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Animals as Icebreakers: A Pilot Animal-Assisted Therapy Group for Veterans with Serious Mental Illness

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Abstract

The human-animal connection and healing effects of animals are evident throughout history from animals' role in work, companionship, and medical interventions. Research scientifically supports two forms of human-animal connections: routine pet ownership and animal-assisted therapy. The purpose of this program development project was threefold: (1) to explore the current literature on animal-based interventions for psychiatric illness, (2) to describe a recently developed Animal Therapy in the Community group at the VA San Diego Healthcare System, and (3) to offer recommendations on future directions for including animals in therapeutic interventions for

persons diagnosed with serious mental illness. The Animal Therapy in the Community group occurred in the Psychosocial Rehabilitation and Recovery Center, which is an intensive outpatient program for veterans diagnosed with serious mental illness with psychosis. A total of eight veterans participated in this program. Given the small sample size, an emphasis was placed on qualitative, observational and anecdotal data. Based on the veterans' reports to providers, there were improvements in three main areas: social interaction, keeping busy, and increased self-confidence. These authors offer ten lessons to inform future providers interested in implementing an animal-assisted group as part of their treatment milieu.

Keywords: animal-assisted therapy, community integration, serious mental illness, psychosocial rehabilitation, recovery model, schizophrenia, psychosis

Introduction:

Throughout history, the human-animal connection endures as a keen interest for work, companionship, and healing effects. The sense of animals improving human health evolved from early hunter and gathers belief in a supernatural power of animals and animal spirits; to more recently, animals as mediators of socialization, and sources of emotional and social support (Palley, O'Rourke, and Niemi, 2010).

The aim of this paper is threefold: (1) to explore the current literature on animal-based interventions for psychiatric illness and enhanced well-being, (2) to describe a recently developed Animal Therapy in the Community group at the VA San Diego Healthcare System, and (3) to offer recommendations on future directions for including animals in therapeutic interventions for persons diagnosed with serious mental illness. Within the Psychosocial Rehabilitation and Recovery Center (PRRC) at the Veterans Administration San Diego Healthcare System, a novel Animal Therapy in the Community group was initiated in which veterans attended several local animal organizations allowing direct animal interaction on a biweekly basis. The mission of the San Diego VA PRRC is "to help veterans with serious mental health conditions live full and productive lives by instilling the recovery practices of hope, emphasizing strengths, and teaching skills to achieve their living, learning, working, and socializing goals". These authors aimed to understand the potential psychosocial impact an Animal Therapy based group has for veterans diagnosed with Schizophrenia-spectrum disorders. This animal-assisted therapy (AAT) pilot group occurred in the PRRC in an explorative manner in keeping with the recovery model of care for serious mental illness.

Review of the Literature

Animals playing a role in human's daily life can be traced back 30,000 years with Native Americans and domesticated dogs. Animal assisted interventions date back to the 9th century, when family care providers used animals to assist handicapped persons in Gheel, Belgium. In the 1700s, the York Asylum used animals instead of restraints to offer comfort to mentally ill patients (Broodie & Biley, 1999). In the 19th Century, Florence Nightingale suggested that a bird may be the primary source of pleasure for persons with medical conditions

confined to one room (Nimer & Lundahal, 2007). In the 1960's, researchers began to more seriously investigate the health benefits associated with the human-animal bond. An early pioneer was Boris Levison, who was the first professionally trained clinician to implement and document the use of companion animals to enhance psychotherapy. In 1969, Levison wrote a book entitled Pet-Oriented Child Psychotherapy recounting his experiences and success using animals to help children struggling with mental health challenges (Broodie & Biley. 1999; Nimer & Lundahal, 2007).

Research continues to slowly emerge supporting the healing effects of animals for specific populations. Research of animal-assisted therapy (AAT) is highly varied in animal species used, patient populations treated, intervention approaches, and methodology (Nimer & Lundahal, 2007; Palley, O'Rourke, & Niemi, 2010). Two forms of animal-human interaction have been scientifically supported. First, routine pet ownership is associated with lower blood pressure, stronger immunity to illness, and increased exercise compared to non-pet owners in the general population. Second, AAT demonstrates favorable results for mental health and medical patients. AAT is a goal-oriented, planned, structured, and documented therapeutic intervention directed by health and human services providers as part of their profession. AAT has been applied for many clinical problems, such as medical conditions, physical problems, Autism-spectrum disorders, psychiatric disorders, emotional difficulties, and undesirable negative behaviors. Animals in AAT have been found to act as social facilitators, social modulators, and illuminate emotional reactivity (Calvo et al., 2016).

In 2007, Nimer and Lundahal conducted a meta-analysis on animal–assisted therapy (AAT) and mental and medical outcomes of patients. Their meta-analysis included 49 studies. AAT is generally used as a supplemental treatment and is not often considered a stand-alone treatment. Overall, their findings supported the preexisting belief that animals can help in the healing of medical and psychiatric disorders. Consistent moderately strong findings were observed that animals can aid in the healing process for medical well-being, can improve targeted behaviors, and can reduce symptoms of Autism. However, a flaw was revealed in that there are few rigorous scientific studies performed to examine the benefits of AAT. Calvo and colleagues (2016) explained a reason the scientific evidence is still very limited in AAT is due to the intrinsic challenges with performing research with AAT. For example, typical methodological limitations in AAT research are small sample sizes, difficulties with double blind methods, a lack of an adequate control group, selection biases as participants who like animals tend to participate, a lack of physiological evaluation, short program duration, and a limited number of professionals and animals who currently participate in AAT (Calvo et al., 2016).

Nimer and Lundahal (2007) examined the difference between use of animal species such as dogs, horses, or aquatic animals (dolphins). They found that dogs were used most often and were the most effective in improving emotional well-being. The animal species played a significant role, as dogs yielded the highest effect size, and consistently attained moderately high effect sizes. The targeted presenting problems (e.g., medical, mental health, or behavior) did not impact outcomes. When an Animal-assisted therapy group was initiated in a psychiatric inpatient unit, the group had the highest attendance of all groups (Nimer & Lundahal, 2007; Calvo et al., 2016). To date, there are several studies examining the impact of AAT with persons diagnosed with serious mental illness, such as Schizophrenia and Schizoaffective disorders. For a historical perspective, the Haverford study conducted by Beck, Seraydarian, and Hunter (1986) was one of the first controlled studies that occurred in a psychiatric inpatient unit with an initial hypothesis and preplanned measures of effectiveness. The researchers hypothesized that patients would feel less threatened and subsequently attend group therapy more frequently when birds were present in the room. Patients were randomly assigned to either a bird group or a non-bird group. Results revealed patients in the bird group attended sessions at a significantly higher rate than non-bird group members. Additionally, the number of times individuals in the bird group contributed to conversation was significantly higher than the non-bird group. Four of the eight bird group patients were successfully discharged prior to the end of the study, whereas none of the non-bird participants were discharged (Beck, et al., 1986).

A pilot study was conducted at the Social Institute for Psychiatric Patients in Budapest, Hungary (Kovacs, Kis, Rozsa, & Rozsa, 2004) in which researchers examined changes in independent living skills for patients with Schizophrenia. Seven patients residing at the institute (duration of living at the institute ranged from 4 to 22 years)

participated in a 9 month AAT group. The group was facilitated by a psychiatrist, a social worker, a dog and his owner. The group occurred weekly in the garden, or in bad weather in the occupational room. Results revealed significant improvement in Domestic Activities and Health on the Independent Living Skills Survey (ILSS) from pre- to post- group. Qualitatively, the patients formed a bond with the dog, had regular attendance, and were less likely to drop-out of the group.

Another pilot study was conducted by Nathans-Barel, Feldman, Berger, Modai, and Silver (2005) examining changes in anhedonia for patients diagnosed with Schizophrenia with a group format resembling Kovacs et al. (2004). Their study included 20 participants. Ten were assigned to an active AAT group and 10 were assigned to control group treated without AAT. The AAT group included the presence of a Golden Retriever who was friendly and well-trained. The group was based on specific goals developed by the Delta Society (a world class dog therapy training program based in Australia), which included improving mood, reducing isolation, improving communication through playing with the animal, developing mutual acceptance and affection, learning to groom the animal, and teaching the animal new things. The control group included similar procedures and activities without the dog, such as discussions about animals, animal care, and walks on hospital grounds. There were weekly 1-hour sessions. Patients in the AAT group had significantly reduced anhedonia, improved leisure factor on the Quality of Life Enjoyment and Satisfaction Questionnaire (QLESQ), and improved motivation factor on the Subjective Quality of Life Scale (SQLS) compared to the control group; no differences were found on the other factors of the QLESQ and SQLS. Qualitatively, the patients reported feeling attached to the dog.

A randomized control study with blind assessment was conducted to assess the effectiveness of including a trained therapy dog in an intervention programs for institutionalized patients diagnosed with chronic Schizophrenia (Villalta-Gil et al., 2009). The sample included 24 patients randomly assigned to a treatment group with a trained therapy dog or an intervention group without the dog. The study revealed no significant differences between the group with the trained therapy dog to the group without the dog. There were other positive outcomes from introducing a dog into the therapy group; and both treatment groups yielded significant improvement from pre- and post-measures (Villalta-Gil et al., 2009).

A recent pilot study was conducted by Gehrke, Meyers, Evans, and Garman (2016) investigating Heart Rate Variability at one of the community organizations our group attended at Rolling Horse Ranch in Ramona, California. This study investigated Heart Rate Variability and use of self-report measures to assess for changes during equine-assisted coaching sessions, which included a horse, a coach, and the client. Measuring the Heart Rate Variability introduces a novel approach in measuring physiological changes beyond the clients' self-report from participation in animal-assisted interventions. Research has found that balance in the autonomic nervous system can be determined by measuring Heart Rate Variability; balance leads to more clarity of thinking, improved attention, increased confidence, improved decision-making, and lower anxiety and stress (Gehrke et. al, 2016). This study found improved Heart Rate Variability from the brief one-on-one equine coaching sessions.

A recent small randomized control trial was conducted by Calvo and colleagues (2016) to assess the usefulness of AAT as an adjunctive treatment to conventional psychosocial rehabilitation for persons diagnosed with schizophrenia residing at an inpatient facility. The study involved AAT as an adjunct to a six-month conventional psychosocial rehabilitation program for persons with schizophrenia. There was a total of 24 participants; eight in the control group and eight in the two AAT groups. The researchers administered the following pre-and-post measures Schizophrenia Symptomatology (PANSS) and Quality of Life (EQ-5D); they also recorded and analyzed adherence to treatment and salivary cortisol and alpha-amylase for each session. The groups consisted of one hour sessions twice weekly. AAT sessions aimed to develop emotional bonds between patients and dogs by guided instruction on allowing each patient to play and train the dogs. The control group offered choices between art therapy, group sports, psycho-stimulation, and gymnastics. Findings revealed both the AAT and control group had significant reduction for positive and general PANSS scores, however only the AAT group a significant reduction on the negative symptom subscale. There were no statistically significant differences found in QOL for the AAT or control groups from pre-to-post measures. The AAT groups had a much higher attendance rate. Lastly, the salivary cortisol and alpha-amylase found a significant decrease in cortisol after participation in an AAT session. Calvo and

colleagues' study notably contributes to the research base for AAT as it included a randomized design measuring both self-report symptoms and physiological changes. The study supports that AAT is a worthwhile adjunct to conventional treatment for persons diagnosed with schizophrenia. Additionally, the study recommends further investigation of the effects of AAT on negative symptoms of schizophrenia.

Quality of Life

According to World Health Organization's Quality of Life (WHOQOL) working group, "quality of life…is an individual's perception of their position in life, in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns…[it includes] in a complex way individuals physical health, psychological state, level of independence, social relationships, personal beliefs, and their relationships to salient features of the environment" (The WHOQOL Group, 1995).

There is a scarcity of literature available on how animal-assisted therapy (AAT) affects quality of life with people diagnosed with severe mental illnesses. Some single studies exist revealing that AAT can decrease agitated behaviors, increase social interaction, and improve quality of life in relation to dementia (Sellers, 2006). Studies show that when AAT is used, human–animal bond reduces symptoms and increases social engagement and communication in dementia care, which is believed to increase the individual's overall quality of life. Engagement and participation in positive and meaningful activities are assumed to correlate with overall QOL (Nordgren & Engstrom, 2014).

Although there is limited research available on AAT as it relates to QOL, there is evidence that suggests community integration is positively related to QOL for persons with serious mental illness (Townley, Kloos, and Wright, 2009). Prince and Gerber (2005) reveal that both physical presence in the community and perceptions of sense of community and belonging can enhance life satisfaction.

Community Integration

A growing need in psychosocial rehabilitation programs for people with serious mental illness (SMI) is increased community integration. The Animal Therapy in the Community group in this project sought out animal-based organizations in the county of San Diego to fulfill both animal exposure and community integration. The definition of community integration has been theorized as physical presence in the community (Aubry & Myner, 1996). Community integration includes the patients' ability to perform daily living activities (physical integration), engagement in typical social interactions with both disabled and non-disabled groups or individuals (social integration), and having a sense of community belonging (psychological integration) (Townley et al., 2009). Historically, individuals with SMI have received high levels of intervention, usually in specialized settings aimed to treat psychiatric problems. More recently, a shift has been made to focus on recovery to help individuals move beyond the patient role towards active engagement in their communities through employment, connection with family and friends, and participation in community organizations. Traditionally, a common issue for persons diagnosed with SMI is isolation with few meaningful relationships and limited activities to fill their days (Mccormick, Funderburk, Lee, and Hale-Fought, 2005). Over 85% of persons with SMI are unemployed, and studies have revealed a lack of participation among many members of this population in educational and leisure activities which leads to feelings of hopelessness (Bond, Salyers, Rollins, Rapp, & Zipple, 2004; Dewees, Pulice, & McCormick, 1996). Prince and Gerber (2005) found that both physical presence in the community and perceptions of sense of community and belonging can enhance life satisfaction for people with serious mental illness.

Program Description and Methodology

The Animal Therapy in the Community group was developed as the primary author's postdoctoral research dissemination project at the VA San Diego's Psychosocial Rehabilitation and Recovery Center (PRRC). The first and third authors were the designated group facilitators and the second author was assigned as the clinical supervisor. The group was developed in an explorative manner, in which the specific community partners were

created concurrently while the group was running. Creating community partnerships was the most crucial and time-consuming step in developing the animal therapy in the community group. Each group meeting involved visiting one community animal-based organization. There was a winter and spring group cycle each consisted of six animal community outings. Four veterans participated in the winter cycle and six in the spring cycle; two veterans participated in both cycles.

The veterans met the two facilitators at the VA Medical Center for transportation to the community locations. Table 1 Animal Therapy in the Community lists the group's winter and spring scheduled outing locations with each organization's animal species present, mileage, minutes from the hospital, and associated fees. The main goals for the community partnerships included (1) animal interaction (if animal interaction is not feasible for safety then close-up animal observation), and (2) education about the animal(s). The facilitators employed these tenets with the additional goal for veterans to experience novel situations. For example, when visiting the California Wolf Center, most group members shared it was their first time observing a wolf close-up. The facilitators gathered veterans' feedback on each community partner visited to determine if the organization should be retained on the group schedule for future group meetings. Getting real-time feedback from group participants enhanced interaction skills. A primary aim of this pilot program development project was to implement an Animal-Assisted Therapy group based in the Community to assess if there were benefits to veterans and if the program was feasible for staff.

Table 1. ***Animal Therapy in the Community***

	Organization	**Location**	**Animal Interaction**	**Fees for Visit**	**Miles/Minutes From Hospital**
1	The Pegasus Rising Project	Escondido, CA	Horses	Free	36 miles/ 49 minutes
2	Helen Woodward Animal Center	Rancho Santa Fe, CA	Rabbits, reptiles, rodents, birds, horses, dogs	Free	13 miles/ 20 minutes
3	San Diego Humane Society	San Diego, CA	Dogs and cats	Free	10 miles/ 12 minutes
4	Birch Aquarium	La Jolla, CA	Fish and marine mammals	$10/group (discounted)	2 miles/ 5 minutes
5	Rolling Horse Ranch	Ramona, CA	Horses	Free	31 miles/ 56 minutes
6	PAWS of Coronado	Coronado, CA	Dogs	Free	18 miles / 20 minutes
7	So Cal Parrot	Jamul, CA	Parrots	Free	33 miles/ 44 minutes
8	California Wolf Center	Julian, CA	Wolf education & observation	Free	62 miles/ 175 minutes
9	Chula Vista Nature Center	Chula Vista, CA	Turtle, shark & ray, shore birds, eagle observation	$7/per person (discounted)	21 miles/ 24 minutes

Methodology

The authors were interested in the phenomenon of how direct exposure to animals in a novel situation impacted persons diagnosed with a Schizophrenia-spectrum disorder. Data was collected through self-report measures, interview questions, and observation. The authors were particularly interested in the role of quality of life and self-efficacy in the participants' experiences. The exploratory project was a mixed methodology as closed-ended self-report measures were used and analyzed; yet the aim was to ascertain trends given the small sample size (n = 8).

Measures

Self-report measures were administered to gather information about trends in relation to quality of life and self-efficacy. At the first cycle, all veterans completed the Quality of Life Enjoyment and Satisfaction Questionnaire-Short Form (Q-LES-Q-SF, Endicott, Nee, Harrison, Blumenthal, 1993) before and after the cycle. At the second cycle, the General Self-Efficacy Scale (GSE, Schwarzer, & Jerusalem, 1995) was added; and the Q-LES-Q-SF and GSE were administered pre-mid-and-post-cycle. Throughout both group cycles, veterans were asked how the group meetings helped them reach their recovery goals.

Quality of life.

Given the breadth in quality of life, which includes physical health, psychological health, level of independence, social relationships, and personal beliefs, a quality of life measure was used to determine if there was an impact in QOL during the participants' experiences. The Q-LES-Q-SF is a 16-item self-report measure with good validity and reliability. The internal consistency has a reliability of 0.90. It has test-retest reliability of 0.93 on items one through 14; a test-retest reliability of 0.75 on item 15 and 0.80 on item 16 (Stevanovic, 2011). Of note, research has demonstrated that finding changes in self-report quality of life appears to be particularly challenging in pre- and post- interventions (Vauth, Kleim, Wirtz, & Corrigan, 2007). Additionally, research has demonstrated patients with Schizophrenia who are undergoing treatment can experience a progressive decline in QOL in response to increased insight into their symptoms. Future research should focus on specific domains of QOL where AAT appears to have a direct effect, such as depression and anxiety (Calvo et al., 2016).

Self-Efficacy.

Self-efficacy has been described as global confidence in one's ability across a range of demanding or novel situations. Persons with high self-efficacy choose to engage in more difficult tasks. Self-efficacy has also been found to be indirectly related to self-stigma in persons diagnosed with Schizophrenia (Vauth, Kleim, Wirtz, & Corrigan, 2007).

The General Self-Efficacy Scale (GSE) is a 10-item questionnaire that measures perceived self-efficacy. In samples from 23 nations, the GSE's Cronbach's alphas ranged from .76 to .90, with the majority in the high .80s (Schwarzer & Jerusalem, 2016). Research has demonstrated favorable outcomes for improved self-efficacy in Animal-Assisted Therapy (Bente, Ekeberg, & Brasstad, 2008).

Recovery Goals

All veterans enrolled in the PRRC develop an individualized Recovery Plan collaboratively with their primary mental health provider. The recovery plans focus on the veteran achieving goals in the domains of their living situation, learning environments, working, and/or socializing.

Results

A dependent t-test was conducted to examine differences between pre- and post- QOL scores for the winter group (cycle 1). Two separate one-way ANOVAs were conducted to examine differences between pre-, mid- and post-

QOL and GSE scores for the spring group (cycle 2). There was no statistical significance found in QOL or GSE in the winter or spring group. Given the small sample size (n = 8), the facilitators emphasized qualitatively reviewing the data for individual and group trends.

The trend observed for the winter cycle revealed most of the participants (three of four) QOL scores increased (an average of 5.33%), and the fourth participant's scored stayed the same. A trend was found of increased QOL and Self-Efficacy specifically at the mid-treatment point in the spring cycle. In the spring group, three of the six veterans had an increased QOL score, one veteran's score remained the same, two veteran's scores declined. In the GSE measure, four of the six veterans had increased scores from pre- to post- group measures, and two veterans had a slight decrease. Interestingly, mid-group measures were the highest for three veterans with only one veteran having a one point lower score than pre-group.

The group facilitators routinely inquired after each outing how the experience related to and helped veterans work toward their recovery goals. The facilitators coded responses for common themes. Table 2 highlights the main themes of the veterans' responses.

Table 2. ***Common Themes: Animal Therapy Outings Relate to Veterans' Recovery Goals***

Helped me socialization with other people
Enjoyed interacting with the animals
Learned new information
Learned about reading emotions
Gave me a good distraction
Helped me participate in healthy behaviors
Helped me stay out of trouble
Got me out of the house
Helped me keep busy
Experienced new parts of the communities
Helped me overcome fear of animals
Participated in something new
Helped me relax
Helped me focus on the present and increased mindfulness

Discussion

There was no statistical significance found in the analyses for the QOL and GSE measures. There was a very small sample size of four veterans for the winter measures and six veterans for the spring measures; two veterans participated in both the winter and spring cycles. A few other noteworthy factors include the infrequency in which measures were administered: pre-and-post in the winter cycle and pre-mid-post winter cycle. A recommendation is the measures should be administered at the beginning and end of each group meeting to derive a real-time assessment from the given activity. Moreover, an increase in data points could be helpful in better deriving a trend as the spring cycle mid-treatment measures yielded the highest group averages of all administration points. Lastly, given the limited research yielding statistically significant finding in quality of life measurements for animal-therapy interventions (Vauth, Kleim, Wirtz, & Corrigan, 2007), these authors suggest using a specific recovery measure or targeting specific domains of QOL versus a general QOL measure. In our analyses, there was a trend of

improvement in self-efficacy; whereas QOL demonstrated an increased trend in the winter cycle and remained fairly consistent in the spring cycle for most veterans.
Based on findings from inquiries regarding recovery goals, the most common reply was that outings helped veterans engage in social activities. This finding is consistent with the established hypothesis that the presence of an animal can act as a social facilitator and reduce anxiety, which facilitates communication among people (Calvo et al, 2016; Beck, et al.,1986).

Impact on Clinicians

Given burnout is a concern throughout the mental health field (Wicks, 2008; Wicks & Maynard, 2014), it is extremely vital to not only practice self-care outside of work, but also during work. According to Mayo Clinic (2010), some causes of burnout include: 1) a lack of control in the workplace, or the inability to make decisions that directly affects one's job, 2) feeling as if one's job does not fit individual interests and/or skills, 3) a lack of social support or social isolation within the workplace, and 4) unclear job expectations. On many levels, the Animal Therapy in the Community group addressed some of these causes of burnout for the clinicians involved. The Animal Therapy in the Community project afforded clinicians the ability to develop and implement a pilot group giving the clinicians a sense of responsibility and control in their work. With the increased autonomy, there were certain logistical dilemmas that arose during the course of the group that necessitated the facilitators work together to problem solve unique challenges. Contacting various locations throughout San Diego, advocating for free or discounted tours of the locations, and organizing transportation were all aspects of the program development that revealed to be more time consuming for the clinicians than expected.

Being able to work with veterans outside of a clinical setting allowed clinicians to have a break from their typical office work and enjoy work time in more casual locations learnings about different animals and their natural habitats. Since both clinicians involved have a love for animals, and one clinician in particular having her bachelor's degree in Animal Science, being able to spend time with animals during the work day allowed clinicians to create a group that fit personal interests and skills.

Rapport building between the clinicians was a positive outcome that stemmed from co-facilitation. The rapport between the two facilitators grew stronger as they spent more time together in the community. Colleagues of the group facilitators have also noted that facilitators brought an optimistic attitude back to their clinical team upon return to the workplace from an animal therapy outing. With the clinicians being able to spend time together in the community with animals, and with colleagues noticing a change in demeanor within the clinicians, there was a sense of social support.

The autonomy the clinicians were afforded allowed them to develop their own expectations and experiences within the group dynamics. For example, not only did the Animal Therapy in the Community group build the rapport between clinicians, it also benefitted the rapport building between the veterans and clinicians, and veterans with one another. Having the presence of animals themselves was an effective ice breaker to initiate conversation. Clinicians found that conversations about how the veterans were feelings could be addressed more easily and with less discomfort in the animals' presence. The animal interaction catalyzed conversation skills between veterans, between veterans and facilitators, and between veterans with employees at the animal facilities. Observationally, this enhanced veterans' casual conversational skills.

Limitations

There were two key limitations of this study. First, the development and implementation of the group occurred concurrently given the time-constraint for the primary author to complete this pilot project in the one-year fellowship program at the San Diego VA Medical Center while sustaining clinical duties. A developmental phase of this project would have allowed for more in-depth literature review of measures to use and would have allowed for the implementation of a semi-structured interview. The second limitation was the small sample size of four veterans in the winter group and six veterans in the spring group (two participated in both cycles). Nonetheless, due to safety of patient-to-staff ratio having a large sample size in an AAT group is intrinsically difficult (Calvo, et

al., 2016). A common limitation of many AAT is a limited rigorous study design. Future AAT research may help to establish a stronger research base for the use of animals in therapeutic settings by developing a more rigorous study design prior to the implementation of the intervention(s).

Future Directions

Animal-assisted therapy in the community had a significant social and psychological impact on the veterans with serious mental illness who actively participated in the activity. After each animal-assisted activity, veterans were asked to share how the outing affected their recovery from mental illness, in keeping with the recovery model of care. Veteran shared improvements in three main areas. The first area of improvement reported was social interaction. Veterans reported enjoyment and feeling at ease in social interactions with other participants, with the providers, and with the diverse experience with the animals. Animal interactions can mediate symptoms of anhedonia, social isolation and anxiety in interpersonal relationships.

The second area of improvement reported by the veterans was keeping busy. Veterans reported a decrease in troubling behaviors (for example, "I don't feel like gambling") when attending the animal therapy experiences. The impact of staying busy and active as one recovers from a serious mental health condition increases engagement in meaningful activities. The third area of improvement reported by the veterans was increased self-confidence. Veterans reported feeling better about themselves when interacting with the animals, they experienced a sense of mastery and control over themselves and their environment. There was a noticeable increase in positive behaviors such as smiling, feeling calmer and mindful of the experience, feeling accomplished, and experiencing less anxiety. Many of the veterans reported wanting to visit with animals on their own after the series of outings was over. Several veterans were interested in volunteering with animals based on their successful interactions. Improving social interactions, keeping busy, and building self-confidence were the top three benefits reported by the veteran participants, and these benefits can have a far-reaching influence on the course of mental health treatment and recovery from serious mental illness.

Recommendations

There were several lessons learned following the development and implementation of the animal-assisted therapy in the community for veterans with serious mental illness. Here are the top ten lessons:

1. It would be advisable to assess and modify measures based on the available research. For instance, it is recommended to document in-vivo social interactions, measure self-efficacy, and review other measures that tap into the experiences of individuals with severe mental illness. Using a structured interview with ten targeted questions would allow for qualitative collection and coding of responses, which might uncover themes not accessible in paper-and-pencil assessments.

2. It is recommended that sufficient time be set aside for preparation and planning of this type of community group. This would include calling animal-assisted agencies, visiting agencies prior to taking the group members if time permits, securing safe and secure transportation, notifying other providers well in advance of the group, recruiting and retaining group members, and developing a targeted structured interview.

3. In addition to calling animal-assisted agencies and requesting visiting privileges, it is recommended that the group leaders cultivate a relationship with these organizations to secure future visits and determine if there are volunteer or job opportunities available for the veterans who are interested in continued interactions with animals.

4. It is recommended that providers be comfortable in social situations out in the community. This type of activity would benefit providers-in-training looking to improve their comfort level in community integration. The inclusion of casual social conversation (for instance "what did you have for breakfast?" or

"what do you think about the weather today?") between provider and veteran models this social skill which could be built upon in subsequent community visits.

5. Having an interest in animals, animal therapy and a predisposition to liking animals and liking community experiences is important for the providers of this type of group. Providers who bring their own curiosity about animals to the experience of animal-assisted therapy would be a good match for this type of therapy experience and would model this type of curiosity to the participants

6. Experience in driving persons diagnosed with serious mental illness would be helpful, along with knowledge of how to handle emergent situations while in the community. Practicing a role play of an emergent event prior to the start of the community outing would be useful for the providers. The providers would also benefit in having all emergency contact numbers and equipment in the vehicles at the onset of the outings.

7. With respect to safety, it is recommended that providers practice driving. For example, during the same time of day, managing traffic, driving a larger unfamiliar vehicle, utilizing navigation equipment to decrease likelihood of getting lost in the community would better prepare providers for the upcoming events.

8. Having two providers attend each event is preferable due to management of the participants, event coordination, note writing, and shared driving on long trips. It is recommended that participants minimize communicating with the driver during long trips and focus on interactions with the non-driving co-facilitator.

9. The question of a group with diagnostic cohesiveness is worth discussing between the group leaders and clinical supervisor. Determining if the group would include participants with and without serious mental illness would be useful. In addition, prior to the beginning of the group experience, group leaders would be well served to discuss how to manage personality conflicts within the group or other interpersonal group challenges or mental health or medical emergencies. Having a structured clinical team to consult with if a mental health or medical emergency occurs would be asset to the provider leaders.

10. The authors also recommend developing a manual as part of the process of implementation of animal-assisted therapy in a group format. Having a structure is extremely beneficial not only for the providers of the current group, but for future provider-in-training who would like to continue animal-assisted therapy in the community. Part of the manual may include providers de-briefing with a clinical supervisor after each event and using the de-briefing experience to inform the next community outing and target recovery goals of the veterans.

Overall, implementing animal-assisted therapy for veterans with serious mental illness is an exceptionally worthwhile experience. AAT is a true ice-breaker which helps participants improve social interactions, improve their ability to stay active, and increase their self-confidence. AAT can positively impact targeted mental health recovery goals in veterans who actively participate. Providers would be well-served to review the ten lessons learned from this pilot project prior to implementing an animal-assisted group or to enhance AAT groups already in progress.

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