



## Research paper

# Animal-assisted therapy used for anxiety disorders in patients with learning disabilities: An observational study

F. Giuliani<sup>a,\*</sup>, M. Jacquemettaz<sup>a,b</sup><sup>a</sup> Section of Psychiatry of Mental Development, Department of Psychiatry at the Vaud University Hospital, Lausanne, Switzerland<sup>b</sup> Institute of Psychology, University of Lausanne, Switzerland

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## ABSTRACT

**Introduction:** Animal-assisted therapy is defined as the positive interaction between an animal and a patient within a therapeutic framework. Previous studies have reported on the beneficial effects of animal-assisted therapy with patients suffering from anxiety, a major challenge for professionals caring for patients with intellectual disability. The presence of psychiatric comorbidities such as depression or anxiety within this population is two to four times higher than in the general population. Finding new treatment options for such anxiety disorders is important. The aim of this observational study was to explore whether the level of anxiety decreased when a dog was present during therapy for people with learning disability.

**Method:** This was an observational study which involved 53 adult patients with mild learning disabilities (26 men) average age,  $36.5 \pm 11.2$  years.

The State-Trait Anxiety Inventory (STAI) was completed by participants with the therapist, before and after two 30-min therapeutic sessions, one in the presence of a dog and the other with only the therapist.

**Results:** The STAI score significantly decreased after the session with the dog, which was not the case after the session without the dog. After the animal-assisted session, the STAI score was significantly lower ( $Z = -4.654$ ;  $p < 0.0001$ ), which was not the case for the session without the dog ( $Z = -1.054$ ;  $p = 0.295$ ). There was a significant difference in anxiety between men and women.

**Conclusion:** Results suggest that there are positive benefits of animal-assisted therapy for individuals with learning disabilities which require confirmation in a randomized controlled trial.

## 1. Introduction

Anxiety disorders represent a major challenge for the therapy teams and the families who care for individuals with learning disabilities. This group is very difficult to treat, and existing methods to help them are very limited.

This kind of disorder principally manifests itself through a more or less acute concern regarding certain activities perceived as stressful or challenging. But it can also manifest during therapy sessions meant to confront the challenges of daily life or social relationships, which will reduce the therapy's effectiveness. Generalized anxiety can lead to behavioral problems like agitation, irritability, tiredness, muscle tension, lowered concentration level and difficulties in sharing attention with a speaker. For individuals suffering from anxiety disorders, therapeutic measures generally involve the combination of an anti-anxiety medication and therapeutic support. As highlighted by Hoffman, Hyung Lee et al. [1], discussions surrounding the clinical effects of these medicines raised the necessity of finding alternative and additional treatments to

medicine-based treatments. Previous studies have shown that domestic animals make it possible to decrease an individual's stress and anxiety level. A pilot study demonstrated that a 15-min interaction with a dog significantly reduced patient anxiety [2]. Going beyond this benefit, other authors have discovered that the presence of a dog leads to lowered blood pressure and a decrease in the level of cortisol in stressed patients [3–6]. Individuals with mental retardation also have difficulty communicating, something which hinders their care. Traditional therapies only partially improve the situation of these individuals, because they often rely on verbal communication [7], something that animal-based therapy can work around [8].

Animal-assisted therapy (AAT) seems to be a particularly attractive method for helping individuals suffering from anxiety disorders. Animal therapy is defined as the deliberate inclusion of a trained animal in a treatment and whose goal is to achieve results that are difficult to obtain in another way and facilitated through the interaction with the animal [9]. The use of a dog is not insignificant. Indeed, dogs have been protecting humans for more than 15,000 years, something which offers

\* Corresponding author.

E-mail address: [fabienne.giuliani@chuv.ch](mailto:fabienne.giuliani@chuv.ch) (F. Giuliani).

a feeling of security and comfort [1], and which is not necessarily found in traditional therapy techniques. Often perceived as “man’s best friend”, the animal’s spontaneous enthusiasm for social interactions provides a substantial stimulus for the individual’s social behavior. The presence of the dog facilitates communication between the therapist and the patient, which increases their positive interactions. Numerous studies have shown the effectiveness and usefulness of animals in therapy, but AAT does more than that. AAT seems too particularly interesting for patients [2]. More than just helping the person calm down and develop social behaviors, the animal provides a source of motivation.

Nimer and Lundahl’s [10] meta-analysis demonstrated that the effect size of AAT was 0.35 for well-being, 0.63 for behavior and 0.93 for medical, for individuals with a mental diagnosis who were treated with AAT compared to those with a mental diagnosis who did not receive AAT. Kamioka et al. [11] and Kruger and Serpell [12], have affirmed that animals are a useful addition to therapy to diminish anxiety. For many patients, having a session with a therapist is a stressful experience and the presence of a dog tends to calm this stress and reduce anxiety. The animal is then used as a way of turning the patient’s attention away from the anxiety-producing situation. Finally, Berget et al. [13] indicate in their article that a decrease of anxiety is visible in the six months following AAT, but not immediately for the population studied. For our population, no study has yet been conducted on patients with intellectual disability and anxiety. Individuals living with mild learning disabilities deserve the development of new psychotherapeutic methods that are adapted to their possibilities. They are aware, in a more or less frustrating way, of what challenges them or worries them in a given existential situation. As we have seen, AAT offers an interesting alternative support. Based on the study by Hoffman, Hyung Lee et al. [1] as inspiration, we wanted to test the effects of a playful interaction with a dog within the framework of a basic therapy support situation with individuals living with a mild learning disabilities. The support situation involves therapeutic interviews oriented toward problem-solving. The goal of the research was thus to verify, within the framework of a standard therapeutic intervention, how much can mediating the process of entering a relationship through interactions with a dog produce a measurable soothing of the patient’s anxiety. Hoffman, Hyung Lee et al. [1] discovered that AAT reduced anxiety levels in patients suffering from depression even more than classic therapy. We wanted to verify whether the same result could be found working with a population of patients with mental disabilities. Our hypothesis was that the level of anxiety would decrease when a dog was present during therapy.

## 2. Patients and methods

### 2.1. Patients

We were interested in a patient group with intellectual disability. A total of 60 people were approached and only 7 refused to take part in the study. Of the 53 adult patients, 26 men and 27 women ( $36.5 \pm 11.2$  years), 13 patients, lived in the family home and 40 patients were living in a unit belonging to a specialized institution. All came with a carer or a parent.

All participants were diagnosed by a psychologist and received the diagnosis of having mild learning disabilities, meaning an IQ between 50 and 70 (mild mental retardation according to the CIM-10: F70), and were under regular outpatient treatment at the Section of Psychiatry of Mental Development (SPDM) at the University Hospital Center, Vaud (CHUV). They also presented with symptoms of generalized anxiety (generalized anxiety disorder according to CIM-10: F41.1) as diagnosed by a psychiatrist. No patient was having medication during the study. Thus, our inclusion criteria were that the individual had both an intellectual disability and an anxiety disorder. Exclusion criteria were dog phobia or an allergy or aversion to dogs. The degree of intellectual disability was determined using the Wechsler Intelligent Scale for Adult (WAIS-IV). In order to measure anxiety, we used the STAI, the State-

Trait Anxiety Inventory by Spielberg [14].

### 2.2. Procedures

For this study, we used a single-subject design in which the subject group was its own control group. In the article by Hoffman & et al., the sample studied involved 12 participants. We wanted to increase the sample ( $n = 53$ ), which would provide a sufficient sample size for the Wilcoxon test. (Indeed, according to the Wilcoxon tables, a large sample is superior or equal to 25.)

The protocol for the clinical study was written based on the same methodology as Hoffmann but adapted to our population [1]. The protocol ( $n^{\circ}$  285/13) entitled “Animal-assisted therapy used for anxiety disorder in patients with learning disabilities” was approved by the Swiss Ethics Committee (CER-VD and Swissmedic nb 285/13, 09/25/2014). Prior to participation in the evaluation, written consent was obtained from the participant’s legal representative. Individuals were well known to the author and, in the opinion of the authors, had a receptive language sufficient to understand the instructions. Patients could not give their written consent, but they agreed orally to participate in the study. The etiology of intellectual disability was not examined.

The dog used was a border collie trained for this purpose (Fig. 1). The dog and the therapist were trained by the Swiss Romande Cynology Federation (authorization nb OVF 08/0008). An authorization request to use the dog on site at the Cery Hospital was made to the direction of the CHUV. The STAI was usable within the framework of our research, as our target population was comprised of individuals whose learning disabilities only moderately inhibited verbalization and comprehension capacity. The STAI is a self-evaluation, it is generally filled out by the subject with the therapist’s help. In consideration of our patients’ mild learning disabilities, the different questions are formulated and explained orally by the researcher who collected responses during a semi-structured interview. Data collection was conducted in a way to ensure the patient’s anonymity.

### 2.3. Intervention

Sessions were organized always for the same hour. The session with the dog and the therapist was organized as follows. When the patient arrived in the waiting room, the patient was led into an interview room to fill out the STAI together. The questions were formulated orally so that the patient could understand the meaning of the questions. If the question was poorly understood, the question was reformulated by the therapist. Once the questionnaire was completed, the patient selected the activity that he wanted to do with the dog: play ball with the dog, pet the dog or brush it. During this activity, the therapist intervened to ask questions related to dogs, related to the patients experience with animals in general and the like in order to see if the activity was



Fig. 1. “Doudou”, the dog used for animal-assisted therapy.

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