BENEFICIAL EFFECTS OF PET RELATIONSHIPS: RESULTS OF A PILOT STUDY IN ITALY

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Some general concepts on human-animal relationships

At the end of the last Ice Age, the transition from hunting-gathering to farming favoured the process of animal domestication. The first species to make the transition from a wild to a domestic state was the wolf (*Canis lupus*) and its domestication was based on a mutually beneficial relationship with man. Until recently, archaeological findings were the only evidence to pinpoint the beginning of man's symbiotic relationship with dogs, the commonly accepted date of dog's domestication being placed at 14,000 to 10,000 years ago. However, some anthropologists suggest that the human-dog relationship could be almost as old as modern man himself (1).

In return for companionship and food, the early ancestor of the dog assisted man in tracking, hunting, guarding and a variety of other purposes. Eventually man began to selectively breed these animals for specific traits. Physical characteristics changed and individual breeds began to take shape. As man wandered across Asia and Europe, he took his dogs with him, using them for additional tasks and further breeding them for selected qualities that would better enable them to perform specific duties.

One of the most important aspects of the domestication of canids has to do with the selection of social-communicative skills (2). As an example, dogs are more skilful than great apes at a number of tasks in which they must read human communicative signals. Furthermore, wolves raised by humans do not show the same skills as domestic dogs, including puppies that have had little human contact. These findings suggest that during the process of domestication, dogs have been selected for a set of social-cognitive abilities that enable them to communicate with humans in unique ways (3). Thus, dogs able to use social cues to predict the behaviour of humans more flexibly than could their last common wolf ancestor have been at a selective advantage.

Despite the efforts of generations of ethologists and psychobiologists, until recently animals have not being recognized to possess a "mind". Historically, cognitive ethologists gained scientific acceptance between the end of the 70's and beginning of 80's (4, 5). In these years the interest for animal cognition, intelligence, consciousness passions and emotions has flourished (interested readers can refer to "Minding animal" (6) written by canine expert and bioethicist Mark Bekoff) as well as it has increased the interest for the ways in which humans interact and communicate with species with which they have the closest contact and vice versa.

The ability to communicate in the absence of a common articulate language and to modify their emotions in a reciprocal way is an essential and founding element for the ability of dogs to act as therapists. The first scientific record of such ability dates back to the 70's, when, in the laboratory of Harry Harlow at the University of Wisconsin and in the California Primate Center directed by Bill Mason at Davis, highly original research was conducted on primates in the field of ethology and psychobiology, in order to identify the selective features characterizing the relationship which is established early on between a newborn and its mother. This research was highly revolutionary for that time. It highlighted the basic role played by the mother-infant relationship (in which both members have a reciprocal "creative" and "active" role) in shaping the emotional behaviour of the offspring. Moreover, these studies shed light on the possible mechanisms underlying the vulnerability and onset of psychiatric disorders, such as autism, and, especially, the possible outcome on neuropsychological development resulting from malfunctional bonding created during the neonatal and infantile phases. In these studies, young conspecifics (monkey therapists, characterised by an adolescent phase with a strong filial bond) were used for the recovery of juvenile monkeys with autistic

characteristics. It was of interest that other species, dogs in particular, would found to be effective, while inanimate surrogates (cloth-covered plastic horse) would not (7-10).

Recent studies on humans have shown that a relationship with an animal, not exclusively a dog, can ameliorate the self-confidence and increase the learning capabilities and the motivation to interact socially.

What is pet therapy

The term "pet therapy" was coined in 1964 after a child psychiatrist Boris M. Levinson, observed positive effects while using his dog, Jingles, in sessions with severely withdrawn children. He noticed that the dog served as an ice-breaker and provided a focus for communication. Thanks to the animal, Levinson was able to establish a relationship with the child and start an effective therapy. Since then, scientists and health professionals have put Levinson's theories into practice and now a wide range of health professionals recognise what many pet owners have known for years – i.e. that pets can be good for our health and well-being.

It is important to notice that nowadays professionals discourage the term "pet therapy" because it actually refers to animal behaviour training programs and prefer to distinguish between:

- *Animal Assisted Activities* (AAA) provide opportunities for motivational, educational, and/or recreational benefits in order to enhance quality of life of some human categories such as blind and physical or psychic handicapped persons. AAA are delivered in a variety of environments by specially trained professionals, para-professionals, and/or volunteers in association with animals that meet specific criteria.
- *Animal Assisted Therapies* (AAT) are goal-directed interventions in which an animal meeting specific criteria is an integral part of the treatment process. AAT are delivered and/or directed by a health/human service provider working within the scope of his or her profession. AAT are designed to promote improvement in human physical, social, emotional, and/or cognitive functioning. They are provided in a variety of settings and may involve groups or be individual in nature. This process is documented and evaluated.

In Italy pet therapy has been recognized as official care by a Legislative Decree (DL.vo issued on February 28th 2003; following an agreement between the State and the Italian Regions). For the first time in our country, this Decree sanctioned the role that an animal could have in the emotional life of a person and the therapeutic benefits derived from pet animals.

Who can benefit from pet therapy

People who usually can benefit from pet therapy are:

- *Children*
  Pet therapy decreases children's stress and anxiety about illness, injury and hospital experience. Interacting with a pet can sometimes enhance recovery following a serious illness. It can change behaviour, create a sense of responsibility and even improve a child's ability to participate in therapeutic treatment leading to attainment identified goals and objectives. Children are often extremely trusting and easily achieve a level of intimacy with animals. This special bond contributes to pets' effectiveness as co-therapists (11).
- *Elderly persons*
  In the institutionalized elderly there is evidence that pet therapy may reduce depression, blood pressure, irritability and agitation, and may increase social interaction. In an epidemiological study performed on people that had suffered from infarction, the presence of a pet was found to have a positive effect on survival (12). In Alzheimer's disease there is evidence that the presence of a companion animal may increase social behaviours such as smiles, laughs, looks, leans, touches, verbalizations, name-calling, or others. Moreover pet therapy has been shown to reduce loneliness and depression in residents of long-term care facilities, particularly in people with a prior history of pet ownership. The presence of a pet has also been found to lead to increased verbal interactions among residents (12, 13).

– *Psychiatric patients*
  There is evidence that presence of a pet among psychiatric patients promotes social interactions (14). In people with schizophrenia pet therapy may lead to improved interest in rewarding activities as well as better use of leisure time and improved motivation. There is also evidence of improvement in socialization skills, independent living, and general well-being. In a large, well-designed study, hospitalized patients with a variety of psychiatric disorders were found to have reduced anxiety after a single session of Pet therapy (14). For most, the benefits were superior to those of a session of regular recreation therapy.

Educational activities promoted by pet relationships

According to some reports, pets, with their morphological and behavioural diversity, could solicit the child in the formation and enrichment of its imaginary world, offering him/her more than one model for his/her elaborative processes and strengthening his/her imagination. Moreover, the interaction with the animal diversity, or the simple referring to it, could help the child in coping with a multifaceted world, transforming the diffidence in curiosity and tolerance and decreasing widespread fear. The act of taking care of a companion animal usually decreases generally aggressive behaviours, negligence, little helpfulness. Pet relationships increase affectivity, fortify the epimeletic tendency of a child, the capabilities to take care, to help and protect someone, and decrease general disorganization, low attention to external and inner world. Moreover, this relationship helps a young boy/girl in having a positive behaviour in all the daily activities (11).

Usually, pets have juvenile characteristics able to stimulate communication and to solicit children to play activities. Pet owners taking care of their animals, give rise to an epimeletic behaviour and children observing this situation carry out an identification process by which they come to play the role of an adult. The “encounter” with the animal can be of great help in shaping the emotional ability of the child. This can be achieved because the relationship with the animal has an emotional and empathic connotation and eventually leads the child to learn how to self-regulate its arousal states, in order to effectively interact with the pet.

An increasing motivation and attention has been observed, for example, when pets are regularly in school classes in which children with mental retardation are present. Pet became the centre of attraction ameliorating, at least in part, the learning capability deficits of these children. It is well known the study on an autistic girl that learned to count up to three just to start a game in which her dog was involved in (11).

Animals used as pet therapists

The animals most commonly used for pet therapy are:

– *Dog*
  This is, by large, the most frequently used animal as co-therapist, both with children, adults and elderly people. By soliciting play, dogs arouse patients and demand interactions, in addition to offering company (2).

– *Cat*
  It is enrolled as co-therapist for its independence and the easy way to take care of it. It is preferred by people living alone or having an age or some pathologies that limit their movements (15).

– *Hamster and rabbit*
  To observe, to pet and to take care of these animals could bring great benefits, especially to children having a hard time in their life.

– *Horse*
  Horses are mostly employed for medical, rehabilitative and psychological-educative hippotherapy practised in equipped facilities by the help of a well trained staff. Autistic children, Down syndrome children, disabled persons with behavioural and motor dysfunctions can benefit from hippotherapy.

– *Bird*

Studies performed on groups of elderly people have evidenced the beneficial effects of the usually taking care of birds, in particular parrots.

– *Fish*
  It has been noticed that the observation of a fish in an aquarium might help in reducing tachycardia and muscles strain, acting as an anti-stress.
– *Dolphin*
  These animals have been employment as co-therapists in the case of depression and mental and emotional disorders. The dolphin therapy can improve autistic patients' psychological status and social adaptation.
– *Donkey, goat and cow*
  These are domestic animals that can also be employed in pet therapy practises.

By and large, domestic animals, particularly small mammals, should be preferred as Pet Therapists as they are those that have been selected for their ability to interact socially (and emotionally) with humans.

Professional categories involved in pet therapy: the working group

In Pet therapy, the activity performed by the "animal therapist" towards the "human patient" is very complex and to be successful, above all, it requires the contribution of many professional figures.

For this reason, every Pet therapy experience is the results of the combined effort of a cross-disciplinary team made up of various professional categories. These categories interact and bring their own specific contribution in a complementary way.

As operators, the members of the team work personally at the design, at the evaluation of programs and at the execution of activities and therapies. In particular, it is important that these activities do not result stressful for the animal itself (16).

Ideally, the Pet therapy team should be made of all (or most) of the following figures:

– Physician;
– Psychiatrist;
– Psychologist;
– Rehabilitation therapist;
– Social worker;
– Nurse;
– Teacher;
– Pedagogue;
– Vet;
– Ethologist;
– Professional dog trainer;
– Pet conductor.

Pilot study on AAA and AAT activities in a sample region of Italy: Emilia Romagna

The increasing interest in pet therapy and the lack of guidelines that formally regulate the therapies performed with animals, has raised the need to document the activities that are being undertaken in Italy under this label. This initiative involves the Istituto Superiore di Sanità and the Faculty of Veterinary Medicine of the University of Bologna, and is aimed to chart all the initiatives in this field in continuous expansion, in the Italian region Emilia Romagna.

The goal of our study was to identify both the common and the discriminating factors between several operators recognised in the Emilia Romagna territory and to collect them in macro-groups of "certification". To this purpose we selectively identified a number of parameters, such as the professional profile of pet

operators, the formative background of animals employed, the typology of users, the type and the degree of the handicap, the type of structure in which the activities are performed and the institutions involved.

A first consideration on the professional profile of the operators brings out the fact that in the region Emilia Romagna the majority of people belonging to this category has the *Referee Pet Operator* certificate or the *Pet Partner Operator* certificate, qualifications obtained after attending the *Referee in Welfare Zooanthropology* course organized by the SIUA (Scuola di interazione uomo-animale: Man Animal Interaction School). A smaller group of operators in Emilia Romagna has an AIUCA (Associazione Italiana Uso Cani d'Assistenza: Italian Association Use of Dog for Assistance) certificate and performs activities with equine horse therapists. Finally, an additional group enlist an operator having a Delta Society certificate who interacts with veterinarians (Figure 1).

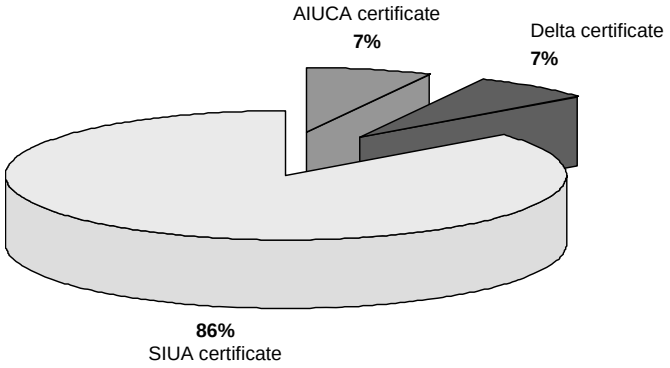

Figure 1. Professional certification of pet therapy operators

Pet operators, for the most part, are graduates in Pedagogy, Veterinary Medicine, Psychology, Environmental Sciences, Natural Sciences, Medicine, Biological Sciences, Pharmacy, Geology, or high school diploma, Dog trainer, operators in social services, hold Diplomas for Athletic/ Physical trainer (Figure 2).

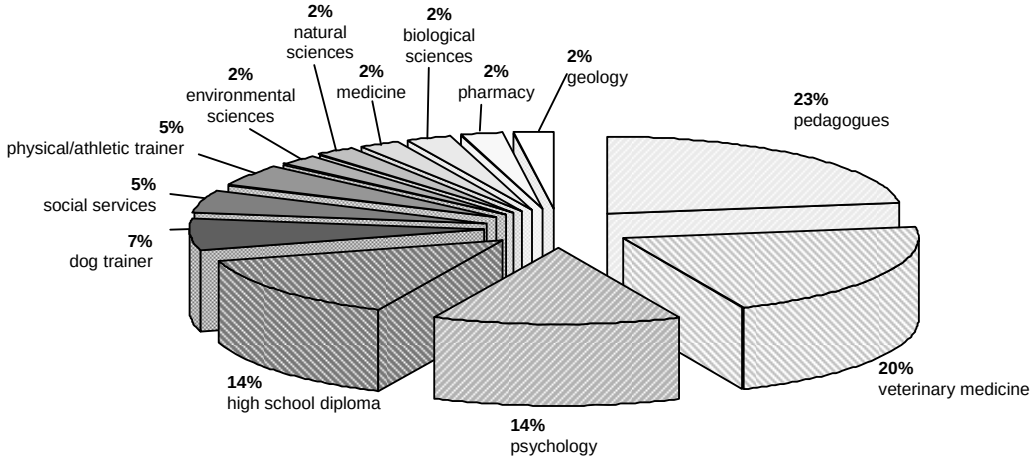

Figure 2. Education/main occupation of pet therapy operators

Many projects of AAA and of AAT are listed as zooanthropology projects for children (Zooantropologia Didattica, ZD). These are projects of Pet Education devoted to children aged 2-16, some with handicap of different types. These operators, in addition to the certificates in *Referee in Welfare Zooanthropology* or

Certified Pet Partner Couple, also obtained a certificate in *Referee in Didactic Zooanthropology* at the SIUA or by SCIVAC (Società Culturale Italiana Veterinari per Animali da Compagnia: Italian Cultural Society of Companion Animal Vets) (Figure 3).

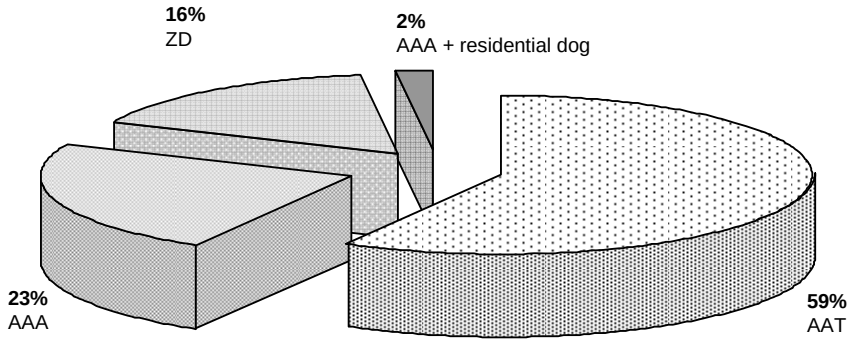

Figure 3. Relative occurrence of AAT/AAA projects (in Emilia Romagna 26 ZD projects have been reported)

In some cases the operators with a certificate in *Certified Pet Partner Couple* and *Referee in Welfare Zooanthropology* are also *Dog Educators*, certificate obtained at the SIUA.

As for training courses involving dogs, subjects coming from amateur farms, but also dogs coming from kennels and professional farms have attended the *Certified Pet Partner Couple* Course. Following this training, dogs obtain the SIUA certification for A, B, C, D category.

On the other hand, to become *Referee Pet Operator*, the dog has to attend a course of *Basic Education* and of *Education to Relationship*. This allows it to take part in a working group (without forming a certificated couple).

One case of *Certification of Dog for Assistance and Therapy* has been documented at the *Assistance Dog Institute*, Rounert Park, California and one dog was found certified by *Delta Society*.

Sporadically, animals belonging to various species such as dwarf rabbits, California rabbits, dwarf Tibetan goats (coming from farms unharmed from brucellosis), cats, turtles and tortoise have been reported as being used as pet therapists (Figure 4).

The typology of AAA and AAT users is represented, mostly, by children and elderly, followed by adolescents and adults. As for children, there are subjects with verified diagnosis of hiperactivity, deficits in learning, Down syndrome, West syndrome, Rett syndrome, mental delay, speech and communication disorders of different levels (degree), as well hospitalized children.

As for adolescent, these are teens with physical and/or psychic handicap, experiencing social unease and maladjustment.

Adults are psychiatric patients with schizophrenic symptoms and relational disorders, in addition to cases of autism, psychosis, mental handicap, premature senile dementia and mental retardation. Carriers of psychiatric pathologies associated with cognitive deficits as well patients in semi vegetative status due to severe brain lesions, patients with post-traumatic psycho-physic disabilities, ex drug abusers with confused and depressive states.

In the case of elderly people, the pathologies more often found are senile dementia, Alzheimer's disease, confused and anxious states, mental and physic disabilities, motor disorders.

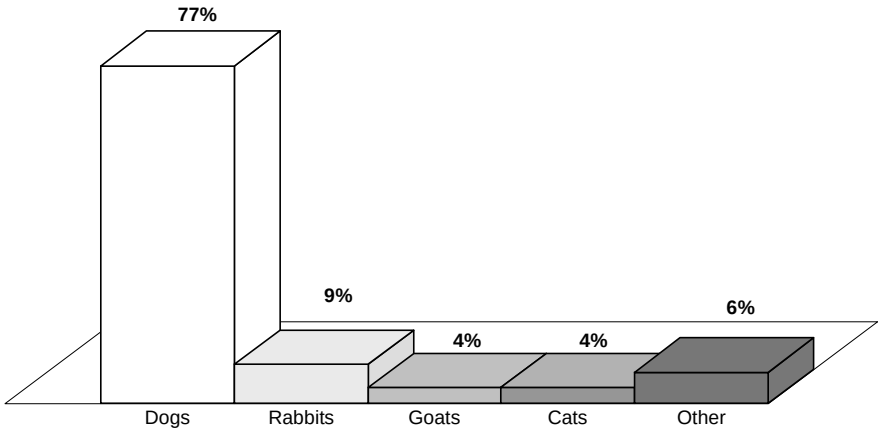

Figure 4. Animals usually used as pet therapists

The structures hosting pet therapy projects are public structures such as nursery schools, kindergarten schools, elementary schools, middle schools, high schools, residential homes for adolescents without a family, residential houses, daytime centres for disabled, institutes of public assistance and charities (socio-rehabilitative daytime centres and sheltered houses for elderly), the Judicial Psychiatric Hospital of Reggio Emilia. Between the private structures we can enlist: nursery schools, private structures for disabled people, private houses with children and adolescents. Hospital structures in which pet therapy is performed are: the Judicial Psychiatric Hospital of Reggio Emilia, and the Paediatric ward "Gozzadini" of the S. Orsola Hospital of Bologna. In some other Hospitals, such as the Rizzoli Hospital of Bologna and "The house of Awakenings Luca De Nigris" (Department of Neurosciences, Maggiore Hospital and Bellaria Hospital), AAT projects have been scheduled to start but have not yet been activated (Figure 5, 6).

The institutions involved included numerous towns with surroundings and villages – Bologna (Calderara di Reno, Casalecchio di Reno, Castel San Pietro, Granarolo dell'Emilia, Osteria Grande, San Giorgio di Piano, San Giovanni in Persiceto, Zola Predosa), Modena (Castelfranco Emilia, Carpi, Castelnuovo Rangone, Campogalliano, Formigine, Sassuolo), Reggio Emilia (Bagnolo in Piano), Ravenna –, the Province of Bologna, the Region Emilia Romagna, the Office for Animals Rights of Bologna, The Society of Transport of Ravenna, the Faculty of Pedagogy of the University of Bologna, the Institute Charitas of Modena, some social cooperatives, the Local Health Unit of Modena, the Services of Paediatric Neuropsychiatry of the Local Health Unit of Modena.

In the region Emilia Romagna, from 2001 to 2006 included, 37 AAA projects were registered as well as 92 AAT projects, 26 zooanthropology projects for children and adults, 3 AAA projects (one is still ongoing) forecasting the permanent custody of the dog to the structure in which the activities are performed.

Forty-one operators have been involved: 37 work for 7 groups registered and 4 work as individuals. The total number of animals involved is greater than the one of the animals really used in the projects carried out. However, 56 animals overall were used, 43 of which were dogs. In relation to the institutions involved in the project from 2001 to 2006, 26 are institution for the elderly, 15 institutions for adolescent disabled, 14 elementary schools, 11 nursery schools, 5 kindergarten, 2 middle schools, 2 high schools, 1 private nursery school, 1 nursery school breast-fed section, a veterinary surgery of Local Health Unit at the municipal kennel, 1 judicial psychiatric hospital, 1 general hospital, 14 private houses (Figure 5).

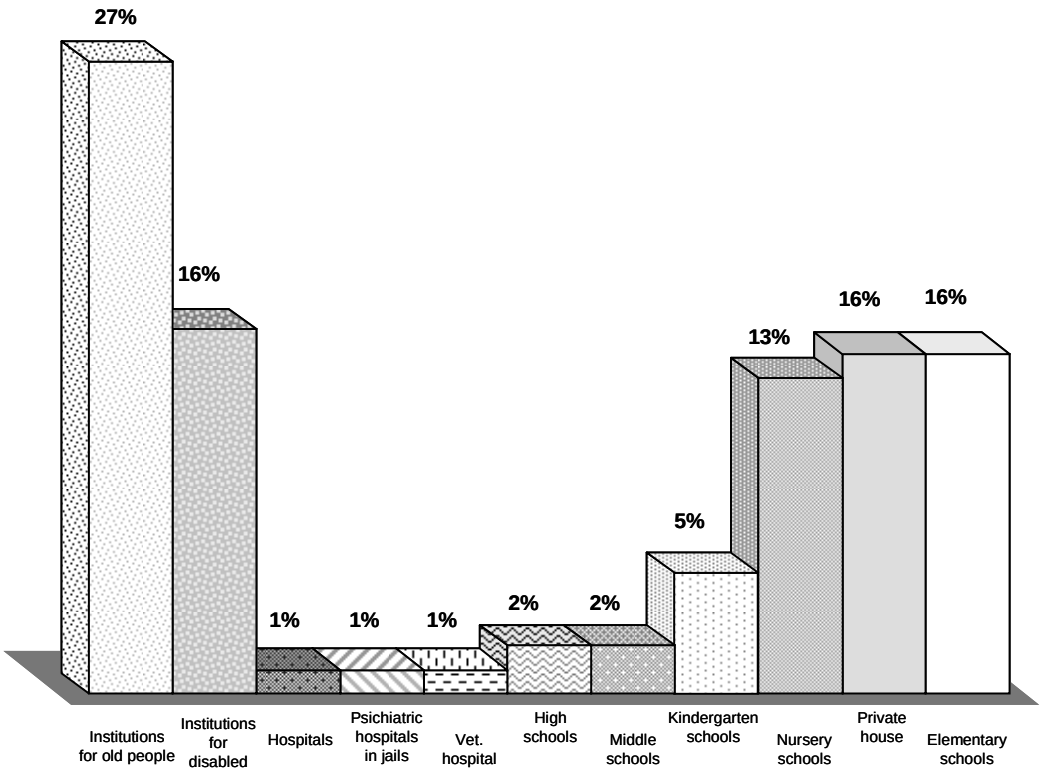

Figure 5. Main structures hosting AAA and AAT activities

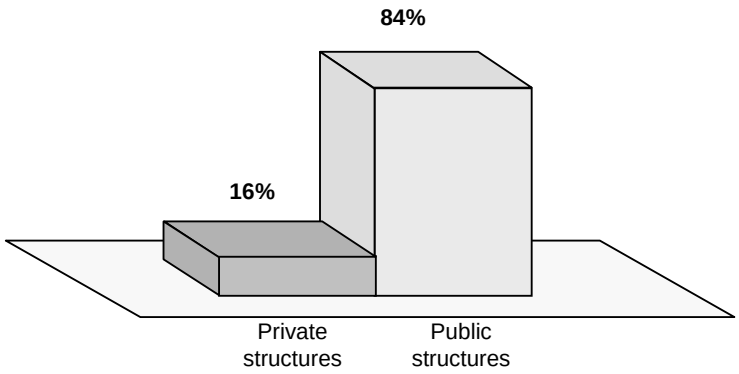

Figure 6. Main structures hosting AAA and AAT activities

The smallest number estimated of users profiting by services delivered between 2001 and 2006 (excluding projects devoted to primary and nursery schools for which it could be too arbitrary to establish a minimum number of users) reaches the number of 407.

Conclusions

Overall, Pet therapy and AAA have revealed, with time, their potential ability to heal as well as to provide opportunities to enhance the quality of the life of people with physical and mental disabilities (17).

At the institutional level, growing efforts have raised attention in pet therapy and AAA. However, no established methodologies are presently available for the therapeutic exploitation of animals, but the pressing need to help affected categories, especially children, has stimulated scattered efforts at an explosive pace.

The Istituto Superiore di Sanità, which plays an important advisory role in the Italian health system, has being taking an ever increasing role in attempting to regulate these activities by e.g. selecting good-quality training activities at the public academic system level (mainly University courses and Masters) and by sponsoring a few pilot experiences.

In this rapidly growing field, we are attempting to fill the need for i) identifying standard curriculum for trainers, avoiding spontaneous initiatives; ii) establishing, by means of a scientific consensus (both at the European and national level) a draft of guidelines to be implemented in the near future in selected centers, endowed by good scientific and clinical credentials; iii) promoting, at the international level, university research in pet/humans relationships, in order to study how dog's emotions are communicated to humans and other dogs.

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