

Donkey-assisted rehabilitation program for children: a pilot study

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Summary. Bonding with animals grants access to the sphere of affectivity and facilitates therapeutic engagement. The methodological approach of donkey-assisted programs is based on mediation, which is characterized by multidirectional relationships (patient-donkey-therapist). The donkey is an excellent facilitator in the motivation-building process, being able to stimulate the child's development by way of active and positive forces that foster psycho-affective and psycho-cognitive development processes. Results of this study, which focused on the child's approach to the donkey, indicate that while communicating with the animal, children rely more on physical expressions than on verbal language. Donkey-assisted rehabilitative sessions can help in identifying children's strong points, on which motivation could be built.

Key words: animal-facilitated therapy, children, communication, donkey, rehabilitation.

Riassunto (*Percorsi riabilitativi assistiti dagli asini: uno studio pilota*). Il legame con gli animali consente l'accesso alla sfera affettiva e facilita il percorso terapeutico. L'approccio metodologico dei programmi riabilitativi assistiti con gli asini è basato sulla mediazione, che è caratterizzata da relazioni multidirezionali (paziente-asino-terapista). L'asino è un eccellente facilitatore nella costruzione di processi motivazionali, essendo in grado di promuovere, attraverso stimoli attivi e positivi, lo sviluppo, sia psico-emozionale sia psico-cognitivo del bambino. I risultati di questo studio indicano che i bambini, nell'approcciarsi a questo animale, fanno affidamento più su espressioni comunicative fisiche che sul linguaggio verbale. Percorsi riabilitativi assistiti dagli asini aiutano quindi a identificare i punti di forza del bambino su cui poi costruire processi motivazionali.

Parole chiave: terapia riabilitativa con gli animali, bambini, comunicazione, asino, riabilitazione.

INTRODUCTION

The mechanisms of action involved in animal-assisted therapy can be broadly grouped into the following categories:

- *Affective-relational mechanism.* The affective mechanism is the most important and beneficial mechanism of action involved in the human-animal bond and it has a more or less a strong emotional base. The stronger the emotional bond, the greater the beneficial results. Emotions (and, of course, not just those evoked by the human-animal bond) play a key role in many diseases.
- *Psychological stimulus.* Intense human-animal bond acts as a powerful psychological stimulus on several parts of the human psyche: social behaviour and relational mechanisms, character components and cognitive aspects.
- *Recreational mechanism.* Play, fun and the frequent laughter that are often sparked by the human-animal bond are keys to understanding the role of the animal's presence. Play and recreation are extremely beneficial for people who suffer from isolation and low self-esteem and, above all, they cause positive changes in mood that

have substantial beneficial impacts on health and wellbeing. Moreover, play encourages movement and is the best form of exercise.

- *Psychosomatic mechanism.* Thanks to the above-mentioned affective, emotional, psychological stimulus and recreational mechanisms, activities with animals have significant psychosomatic implications.
- *Physical mechanisms.* The physical component of the human-animal bond is used in different ways according to the patient's needs.
- *Mechanisms connected* to the above aforementioned.

The *choice of the donkey* is based on its ethological characteristics. Primarily, its size, large but not too large, makes the donkey an unavoidable but not intimidating interlocutor. Thanks to its physical structure, the donkey's typical, open predisposition towards others provides a physically welcoming acceptance and thus an opportunity for contact and space sharing. When confronted with a new situation, the donkey does not run away from it but rather stops and ponders what to do; it's neither impulsive nor anxious and thus instinctively curious,

hoping to make a connection with someone to fulfil its socialisation needs [1].

Bonding with the animal grants access to the sphere of affectivity and facilitates therapeutic engagement. The donkey permeates the setting of the encounter with its alert, affectionate and proactive presence whilst characterising the natural environment, which is already stimulating and pleasant on its own. A sort of “permeating reality”, that encourages to adopt a specific perspective where inside and outside coexist and are mutually involved in a communication process that is not considered only as a means or instrument, but as a psychological dimension that is a constituent of the person [2].

The methodological approach is based on mediation, which is characterized by multidirectional relationships (patient-donkey-therapist) that, on the whole, make up the stages of the therapeutic process. We will particularly focus on two elements that characterize the contribution of the donkey in such a setting. The first aspect concerns the quality of the relationship that is provided by the donkey: experience shows that the spontaneity of the animal activates the resources of the patient. Therefore, patients have the opportunity to revisit and explore their impoverished, rigid (or in any way hindered by suffering) communication skills. The natural relational inclination of the donkey grants direct, and not mediated, access to the patient’s intimate relational availability. The second aspect concerns the nature of communication: it is non-verbal, the body is engaged in a bidirectional exchange where individuals are naturally interacting with an animal who takes them as they are and this stimulates strong emotional responses and the development of adaptation skills. The body of the donkey “meets” the body of the person who is interacting with it in the “here and now”, in a mutual tension that enables them both to respond in an increasingly selective way to each other’s behaviour. It is a circular relation, with reciprocal feedbacks that are essentially experienced at physical level. These feedbacks are crucial elements in the rehabilitation-therapeutic intervention.

In our case, the relationship between the child and the animal often involves a series of subconscious mental processes that help the child’s natural psychological development. For instance, projection is a subconscious process whereby states of mind, feelings and emotions are transferred to the outside world. Children partially identify with the animal through which they are able to better express their feelings and this subconscious mechanism helps them to better cope with situations that cause anxiety and fear, situations that they will inevitably encounter in their lifetime.

In this sense, the animal may be seen as the mirror where children can recognize parts of themselves. Additionally, the non-judgmental, relational approach of the animal facilitates the work on self-esteem and performance anxiety, which both play a significant role in affective disturbances. Bonding

with the donkey helps children discover and control their body and encourages them to gradually explore the surrounding world. The donkey can help children significantly increase their motivation to play and move.

For children, play is the best communication medium: when children are engaged in play they have the opportunity to resolve as yet unresolved past issues in a symbolic manner and to directly or symbolically address present issues. Moreover, play is the most important tool a child can have to prepare for his/her future tasks. In this way, children can progressively become self-aware of their limitations but also of their potential [1].

In more general terms, the donkey is an excellent facilitator in the motivation-building process: in this case, the donkey stimulates the child’s development process by way of active and positive forces that foster psycho-affective and psycho-cognitive development processes.

From the point of view of the development of social behaviour and of relational mechanisms, the animal serves as a social catalyst and encourages communication through play and also boosts verbal language skills, the ability to read non-verbal signs and the development of body language. With regard to character building and emotional and affective development, the animal is a vehicle for affective exchange and gratification through positive reinforcement. It encourages the building of trust, self-esteem and self-image, contributes to the development of the sense of responsibility and, finally, provides an outlet for emotional release. In terms of cognitive development, the animal arouses children’s curiosity and attention thus motivating them to learn more about animals and nature, diversity, and therefore learn more about respect in general.

Fields of intervention

They are:

- relationship with the environment;
- with the animal;
- between child and therapist;
- between children.

Each session focuses on different aspects of these areas, depending on the child’s emotional state and behaviour. The method consists of enabling a multi-level communication between the actors involved in the observed relations, starting from an initial dimension that is purely sensorial and moving towards a subsequent dimension of attention that is “thought” and emotionally felt. The shift from one dimension to the other is gradual, codified and reversible at any moment, in accordance with the affective disposition of the subjects of the relationship.

The protocol has a certain degree of flexibility which varies according to the needs of the patients. Traditional methods and techniques used in helping relationships are used during the sessions, always taking into account the uniqueness and the differences of each patient.

Stages of the intervention

The intervention comprises various stages that are not necessarily executed in sequence. These stages can be grouped in three macro-areas: physical contact, the assumption of responsibility for the care of the animal and the relationship with the “other”, which introduces the complexity of communication. Namely, these stages include:

- creation of a shared and shareable living space;
- physical contact: from emotions to the body and, conversely, from the body to emotions. It induces affective and emotional rehabilitation processes based on the concept of a reversible two-way communication relationship between body and mind;
- communication: non verbal, learning the codes used by others and learning to recognize one's own codes;
- motivation: enhancement of self-meaningfulness;
- enable the development of skills starting from micro-decisions;
- the opportunity to experience a peaceful and affectively authentic relationship, which will induce self-expression and facilitate the awareness process.

Goals of the pilot study

They are:

- estimate the potential for inclusion of donkey-assisted rehabilitation therapy in children outpatient rehabilitation units;
- evaluate child-donkey approach modalities in structured settings;
- design an assessment-based rehabilitation protocol for donkey-assisted interventions.

MATERIALS AND METHODS

The sample was chosen from all the children who received logopedic/neuropsychomotor treatment at the Child Neuropsychiatry Outpatient Unit of the Istituto S. Giovanni di Dio Fatebenefratelli of Genzano (Italy) between June and December 2008. The sample included 4 children aged between 6 and 12 years, who were diagnosed with one or more of the following conditions:

- emotional-relational disturbances;
- communication difficulties;
- psychic distress and depression symptoms;
- behavioural disturbances;
- hyperactivity;
- mental retardation.

Assessments were performed at 3 time points:

- T0: start of treatment;
- T1: intermediate stage (3 months after the start of treatment);
- T2: end of treatment cycle (6 months).

At time T0, projective tests were administered to assess the emotional-affective-relational state of the children [3-5]. At each assessment time point, the children participated in a structured session in which they provided a graphical representation of their experience with the donkeys in order to verify their emotional-perceptive response. At the end of each session, the therapist completed the fields of the assessment sheet (*Table 1*). Session frequency was one 45-minute session weekly for 6 months. Clinical discussion was carried out at the end of each session in order to enable real-time adjustment of intervention strategies. Parts of the sessions were videotaped. The data from the assessment sheets was collected by a psychologist (member of the study team) who was blind to the sessions. Data was analyzed using the SPSS program, crosstabs analysis and Pearsons' Chi-Square tests.

Table 1 | *Assessment sheet: emotional-relational parameters recorded at each session*

	Level		
Duration of focused attention	low	medium	high
Spontaneous approach to the animal	low	medium	high
Assertiveness level	low	medium	high
Patient-therapist relationship	dislike / lack of collaboration/distrust	subordination / discontinuous collaboration (when, how...)	trust / reciprocity
Learning of target behaviours	discontinuous / insufficient	adequate	productive
Use of verbal communication	low and/or on and off	medium	high
Type of verbal communication	resistance / inhibition / compulsive	voluntary / spontaneous	informative / profound
Physical expression	inhibition / resistance /compulsive acts	excessive seeking of contact	adequate / expression according to one's own body rhythm
Emotional participation	low	medium	high
Enjoyment of contact	low	medium	high
Aversion to contact	low	medium	high

Professional figure involved in the intervention: onotherapists.

Table 2 | Composition of the sample

Patient	Age (years)	Diagnosis
FF	6	Severe language disturbance; reduced attention span; motor impairment; emotional retardation
SC	8	ADHD; obsessive/compulsive traits
FD	10	Mild mental retardation – NDD; hyper-verbalization; low self – esteem
FF	12	Down syndrome with moderate mental retardation

RESULTS

The sample included 4 patients (3 males and 1 female) with an average age of 9 years (range 6-12 yrs). The composition of the sample is as showed in *Table 2*. The children participated in an average of 15 sessions during the study period.

Data from each session was collected with an assessment sheet (*Table 1*), processed with the SPSS program and then analyzed to assess possible correlations between variables. We assigned numerical values to the parameters that were characterized by three levels (low - 1, medium - 2 and high - 3) recorded in the assessment sheet and performed crosstabs analysis and Pearson's chi-square test.

In summary, this correlation test shows that there is no association between the use of verbal communication and emotional participation in our 4 patients ($\chi^2 = 0.749$, $p > 0.05$), whereas there is an association between physical expression and spontaneous approach towards the animal ($\chi^2 = 20, 089$, $p = 0.000$).

In particular, we analyzed the trend of these two parameters over time (use of language and physical expression) in two children who suffered from opposite language disturbances: FD who had hyper-verbalization and FF who had a severe verbal impairment.

Over the course of 15 sessions, FD stabilized at a medium level of verbal communication (*Figure 1*), while always maintaining a high level of physical expression (*Figure 2*). In conclusion, when the child is with the donkey he/she manages to curb his/her excessive use of language and is able to enhance his/her

physical expression and to keep it at a steady level in order to communicate with the animal.

FF starts from a low level and then reaches and maintains a medium level of verbal communication (*Figure 3*), while keeping a high level of physical expression (*Figure 4*).

Moreover, the descriptive analysis of the graphical representations drawn by the children in the three assessment time points provides interesting insights. This is especially true in the case of SC, as shown in *Figure 5A and Figure 5B*. The drawings produced by SC used to describe the sessions at times T0 (5A) and T2 (5B) highlight the differences in colour and detail.

In the T0 drawing, one colour was used for all three characters, while only the sun has its own colour. In the T2 drawing, colours are varied and are used appropriately (faces and hands are pink, human hair is correctly blond and dark, the hooves of the donkey are brown, the sun is yellow, the flower is bright orange, etc.) and the shapes are outlined in black. "The lack of colour may indicate affective voids, inhibition, depression" [6]. The colours of the T2 drawing are clean and full indicating the child was secure in his/her feelings. The first drawing lacks details; it is sketched and shows devaluation of self and of the other characters. Instead, in the second drawing, mouth, eyes, nose and hair are present. The presence of hands is not of marginal importance. In the first drawing, both figures have no hands. Hands are an organ of contact, the fact that they are missing might indicate the inability to make contact with the environment. When we compare the two drawings, we can see that in the second drawing SC is paying much more attention to reality and details than in the first one, thus showing an increased ability to analyze the surrounding world.

We can conclude that, at the end of this short journey with the donkeys, the child was able to make contact with the external world (and feel it) and to enhance his/her own self-worth and the worth of those who accompanied him/her on this journey.

DISCUSSION

The analysis of the study results, which focused on the child's approach to the donkey, indicates that the children relied more on physical expression to com-

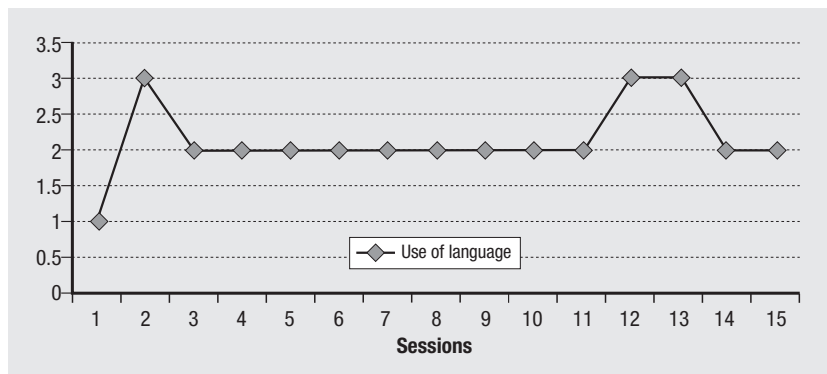


Fig. 1 | Use of language in FD
1 = low and/or on and off;
2 = medium; 3 = high.

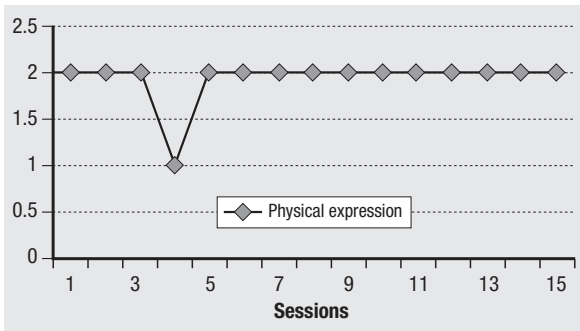


Fig. 2 | Use of physical expression in FD
 1 = inhibition / resistance / compulsive acts;
 2 = excessive seeking of contact; 3 = adequate / expression according to one's own body rhythm.

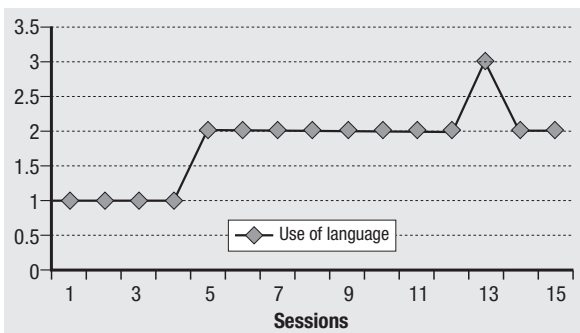


Fig. 3 | Use of language in FF
 1 = low and/or on and off; 2 = medium; 3 = high.

municate with the donkeys than on language, with a strong emotional participation that was not connected to the use of language.

Furthermore, if we analyze the differences in 2 of the 4 patients, who suffered from opposite language disorders, we see that the donkey proved to be a flexible animal in terms of therapeutic effectiveness.

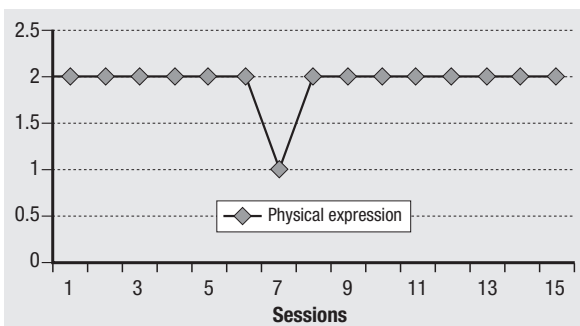


Fig. 4 | Use of physical expression in FF
 1 = inhibition / resistance / compulsive acts;
 2 = excessive seeking of contact; 3 = adequate / expression according to one's own body rhythm.



Fig. 5 | Drawings produced by SC to describe the session at times T0 (A) and T2 (B).

The analysis of the drawings indicates that the children were able to find a way to connect their own personal representation of reality with the outside world and therefore showed an improved ability to analyze their surroundings.

In brief, the various assessments indicated that the children were able to find a place where they could express their own personality and relational skills. Moreover, they provided the therapeutic team with tools to enhance their knowledge of the children and maximize the children's rehabilitation potential because the sessions helped to identify the children's strong points on which motivation could be built.

In conclusion, the use of assessment sheets that included various parameters relating to cognitive, behavioural and relational variables has proved extremely helpful for monitoring and adjusting the intervention based on children's progress, as well as for collecting data for longitudinal analysis.

It would be important to verify through specific tests (e.g. language tests) if any changes occurred in the functional profile of the children and compare it with a control group of children who did not participate in donkey-assisted therapy sessions.

Nevertheless, the pilot test allowed us to lay down the foundations for future studies, as it showed that donkeys represent a valuable therapeutic opportunity that deserves to be further investigated in structured settings and that requires

an approach that integrates different professional skills (doctor-psychologist-therapist, etc.).

Thus, the mediation of the donkey is a tool that has the potential to improve patient rehabilitation in addition to traditional methods/practices. The mediation of the donkey reminded us that therapy is not just about finding a solution to a problem but also about the approach itself.

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Conflict of interest statement

There are no potential conflicts of interest or any financial or personal relationships with other people or organizations that could inappropriately bias conduct and findings of this study.

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