

Pet's diseases and owner's anxiety: is the leash an umbilical cord?

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Abstract: Nowadays domestic animals take part to the family system and represent a fundamental element of its equilibrium. Therefore, pet's symptoms or diseases may become stressors for owners. The aims of the present study were to evaluate if the management of a pet affected by a disease may influence the anxiety of the owner and if some pathologies or symptoms may affect owner's anxiety more deeply. Eighty five owners of dogs and cats presented to the Veterinary Teaching Hospital "Mario Modenato" of the University of Pisa for dermatologic, gastro enteric and nephrological disorders were enrolled in the study through the administration of the State-Trait Anxiety Inventory Test (STAI). The questionnaire was anonymous and in accordance with privacy laws. Data were statistically analysed through the t-test and ANOVA test. Both men and women showed significantly higher values of trait anxiety (47.68 ± 12.97 vs 43.07 ± 8.05 ; $p=0.04$), compared to state anxiety (45.68 ± 12.71 vs 38.9 ± 9.89 ; $p=0.03$) but men presented significantly higher scores than women. No significant differences were found among owners concerning age and educational level. Cat's owners showed significantly lower levels of anxiety than dogs ones and owners of nephropatic patients were less anxious than owners of gastroenteric and dermatologic subjects. The present data seemed to show that owner's anxiety may be affected more or less deeply by pet's disease, according to kind of disease, seriousness of symptoms and owner's gender.

Key Words: dog; cat; anxiety, owner.

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Introduction

Family is a living system composed by different parts that try to conserve equilibrium and homeostasis through dynamics of self-regulation and self-control (Benoit, 1988; Dehasse, 1998). Inside the family, behaviour of each subject can influence the reactions of the others (Wazlawitch, 1967). The system is able to self-regulate and to maintain homeostasis, by reaching the "allostasis" (stability through change) (McEwen, 1988).

In a great number of circumstances, allostatic systems may either be overstimulated or not perform normally: in these situations, the subjects may suffer, showing physical and behavioural disorders.

Domestic animals live inside the family system and are fundamental elements of its equilibrium (Friedman, 1995). Although it is well documented that pet ownership has a number of benefits, the psychological characteristics of the pet-owner relationship, that may affect human well-being, are not well understood.

Owners use anthropomorphism to describe their dogs on a regular basis (Horowitz, 2009). This behaviour seems to show a positive correlation with pet owner's stress (Duvall, 2008). Needs and health problems of pets may cause psycho-pathological reactions in owners.

One of the most common psychological disorders in humans is anxiety, a complex combination of negative emotions like apprehension, fear and worry, which often goes with physical symptoms.

Anxiety can be considered not only a symptom or a syndrome, but also a way of life, the extremes of which may be considered into psychopathology (Spielberg, 1972). Emotion regulation makes use of specific aspects of attention and executive functions that are critical for the development of adaptive social functioning. Perturbations in these processes can result in maladaptive behaviour and psychopathology (White, 2009). Whatever theoretical model is used to explain this syndrome, it is undeniable that anxiety causes deleterious effects not only for the anxious subject and his family but also for his pets or vice versa.

It appears that pets are a consistent source of attachment security (Beck, 2008; Shore, 2006). As the umbilical cord strictly connects mother and foetus during prenatal period and it may have effects on the behavior of the new-born baby, with positive and negative conditioning (De Bottom, 2004), the leash which joins owner and dog (both real and imaginary), can represent the fulcrum of this relationship.

A validated test used to evaluate feelings of apprehension, tension, nervousness and worry is the STAI (State-Trait Anxiety Inventory) test, composed by forty questions with a range of four possible responses for each question. The test clearly differentiates between the temporary condition of "state anxiety" and the more general and long-standing condition of "trait anxiety." For this reason, the STAI test showed a double scale of values from a minimum score of 20 to a maximum of 80. The first scale assessed the momentary level of anxiety (*state anxiety*) of owners. This score reflects the aptitude of the subject to consider a present situation threatening and able to cause anxiety (Spielberg, 1972). It consists of twenty statements that evaluate how respondents feel "right now, at this moment." The person must answer to the questions in terms of intensity (not at all, somewhat, moderately so, very much so). The second scale evaluated the individual propensity towards perceiving a wide range of threatening situations capable to determine a state of anxiety (*trait anxiety*) (Spielberg, 1972). It consists of twenty statements that assess how respondents feel "generally"

The aims of the present study were to evaluate if the management of a pet affected by a disease may influence the anxiety of the owner and if some pathologies or symptoms may affect owner's anxiety more deeply.

Materials and methods

STAI test (Spielberg, 1972) was administered to 85 owners of dogs and cats presented to the Veterinary Teaching Hospital "Mario Modenato" of the University of Pisa from January to December 2014. The pets were affected by chronic nephrologic, gastroenteric and dermatologic disorders. STAI test takes into consideration anxiety as a single variable and it was chosen according to multiple factors: consulting room as set for the administration of the questionnaire, organization of the clinic, length and lexical complexity of the questions for the evaluation of owner's personality.

The questionnaire was administered to owners after the clinical examination of pets, in the presence of a psychologist and in accordance to privacy laws. The questionnaire has to be filled in into 10 minutes and anonymously.

Data were statistically analyzed through the t-Student test (in case of comparison between two groups) and the one-way ANOVA test when the comparison was among three groups.

Results

Among the 85 people (33 men and 52 women), 55 subjects owned dogs while 30 cats. Thirty-seven owners were between 20 and 40 years, 38 between 40 and 60 and 10 over 60 years. The educational level was variable and showed 27 graduated owners, 39 qualified and 19 with a lower qualification. Among the 85 patients, 25 were presented for gastroenteric disorders, 34 for dermatological

disorders and 25 for nephrological disorders. The distribution of canine and feline patients according to the kind of disorder is reported in Table 1.

Table 2 reported the scores of the state and trait anxiety of pets' owners. Male owners showed significantly higher scores of state and trait anxiety than women. Both men and women reported significantly higher values of trait anxiety, compared to state anxiety. No significant difference was found in owners according to age, although a lower score of state and trait anxiety was shown in subjects between 40 and 60 years. Owners with the highest educational level (degree) reported the lowest scores, although no significant differences were found among the three groups. Cats' owners showed significantly less levels of state and trait anxiety than dogs' ones. Finally, no statistical difference was observed among owners of patients affected by renal, gastro-enteric or dermatologic diseases.

Table 1. Distribution of patients according to the diagnosed disorder.

Dermatological disorder		Nephrological disorder		Gastro-enteric disorder	
Dogs	Cats	Dogs	Cats	Dogs	Cats
26	8	13	12	18	7

Table 2. Score of the state and trait anxiety of pets' owners according to gender, age, educational level, animals and pathology.

		State anxiety Mean \pm S.D.	P	Trait anxiety Mean \pm S.D.	P
Gender	Men	45.68 \pm 12.71	0.03	47.68 \pm 12.97	0.04
	Women	38.9 \pm 9.89		43.07 \pm 8.05	
Age	20-40 y	41.41 \pm 11.44	0.13	45.59 \pm 11.38	0.11
	40-60 y	40.62 \pm 13.49		43.59 \pm 11.66	
	> 60 y	42.48 \pm 14.02		45.76 \pm 11.98	
Educational level	Lower qualification	42.05 \pm 11.01	0.32	46.68 \pm 10.58	0.16
	Qualified	43.97 \pm 13.40		47.76 \pm 12.40	
	Graduated	39.48 \pm 10.90		41.03 \pm 7.43	
Pet	Dog	44.08 \pm 11.86	0.02	47.59 \pm 10.93	< 0.01
	Cat	38.07 \pm 11.93		40.89 \pm 9.61	
Disorder	Gastro-enteric	43.48 \pm 12.41	0.69	46.16 \pm 11.38	0.30
	Dermatological	41.61 \pm 12.37		46.94 \pm 11.65	
	Nephrological	41.32 \pm 11.98		42.4 \pm 9.11	

Discussion

In modern societies, the prevalence of depression and anxiety disorders is highest among people in their midlife (Plaisier et al., 2008). The prevalence of anxiety disorders is also consistently higher in women compared to men (Kessler et al., 2003). Opposite to literature data, the present study showed values of state and trait anxiety significantly lower in women than in men. The results of the present study seemed to report a higher ability of female owners to bear emotions and affective emergencies compared to male ones. We may speculate that the need to front children, job and every aspect of domestic management got women used to avoid panic in case of danger. This behavioural difference between men and women may be reflected also in the management of pets. While women are easily inclined to have a motherly care towards pets, men, especially if without children, can show more anxiety in fronting diseases.

Another interesting result was the significant difference in the anxiety status between cats and dogs' owners. Dog owners showed a higher level of state and trait anxiety compared to cat owners. This finding may reflect a different personality or relationship. The relationship between cats and their owners is generally considered an "adult to adult" kind (Stewart, 1987). In the present study cat owners showed higher levels of trait anxiety, compared to state anxiety. According to their ethological characteristic, cats need a major affective independence and own spaces. As previously reported, cats do not generally appear to attach to owners as a focus of safety and security (Potter & Mills, 2015) in the same way that dogs (Mariti et al., 2013) or children do. Cat owners can't control completely their pets and they seem to be more cognitive and self-confident people, without imaginary worries. They seem to know how to front pets' disorders in a pragmatic way. On the other hand, dog owners seem to have a parent-child relationship. Dogs are often considered never growing-up children, who need attentions and cares and able to evoke strong neotenic emotions (Friedman, 1995; Beck, 2008). Furthermore, as dogs represent the kind of pet more dependent on humans, the relationship between owners and dogs may be strongly influenced by owner's emotions (Duvall, 2008). This might explain the wider survey of behavioural relation disorders in dogs compared to cats.

The substantial difference in the kind of attachment that exists between dog and cat owners may explain the different behavior observed in a previous study (Freiwald et al., 2014). Freiwald et al. reported that dog owners seemed to be more incline to vaccinate their pets, to have annual veterinary rechecks, and to spend more than \$ 1,000 for a full recovery of their pet or for a therapy that may improve the quality of life.

In the present study no significant difference in the score of anxiety was found according to the age of owners, although owners between 40 and 60 years of age showed lower scores of anxiety. These data should be further investigated and may be influenced by the achievement of a complete autonomy, a self-fulfilment with a fixed job and a firm net of social relations. People between 40 and 60 years of age are generally characterised by full social identity, which may help them to front better different psychological dynamics and state anxiety.

Moreover, the present research seemed to show that the more evident the physical symptoms were, the more anxiety increased. Symptoms like vomit, diarrhea, itch and alopecia seemed to influence the degree of anxiety of owners more than polyuria/polydipsia and lethargy. Further studies should be encouraged to investigate possible relationship among anxiety of owners, pets' diseases and recovery.

Nowadays dogs and cats take part in homeostatic and allostatic dynamics of families, filling, sometimes, an emptiness that may be psychological, communicative, welfare, projective and substitutive. In this kind of relationship pets can sometimes become victims. The tendency of the family system towards stability can be used to explain anomalies and pathologies of relations. In such context veterinarians become an active part of the therapeutic system and a jointly responsible of psychological welfare (Rogers, 1995).

References

- Beck L., Madresh E.A. Romantic partners and Four-legged Friends: an extension of attachment theory to relationships with pets. *Anthrozoos*. 2008; 21: 43-56.
- Benoit J.C. et al. *Dictionnaire clinique des thérapies familiales systémiques*. Ed. ESF, Paris 1988.
- De Botton A., "L'importanza di essere amati: l'ansia da status". Guanda, Milano 2004.
- Dehasse J. Pour une systémique, animal de compagnie inclus. *Thérapie Familiale* 1998; 19: 357-365.
- Duvall A, Nikolina M., Pychyl T.A. An examination of the relations between social support, anthropomorphism and stress among dog owners. *Anthrozoos*. 2008; 21: 139-152.
- Freiwald A., Lister A., Weng H. Survey to investigate pet ownership and attitudes to pet care in metropolitan Chicago dog and/or cat owners. *Prev. Vet. Med.* 2014; 115: 198-204.
- Friedman E. The role of pets in enhancing human well-being: physiological effects in: Robinson I. *Waltham book of human-animal interactions: benefits and responsibilities of pet owner-ship*. Pergamon Press, Oxford 1995.

- Horowitz A. Disambiguating the “guilty look”: salient prompts to a familiar dog behaviour. *Behav. Processes.* 2009; 81: 447-452.
- Kessler R.C., Berglund P., Demler O., Jin R., Koretz D., Merikangas K.R. The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication. *J.A.M.A.* 2003; 289: 3095-3105.
- Mariti C., Ricci E., Zilocchi M., Gazzano A. Owners as a secure base for their dogs. *Behaviour* 2013; 150: 1275-1294.
- McEwen B.S. Stress, adaptation and disease. *Allostasis and allostasis load Ann. N.Y. Acad. Sci.* 1998; 840: 33-34.
- Plaisier I., De Bruijn J.G.M., Smith J.H., De Graaf R., Ten Have M., Beekman A.T.F., van Dyck R., Penninx B.W. Work and family roles and the association with depressive and anxiety disorders: differences between men and women. *J. Affective Disorders.* 2008; 105: 63-72.
- Potter A., Mills D. Domestic cats (*Felis silvestris catus*) do not show signs of secure attachment to their owners. *PLOS ONE.* 2015; 2: 1-17.
- Rogers C.A. Kramer P.D. On becoming a person. A therapist's view of psychotherapy. Mariner Book 1995.
- Shore E.R., Riley M.L., Douglas D.K. Pet owner behaviours and attachment to yards versus house dogs. *Anthrozoos* 2006; 19: 325-334.
- Spielberger C.D. Anxiety: current trends in theory and research. Academic Press, New York & London 1972.
- Stewart I., Joines V. Today Lifespace Pub 1987.
- Watzlawick P., Beavin J.H., Jackson D.D. Pragmatics of human communication. W.W. Norton & Co, New York 1967.
- White L.K., Helfinstein S.M., Reeb-Sutherland B.C., Degnan K.A. Fox N.A. Role of attention in the regulation of fear and anxiety. *Dev. Neurosci.* 2009; 31: 309-317.

Le malattie degli animali da compagnia e l'ansia dei proprietari: il guinzaglio è un cordone ombelicale?

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Sintesi

Al giorno d'oggi gli animali domestici fanno parte del sistema famiglia e rappresentano un elemento fondamentale del suo equilibrio e, per tale motivo, le loro malattie possono diventare fonte di stress per i proprietari.

Lo scopo della ricerca è stato quello di valutare se il management di un animale malato possa influenzare l'ansia del proprietario e se esistano patologie dell'animale che possano incidere in modo più rilevante sull'ansia della persona. Per la ricerca sono stati intervistati 85 proprietari di cani e gatti che hanno portato i propri animali all'ospedale Didattico Veterinario “Mario Modenato” dell'Università di Pisa, per malattie dermatologiche, gastroenteriche e nefrologiche. A queste persone è stato somministrato, in forma anonima, il test “State-Trait Anxiety Inventory” (STAI). I dati sono stati analizzati con i t-test di Student e l'ANOVA.

Sia gli uomini sia le donne hanno mostrato valori significativamente più alti di ansia di tratto ($47,68 \pm 12,97$ vs $43,07 \pm 8,05$; $p=0,04$) rispetto a quella di stato ($45,68 \pm 12,71$ vs $38,9 \pm 9,89$; $p=0,03$) ma gli uomini hanno livelli di ansia superiori a quelli delle donne.

Nessuna differenza statisticamente significativa è stata trovata tra i proprietari per quanto riguarda l'età ed il livello di educazione.

I proprietari dei gatti hanno mostrato livelli di ansia significativamente inferiori a quelli dei proprietari di cani. Un'ulteriore differenza statisticamente significativa riguarda i proprietari di animali affetti da patologie nefrologiche che sono risultati essere meno ansiosi dei proprietari di soggetti con affezioni gastroenteriche e dermatologiche.

La presente ricerca sembra indicare che più i sintomi fisici sono evidenti maggiore è il livello di ansia del proprietario. Sintomi come vomito, diarrea, alopecia sembrano influenzare il grado di ansia dei proprietari in grado maggiore che la poliuria, polidipsia e letargia.

Al giorno d'oggi cani e gatti partecipano alle dinamiche allo statiche ed omeostatiche della famiglia, riempiendo, a volte, un vuoto che può essere di varia natura (psicologico, comunicativo, di benessere etc.). In questo tipo di relazione gli animali possono talvolta diventare vittime e la tendenza del sistema famiglia a mantenere la stabilità può essere utilizzato per spiegare anomalie e patologie della relazione. In questo contesto i medici veterinari diventano una parte attiva del sistema terapeutico e responsabili del benessere psicologico dell'animale.