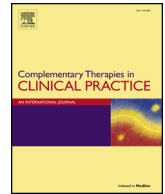




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The use of animal-assisted therapy in combination with physical therapy in an inpatient rehabilitation facility: A case report

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ABSTRACT

Background: Animal-assisted therapy (AAT) is a growing form of intervention in the field of rehabilitation often with the goals of decreasing pain, anxiety, and depression. There is a lack of literature on the use of AAT in inpatient rehabilitation facilities (IRF).

Purpose: This intrinsic case report describes the use of AAT in combination with physical therapy (PT) in the treatment of a middle-aged female status-post spinal surgery.

Materials and methods: This patient was treated with standard of care physical and occupational therapy in an IRF with the addition of AAT within 32% of the therapy sessions. AAT sessions focused on sitting and standing tolerance, standing balance, endurance, ambulation, stair negotiation and kitchen mobility. Clinical measures included the 6 Minute Walk Test (6MWT), the Functional Independence Measure (FIM) total score and the FIM motor subscale score.

Clinical findings: From admission to discharge from the IRF, change was noted in the areas of sitting tolerance, total FIM score, the motor subscale score of the FIM, and on 6MWT distance. Due to other therapies simultaneously occurring, no conclusions on AAT as a treatment can be made. AAT did provide more opportunities for this patient to engage in therapeutic activities.

Conclusion: AAT was used during PT, in attempt to facilitate participation and distract from pain in order to work on therapeutic activities and achieve the patient's functional goals. This case report can be used as a model for other IRF therapy programs interested in AAT, can provide information about a therapeutic modality and hopefully will inspire future rigorously designed research studies.

1. Introduction

Animal assisted therapy (AAT) is a type of therapeutic intervention that utilizes animals to achieve specific therapeutic goals set by a healthcare professional [1]. Unlike AAT, animal assisted activities (AAA) is not usually specific to individual therapeutic goals and does not necessarily require facilitation by a healthcare provider [1]. Thus, AAT differs from AAA, as it is facilitated by a rehabilitation professional with the goal of addressing patients' individualized goals [1].

Use of animals for therapeutic effect is documented as far back as the middle ages in Belgium, where animals and humans were provided rehabilitation together [2]. In the 1790's, a psychiatric facility in the United Kingdom had patients interact with various types of animals during their stay with the goals of socialization, relaxation, and social support [1,3]. Use of animals for therapy in the United States was not widely incorporated until the 1960's [1]. In the past 50 years, there has

been increased implementation of AAT in healthcare settings within the United States; thus, there is an increasing body of literature in this area. The largest numbers of the research studies on AAT are conducted in nursing homes or in an outpatient setting [4,5]. The most commonly studied diagnoses are schizophrenia, dementia, and depression [4,6]. In these studies, it has been demonstrated that incorporation of animals can improve interaction, quality of life, and depressive symptoms [4]. It has also been shown to decrease self-perceived pain [4].

The overall theory behind AAT originated and is based on the human-animal bond [7]. It has been theorized that pet ownership and interaction results in a positive emotional state [7,8]. Humans that interact with animals, whether as owners or in a therapeutic setting, may show decreased anxiety [7,8].

Research lacks the examination of AAT in the adult inpatient rehabilitation facility (IRF) setting. Specifically there is minimal research on the use of AAT in an IRF that targets impact on functional mobility.

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One study conducted in an IRF utilized AAT to facilitate gait training [9]. In this study, there is report of multiple patients post-stroke who demonstrated significant increases in walking speed and improvements in gait kinematics while walking with a dog [9]. Another report from an IRF was a case study of improved speech output with use of AAT in an individual with post-stroke aphasia [10]. In a quasi-experimental study, 5–10 minute (min) AAT visitations were provided in both rehabilitation and acute care units to patients of varying diagnosis and presentation over the age of 18 years old [11]. The results indicated that these relatively short AAT visitations led to decreased pain, anxiety, and fatigue immediately following the intervention [11].

There are no specific recommendations regarding the use of AAT in combination with physical therapy (PT) interventions for functional recovery. However, people in an IRF may benefit from engaging in AAT, targeted to address individual rehabilitation goals. At our facility, we had the opportunity to observe and report the use of AAT with a 34-year-old female status-post L4-L5 and L5-S1 laminectomy and fusion. Thus, the purpose of this case report is to describe the AAT technique used during multiple PT sessions at an IRF and describe a patient's functional outcomes at admission and discharge.

2. Materials and methods

This intrinsic case report was reviewed by a local Institutional Review Board. The procedures included a retrospective chart review of one person at the IRF. This individual participated in AAT because of expressed interest in utilizing AAT when asked in her initial PT evaluation. Her story is being shared in order to provide greater understanding of the uniqueness of the use of AAT, in combination with PT, in an IRF. This was a success story in terms of the use of this treatment as a complementary therapy in clinical practice, and a common diagnosis that PTs treat, which is why it is being shared. Demographic and clinical information was appropriately protected and confidentiality was maintained. The assessments reported are the standard of care for this patient population.

The Functional Independence Measure (FIM) assesses the level of disability in relation to the patient's physical and cognitive burden of care. There are 18 items; each item is rated on a 7-point ordinal scale and the scores can range from 18 (dependent) to 126 (independent) [12]. The motor subscale scores range from 13 (dependent) to 91 (independent) and includes items such as ambulation, stair negotiation, transfers, and dressing [12]. FIM total scores and motor subscale scores were assessed at admission and discharge. The 6 Minute Walk Test (6MWT) measures the patient's activity level through functional endurance. In this assessment, the patient is encouraged to cover as much ground as possible, as measured in meters (m), while walking at a fast but safe speed [13]. 6MWT was assessed at admission, reassessment at day 5, and at discharge.

A patient interview takes place during the first therapy session at an IRF, which is the patient's evaluation period. This interview reveals important information, such as what the person's overall goals are for therapy, but it also provides information about if the person likes dogs or not. If the person likes dogs, a referral is made to the therapist leading the AAT program. This referral is only to determine if the patient is interested in participating in a formal AAT session with the facility dog. The initial PT evaluation is conducted without use of AAT.

A facility dog is one that has been professionally trained by a specific outside organization and then certified by the organization. The dog works full-time in a facility with its trained handler. In this case report, the handler is a licensed, full time clinical PT. Amount of time spent with the dog and types of activities facilitated by the dog varies depending on treatment goals and the availability of the facility dog.

2.1. Case presentation

J.S. is a 34-year-old female with a history of back pain and sciatica.

She presented to the acute care facility with increased pain in the lumbar spine and left lower extremity. An MRI revealed L4-L5 and L5-S1 herniated discs for which she underwent L4-S1 laminectomy and fusion. She had a past medical history significant for low back pain and fibromyalgia. She was treated for anxiety and depression. Per the acute care hospital notes, she had limited upright and activity tolerance.

On admission to the IRF, J.S. had an initial total FIM score of 61 with a motor subscale score of 31. Her 6MWT was initially 22.8 m, and it appeared her performance was limited by pain. She was participating in therapies, however her upright tolerance and out of bed tolerance was limited by anxiety caused also by pain.

J.S.'s personal goals for PT included achieving modified independence with all functional mobility including ambulation with a rolling walker. She also wanted to be able to negotiate at least 12 stairs with one handrail, as this is the amount of stairs in her home. J.S.'s PT also created specific measurable goals, which were in alignment with J.S.'s personal goals. These included ambulating 300 feet with modified independence, negotiating 12 steps with one handrail and modified independence, completing all transfers with modified independence, and completing all hygiene tasks in standing with modified independence, including bathing, grooming, and dressing. Education of the patient and potential caregivers was also a goal to ensure safety upon discharge. These goals were to be achieved within 3 weeks of admission, at which point, the patient would be prepared to discharge home. Thus, the PT sessions were focused on goal-directed therapeutic interventions that included ambulation, balance, and endurance training tasks.

In compliance with IRF regulations, J.S. received 3 hours of therapy 5 days per week during her length of stay at the IRF. As aforementioned, during J.S.'s initial interview, it was noted that she was a dog owner and would be interested in meeting the facility dog. Knowing that AAT might be an option as an adjunctive or complimentary modality, J.S.'s PT treatment planning included ideas incorporating the use of AAT. Examples of therapy goals that focused on improving functional recovery (e.g. stair negotiation and kitchen mobility) with AAT are featured in Table 1.

J.S. received 25 therapy sessions lasting 90 min over the course of an 18-day length of stay. Of those 25 sessions, 8 incorporated the use of AAT. Five occurred in the first week of her stay, 2 occurred within the second week, and 1 occurred within the third week of her stay (Table 2). The first implementation of AAT was on the fourth day after admission and the second day of therapy services.

2.1.1. Week one of therapy

During the first week, J.S.'s first two sessions were her initial therapy evaluations, completed without AAT. On initial evaluation, the patient's 6MWT was 22.8 m, limited by anxiety and pain. Stair negotiation was deferred due to impaired activity tolerance. The first incorporation of AAT in treatment occurred on day 4 of admission. J.S. continued to be limited by anxiety and pain, however with the addition of AAT, she was able to meet her daily therapy goals, including ambulation and stairs. She ambulated 300 feet three times with a rolling walker (RW) and contact guard assistance (CGA). This was completed while walking the facility dog at the patient's self-selected pace (see Fig. 1). Negotiation of one stair was attempted during this session, first without use of AAT. The patient felt dizzy upon ascent and needed to be safely lowered to a chair with total assistance of a therapist. Only a few minutes later, J.S. attempted stair negotiation again, this time with the facility dog sitting at the top of the stairs within the patient's view (see Fig. 2). With just the view of the dog, the patient was able to negotiate 5 steps with CGA.

On day 5, J.S. had a 6MWT score of 136.9 m with a RW and CGA while walking the facility dog at the patient's self-selected pace. She was also able to complete 12 steps with supervision, with the dog placed within the patient's view. On day 6, with use of AAT, the patient was able to complete standing kitchen mobility for 10 min without

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