behavioral complaint in clinical caseloads (e.g., 22.6% of the dogs in Storegen et al., 2014; 55.2% of the cases in Cannas et al., 2018). The condition has been the focus of much scientific interest (Blackwell et al., 2016; Ogata, 2016), but the results, for example as regards to predisposing factors, has given contradictory results (Sargisson, 2014). Separation distress can have detrimental effects not only for the dog experiencing it, but also for the whole family (Sargisson, 2014) and the human-animal relationship, thus having the potential to lead to relinquishment of the dog (Blackwell et al., 2016). It is therefore important to try to prevent the onset of such behavior as much as possible. One strategy to do so could be through counselling upon adoption (Herron et al., 2014; Blackwell et al., 2016) or to puppies' owners (Gazzano et al., 2008). However, the efficacy of behavioral advice given upon dogs' adoption for the prevention of separation distress is controversial: Herron et al. (2014) found no effect, whereas Blackwell et al. (2016) found a positive effect.

Therefore, the aim of the present study was to investigate the presence of separation distress,

its predictive factors and the effects of different pieces of advice on its occurrence in a sample of rescued *galgos* (i.e., sighthounds) from Spain adopted into Italy.

Animals, Materials and Methods

The present study is part of a larger project on rescued dogs, some part of which have already been published (Normando et al., 2021, 2022). A dedicated online questionnaire, in different versions, was developed for the project and is available as supplementary material to Normando et al. (2021). The link to the survey was advertised through rescue associations, social media and word of mouth, as detailed in Normando et al. (2021). The sections of the questionnaire included in the present paper are those regarding dog demographics, the presence of separation distress at the moment the questionnaire was filled in (and in some periods in the past), whether there were other dogs in the household, length of adoption, advice given upon adoption in order to prevent separation anxiety, self-assessed compliance to the advice received, whether the respondent had ever regretted to have adopted that dog, and why. Only answers concerning rescued *galgos* from Spain who were still with the respondent at the moment the questionnaire was filled in were included. Moreover, answers from respondents who declared to be dog trainers were excluded because they could have biased the results regarding the effects of the advice received upon adoption, due to their inherent knowledge of dog behavior. Also questionnaires in which respondents answered that they did not know whether their dog showed separation distress because, for example, they never left the dog alone, were eliminated from the sample.

Statistical Analyses

A logistic regression with presence/absence of separation distress as the target variable was run. The initial model included the following possible predicting factors: age (in years) and sex of the dog (two levels: female or male), length of adoption (in days), presence of another dog in the household (yes or no) and presence and type of advice. For the presence and type of advice there was one predictor on whether advice was given (two levels: yes or no), other three variables represented whether the advice of 1) gradually get the dog used to be alone, 2) not petting/cuddling/giving attention to the dog (apart from the necessities of life) for the first 2-4 weeks post-adoption or 3) to leaving the radio/TV on when leaving the dog alone were given as advice (independently from whether other pieces of advices were also given). Due to the distribution of the data, only three interactions between factors, namely “not petting/cuddling/giving attention to the dog”*“dog sex”, “not petting/cuddling/giving attention to the dog”*“gradually getting the dog used to be alone”, and “not petting/cuddling/giving attention to the dog”*“presence of another dog”, could be included in the initial model. The logistic regression was run using the software R (<https://www.r-project.org/>).

An independent-samples Kruskal-Wallis test was run on the 163 entries of dogs given the three most represented advice (alone or in combination) to test whether the score given by respondents to their compliance with the advice they had received (on a 1 to 10 scale) differed among pieces of advice/combinations of those. The test was run using the SPSS software (SPSS ver. 27, IBM, Armonk, NY, USA).

Results and discussion

For the sections included in this study, the survey yielded usable answers regarding 189 *galgos* (123 females, 66 males, aged 5.1 ± 2.6 years). Three female dogs and two male dogs were reported to be intact, whereas the 97.3% of the dogs were neutered. Adoption length (i.e., the time between

adoption date and the date the questionnaire was filled in) averaged 574.7 days ($SD=\pm 680.6$ days). Twenty-one *galgos* (11.1%; 12 females, 9 males) were reported as showing separation distress. This percentage falls within the range of the values reported in literature for caretakers' directed surveys, which vary widely (e.g., around 5% in Salonen et al. (2020), 17.2% in Tiira et al. (2016), 27.6% in Chung et al. (2016)). The percentage of *galgos* in the present study, who were reported as having shown the behavior in the past, but not anymore, was 29.6% on the total sample, which is not dissimilar from the 21.3% found by Bradshaw et al. (2002). As the time development of the problem is concerned, among the 110 dogs in the sample, who had been adopted from more than six months, the majority of the dogs who had shown the behavior only in the past, had done so only in the first four weeks after adoption, as shown in table 1.

Table 1. Presence of separation distress in some specific periods of time in *galgos* adopted from more than six months (n° 110). N.B. the respondents were instructed to report the presence of the problem in the specified time frame even if the problem was present for only a part of the time period.

Number of dogs	Time			
	First four weeks after adoption	From the 5 th week to 6 months after adoption	After the 6 th month after adoption	Now (at the moment the questionnaire was filled in)
63	No	No	No	No
29	Yes	No	No	No
9	No	Yes	No	No
4	Yes	Yes	No	No
2	Yes	Yes	Yes	Yes
2	Not answered	Not answered	Not answered	Yes
1	Yes	Yes	No	Yes

Advice in order to prevent the development of separation distress was reported to have been given by the rescue association in 168 cases. It is important to note that what reported was the perception of the respondent, not whether actually the association had given any advice. The most frequent pieces of advice given, often in combination, were to gradually get the dog used to be alone (120 cases), to not pet/cuddle/give attention to the dog (apart from the necessities of life) for the first 2-4 weeks post-adoption (79 cases), to leave the radio/TV on when leaving the dog alone (23 cases). A more detailed description of the number of dogs for whom the respondent declared to have received the different pieces of advice is given in table 2. "Miscellaneous other" pieces of advice included, for example, giving the animal something to eat during caretakers' absence, having a ritual to leave the dog alone, not giving attention to the dog in the minutes before leaving and after returning, not having a ritual when leaving, etc.

Table 2. Advice reported as having been given by the rescue association upon adoption.

Piece of advice	Number of respondents
Gradually getting the dog used to separations (\pm miscellaneous other advice)	74
Gradually getting the dog used to separations + leaving the radio/TV on (\pm miscellaneous other advice)	10
Ignoring the dog (apart from necessities) in the first weeks post adoption (\pm miscellaneous other advice)	38
Ignoring the dog (apart from necessities) in the first weeks post adoption + Gradually getting the dog used to separations (\pm miscellaneous other advice)	27

Ignoring the dog (apart from necessities) in the first weeks post adoption + Gradually getting the dog used to separations + leaving the radio/TV on (\pm miscellaneous other advice)	9
Ignoring the dog (apart from necessities) in the first weeks post adoption + leaving the radio/TV on (\pm miscellaneous other advice)	5
Only miscellaneous "other" advice	5
None	21

In the sample of the 163 of dogs, during whose adoption the three most represented advice (alone or in combination) were given, the auto-reported compliance with the advice (median 10, min-max = 4-10) was not significantly different depending on the advice/combination of advice given. Among the nine respondents declaring that they had regretted adopting the dog at some point after adoption, three gave separation distress as reason, two fear of people, one absence of socialization with people, one generalized fear and anxiety, one absence of physical contact, one the more than expected need for attention the dog had.

Among the possible predictors included in the initial model, only age of the dog and being given the advice of "gradually getting the dog used to separations" were significant in the final Logit model (pseudoRsquare = 9.67%; general predictivity = 88.89%; $p = 0.0017$). Age of the dog had a protective effect ($p = 0.0028$, Odds Ratio = 0.71, C.I. 95% = 0.54-0.89); and being given the advice of "gradually getting the dog used to separations" had a marginally significant negative effect ($p = 0.0499$; Odds Ratio = 2.90; C.I. 95% = 1.00-10.59). No effect was found for the other factors, sex of the dog included. The latter finding disagrees with what found by Bradshaw et al. (2002) and by McGreevy & Masters (2008), who found that male dogs were at higher risk of showing the behavioral problem. However, other authors (e.g., Wright et al., 1987; Flanningan et al., 2001; Takeuchi et al., 2001;) reported no sex difference as in the present study. In this regard, it is important to note that the fact that almost all the dogs in the present study were neutered may also have affected the result, even if literature on the effect of neutering status on separation distress is contradictory as well.

The finding that age reduces the risk of showing separation distress disagrees with what found by Chung et al. (2016), in whose sample young dogs were less at risk of showing the behavior than adult ones. However, the age distribution of the present study sample differs from that of Chung et al. (2016), with non-adult young dogs being less represented in our sample. For example, 11.5% of the dogs in Chung et al. (2016) were aged 0-1 year, whereas only the 2.1% of the sample of the present study was, due to the somewhat invariant pattern of relinquishment of *galgos* in Spain (Robinson & Watkinson, 2020). A similar difference is present also for dogs aged 1-3 years. A hypothesis could be that the difference found by Chung et al. (2016) was due to very young dogs (i.e., ≤ 1 year) being less prone to the condition and, with their number, influencing more heavily the statistics, whereas in our sample they were too few for that, and a different pattern could emerge, regarding older dogs being less prone to it than adult dogs.

The detrimental effect of a specific piece of advice (i.e., gradually getting the dog used to separations) found in our sample has not been described previously. Both no effect (Herron et al., 2014) and a positive effect (Blackwell et al., 2016) of a compound of advice were found, but to our knowledge, this is the first study to focus on the effects of the specific pieces of advice and finds a negative effect. It is noteworthy that the piece of advice associated with a higher risk of showing the behavior is the one reported as the most often given to new adopters. Although the relatively limited size of our sample advises some caution in interpreting the results, until the findings of the present study are contradicted by the results of a study with a larger sample size, it would be advisable for rescue associations rehoming *galgos* from Spain not to advise gradually getting the dog used to separations to the new families.

As far as the general dog population is concerned, many factors severely limit the external validity of the results: the present study was done on a specific sub-population of rescued dogs, so

other studies are needed to confirm the finding and to assess whether the same effects are found also in other dog sub-populations. Indeed, rescued sighthounds have been found to behaviorally differ from rescued non-sighthound dogs (Elliot et al., 2010), and rescued dogs may differ from dogs sourced elsewhere. Moreover, the present study was based on volunteers answering to a questionnaire, so all the limitations of this type of study apply (Rosenthal, 1965; Krumpal, 2013; Cohen & Todd, 2019).

Conclusions

The present study investigated the presence of separation distress among a sample of rehomed rescued *galgos* from Spain, and the effects of different pieces of advice on the prevention of its occurrence. Twenty-one dogs out of 189 were reported as showing the condition. Age of the dog had a significant protective effect, whereas dogs whose adopters were given the advice to “gradually getting the dog used to separations” had a slightly significant higher risk of developing the problem. Until more research is done on the topic, it could be advisable for rescue organizations rehoming *galgos* from Spain to refrain from advising to “gradually getting the dog used to separations” in order to prevent separation distress from occurring. Further research is needed on the effects of different pieces of advice on the prevention of the aforementioned condition in different subpopulation of dogs, given the negative effect that such condition can have on both the dogs and their human family.

Conflict of interest statement, ethical approval, authors' contribution

The authors declare no conflicts of interest. Data management and protection were done in accordance to the Regulation (EU) n. 679/2016/679. The Institutional Review Board of the University of Padua reviewed and approved the research (OPBA protocol number 31266).

Authors contributions: conception of the study SN; design of the study SN, FB; Acquisition of the data FB; Analysis of the data OB, and, to a much lesser extent, SN; interpretation of data SN; drafting of the paper SN; revising the paper critically OB, FB. All authors approved the final draft.

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Stress da separazione in un campione di *Galgos* adottati dalla Spagna

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Sintesi

Dato il potenziale impatto che il disagio da separazione può avere sul benessere del cane che lo sperimenta e sulla qualità di vita complessiva dell'intera famiglia, questo studio ha indagato la presenza di tale problema tra 189 *galgos* adottati dalla Spagna (123 femmine, 66 maschi, di età $5,1 \pm 2,6$ anni), i consigli dati per prevenirlo, quanto gli adottanti ritenessero di aver seguito tali consigli e la loro efficacia. Sono stati utilizzati un questionario online dedicato e un campione di convenienza di intervistati. È stata eseguita una regressione logistica con la presenza/assenza di distress da separazione come variabile obiettivo, e l'età e il sesso del cane, la durata dell'adozione, la presenza di un altro cane nella famiglia e la presenza e il tipo di consigli come possibili predittori inclusi nel modello iniziale. Ventuno *galgos* (11,1%; 12 femmine, 9 maschi) sono stati segnalati come soggetti a stress da separazione. In 168 casi, l'associazione ha dato consigli per prevenire lo sviluppo del disagio da separazione. I consigli più frequentemente forniti, spesso in combinazione, sono stati: abituare gradualmente il cane a stare da solo (120 casi), non accarezzare/coccolare/dare attenzioni al cane (a parte le necessità vitali) per le prime 2-4 settimane dopo l'adozione (79 casi), lasciare accesa la radio/tv quando si lascia il cane da solo (23 casi). Il punteggio dato dagli intervistati al loro rispetto dei consigli non è risultato significativamente diverso a seconda del consiglio/combinazione di consigli dati. Tra i nove intervistati che hanno dichiarato di essersi pentiti di aver adottato il cane a un certo punto dopo l'adozione, tre hanno indicato come motivo l'ansia da separazione. Tra i possibili predittori inclusi nel modello iniziale, solo l'età del cane e il consiglio di "abituare gradualmente il cane alle separazioni" sono risultati significativi nel modello Logit finale, il primo con un effetto protettivo ($p < 0,01$), il secondo aumentando il rischio che il cane mostrasse il comportamento ($p < 0,05$).

