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Research paper

The effect of animal-assisted therapy on emotional and behavioral symptoms in children and adolescents hospitalized for acute mental disorders☆

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ABSTRACT

Introduction: Animal-Assisted Therapy (AAT) may be useful therapeutically to improve patient outcomes. The objective of this study was to examine the effects of AAT on behavioral and emotional symptoms reported by children and adolescent psychiatric patients hospitalized for acute mental disorders.
Methods: A pre-post experimental design, randomized controlled trial (RCT) was carried out. 20 patients provided with an AAT intervention were compared with 20 patients receiving standard therapeutic treatment. A Youth Self-Report (YSR) was used to measure patients' emotional and behavioral symptoms. Global functioning was assessed by the Children Global Assessment Scale (C-GAS).
Results: Results indicated a significant decrease in internalizing symptoms ($p < .001$) and an increase in total competence ($p < .001$), as well significant improvements in global functioning ($p < .0001$) in the AAT treatment group, but not in the control group.
Conclusions: The effects of AAT in reducing emotional and behavioral symptoms and increasing global competence and psychological functioning were substantiated in this study. We have also found that for internalization symptoms, AAT could be the more effective.

1. Introduction

Since the early works of the psychologist Boris Levinson in the 1960s, the first to introduce the use of Animal-Assisted Therapy in clinical practice for the treatment of children and young people with emotional and behavioral difficulties, several studies have been conducted to demonstrate the efficacy of this treatment [1].

In AAT, the animal essentially fits the role of co-therapist collaborating to create a therapeutic space of trust. This improves the therapeutic alliance and promotes a secure patient—therapist relationship and it is an essential element in a high quality therapeutic process [2]. Most of the studies on the therapeutic influence of AAT focus particularly on mental, social and emotional components.

The evidence from literature suggests positive outcomes in young populations in various areas of health and with a wide range of psychological disorders.

For example, studies in a residential care facility demonstrated improved mental health in children and youths who had suffered childhood trauma. Children and adolescents with traumatic experiences are at risk for psychopathological factors, so establishing a bond of secure attachment in an AAT context represents an emotional experience and an opportunity to build adaptive internal operative models [3]. Overall, most of the studies indicate the influence of AAT in promoting calmness in the patient. In clinical settings the presence of a dog results in a reduction of distress during medical procedures and has been shown to facilitate coping with hospitalization in pediatric patients [4].

The presence of animals also promotes a significant increase in social behavior, interpersonal interaction, and social extroversion in children with Autism Spectrum Disorders (ASD) [5], mental retardation, and mental illness-related diseases. Proposals have shown that for these young people, the presence of animals in the therapeutic environment is a catalyzing element in their social interaction, through which therapy becomes less threatening and

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both therapeutic alliance and spontaneous communication are improved.

Instead, less is known about the role of AAT in reducing psychopathological symptoms of acute psychiatric diseases in both children and adolescents in hospital settings.

A recent study of Animal-Assisted Therapy (AAT) in hospitalized adolescents with psychiatric disorders demonstrated its substantial effect on clinical and recovery progress. Results showed an increase in routine school attendance and a significant reduction in time spent in hospital, as well as improvement in global functioning in patients of the treatment group, but not in controls [6].

In children and adolescents who have suffered acute mental disorders, the ability to accomplish life goals is undermined and is often associated with many health and behavioral problems that diminish interpersonal functioning [7].

Some AAT studies have investigated basic research questions, hence there is variability in the way in which AAT is implemented, and in the design and rigor of studies [8]. For example, to date there are few existing studies that verify the effectiveness of AAT in controlled conditions [9]. Most research has no clear experimental design, yielding inconsistent findings. Furthermore, there are limited published protocols that offer guidelines for AAT procedures [10].

When evaluating the effectiveness of AAT, the application of a control group is fundamental, as well as the employment of specific and standardized measures for assessing clinical and behavioral outcomes. For this reason in the context of clinical child psychology and psychiatry, measurements of symptoms and adaptations have been widely used to evaluate the progress of ongoing treatment [10]. The assessment of impairment and competence in functioning is useful for distinguishing the different contributions in the therapeutic setting. Thus, the selection of outcome is an important issue for evaluating the effectiveness of AAT intervention and also understanding the impact on the clinical progress in children and adolescents [12]. The reduction of symptoms, therefore, is clinically important in hospital settings because they may contribute towards the improvement of the patient's compliance and motivation treatment. We have selected these parameters because clinical observations and literature both highlight these issues in children and adolescents.

Despite these promising results, research on animal assisted interventions on target populations is still in its infancy and further controlled randomized studies are needed to assess the practical significance of this type of intervention and its possible role in clinical daily routine [13].

In the present study the treatment outcomes are based on validated standardized measurements and a randomized control [U3] trial design was used.

1.1. Purpose of the study

The purpose of the present study was to investigate the effectiveness of AAT on: (1) reducing the behavioral and emotional self-perceived symptoms in children and adolescents with acute psychiatric disorders, and (2) improving their clinical outcomes. We were also interested in (3) verifying the changes of patients' observed behavioral patterns in the interaction with animals during the AAT.

We expected AAT to significantly work on reducing patients' internalizing and externalizing behavior and emotional self-perceived symptoms and on increasing their total competence, global functioning and adjustment. We also expected that through AAT there would be an improvement in patients' adaptive behaviors in other life settings and thus a reduction in the duration of care. We also wanted to recognize the clinical symptoms for which AAT would be the more recommended and efficient treatment.

2. Methods

2.1. Study design

A pre-post experimental design with a randomized controlled trial (RCT) was implemented to evaluate the effects of AAT on patient outcomes.

2.2. Participants

A total sample of 40 children and adolescents with severe psychiatric diagnoses, aged from 11 to 17 years old at the beginning (T0) was recruited from the population of inpatients of the Child and Adolescent Psychiatric Unit of the Meyer Pediatric Hospital in Florence. 20 (9 M and 11 F) participants were assigned to the treatment group (mean age = 15.20, SD = 1.96), and 20 (9 M and 11 F) to the control group (mean age = 16.35, SD = 1.30). Patients of the two groups were similar in age and sex. Diagnosis was made by a neuropsychiatrist according the ICD-9 criteria. All participants underwent a standard treatment protocol as described below. Only the treatment group received additional AAT. Intervention was implemented by staff members trained in Animal Assisted Activities (AAA) and AAT programs. Patients were randomly assigned to the treatment or control group, using a randomization method of computer-generated random numbers.

2.3. Procedure

The study was conducted over a 14-month period by the Child and Adolescent Psychiatry Unit of the Meyer Pediatric Hospital, University of Florence, in collaboration with the Health Sciences Department, University of Florence, and the School for Guide Dogs for the Blind of the Region of Tuscany, (pet-partners trained for Animal-Assisted Activities and AAT interventions to the standards of Pet-Partner®, ex-Delta Society).

This Unit treats young patients with a broad range of acute psychiatric disorders (mood disorders, anxiety disorders and eating disorders). Patients were hospitalized for an extensive period of time, generally from 2 weeks to 3–4 months (either as out-patients in the Day Hospital or in-patient hospitalization).

The usual therapeutic program was developed by a multidisciplinary team and includes patients' psychiatric medical assessment and therapies, support therapy to their family, psychoeducational treatment, individual psychotherapy, nursing "maternage" and supportive intervention (such as school in hospital, expressive laboratories, play activity etc.). The main objective of the plan of care was to encourage the patient's progress from symptomatic conduct to recognition of his/her individual psychiatric disease, and to enhance adaptive competencies by offering experiences of everyday life, such as school attendance, external social activities, supportive relationships, etc.

All participants underwent the standard treatment protocol of the above Hospital Unit. Only the treatment group received additional AAT. The present research protocol was in accordance with an existing AAT program developed by Stefanini et al. [6].

Before collecting data, we implemented a preliminary phase that included: (a) training of staff members in Animal-Assisted Activities (AAA) and AAT programs; (b) definition of population; (c) planning of therapeutic intervention. In general, data for the individual AAT program is collected over the course of two AAA group meetings (which are part of the generic integrated activities of the hospital). These meetings occur prior to the individual AAT sessions and are when the patient is matched to a dog/handler pairing

Intervention was implemented by staff members trained in Animal Assisted Activities (AAA) and AAT programs. In our