



## Animal-Assisted Stress/Anxiety Groups: Positive Coping for Men in Prison

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### Abstract

Incarceration is a very stressful experience, as one is separated from loved ones while facing multiple environmental stressors. Unmanaged stress can lead to physical and mental health consequences. 24 incarcerated men completed a 10-week treatment group with therapy dogs. This intervention intended to improve participant mental health, enhance coping strategies, and increase feelings of acceptance and reciprocity. These groups provided education on stress and coping strategies while integrating therapy dogs in the topics both as an educational example and a physical source of comfort. Assessment measures were used to evaluate anxiety, coping, and feelings about therapy dogs. Anxiety measurements significantly reduced from the beginning to the end of group, and an increase in active coping behaviors was also noted. Measurements about the therapy dog clearly indicated that these animals helped the participants feel more comfortable, happy and distracted from their stress and anxiety. Developing such treatment interventions has the potential to offer successful management of stress and anxiety for those who are incarcerated. Therapy dogs created an environment atypical of prisons, one where individuals felt supported and wanted to attend groups. This alone is extremely valuable to increase attendance and engagement in offered treatment.

**Key words:** Therapy Dogs, Incarceration, Group Therapy, Animal-Assisted Therapy, Mental Health

### Introduction

Stress among prison inmates is a major issue that negatively affects many aspects of their lives, both in prison and outside of prison upon release. In 2015, the Pennsylvania prison population was almost 50,000 [1]. Rehabilitating these offenders is a critical role of social work practitioners today. Many people who are incarcerated suffer from stress and anxiety disorders that lead to other problems. According to a 2006 study by the National Alliance on Mental Illness [2] and the U.S. Department of Justice, 56% of inmates in state prisons experience severe stress or symptoms of serious mental illnesses. High levels of anxiety and stress are a significant issue faced by prisoners [3-5]. Learning to successfully manage these mental health challenges is critical to successful adaptation and community re-entry. In fact, mood disorders can increase recidivism and violence [5].

There are a variety of factors that produce stress in individuals who are incarcerated, such as family issues or being confined in prison. When chronic stress is not managed, short and long-term emotional, cognitive, physiological, and psychological effects often arise [6].

Short-term effects of prolonged stress may include the inability to concentrate or focus, memory loss, muscle tension, headaches, increased heart rate, increase or decrease in appetite, vomiting, nausea, and digestive issues [6, 7]. These short-term impacts of stress are able to be relieved and reduced with the use of proper coping mechanisms, but if stress continues, these minor reactions can become more significant long-term problems. Difficulties concentrating, focusing, and remembering could eventually lead to a permanent reduction in cognitive functioning and an increase in the rate of cognitive aging [6]. Muscle tension, headaches, or other issues within the musculoskeletal system could turn into chronic muscle tension, migraines, or musculoskeletal disorders [7]. Short-term effects of stress such as increased heart rate and blood pressure often lead to long-term heart and cardiovascular problems, such as high blood pressure, high cholesterol, inflammation in arteries, heart attacks, and even heart disease [7]. The gastrointestinal system is also negatively affected by chronic stress. Vomiting, nausea, and digestive issues that may occur short-term as a result of stress can provoke more serious and long-term problems such as severe heart burn, and stomach ulcers [7].

Chronic stress also has serious impacts on one's mental health. As stress is continued and becomes increasingly worse, it can create greater mental health issues, and eventually lead into depression or anxiety disorders [6]. Not only does stress affect people psychologically, cognitively, physiologically, and emotionally, but for people released from prison, it also affects rates of recidivism [8]. People who suffer from severe/chronic stress or serious mental disorders are far more likely to reoffend and be re-incarcerated than those who experience lower levels of stress and mental health problems [8]. It is extremely important that individuals learn how to properly cope with their stress to avoid all of these possible negative effects and the risk of being incarcerated again.

While there is a large amount of research on stress experienced by prison inmates and the consequences of it, there is a lack of research on how this stress translates into anxiety disorders in people who are incarcerated and the effects that it has on them. However, one in-depth study done by Gharavi, et al. [9] describes how if this intense stress continues and goes unmanaged, it may eventually lead to anxiety disorders or exacerbate previously diagnosed anxiety disorders. It also uses the Beck Anxiety Inventory to display how mental health treatment is beneficial in decreasing inmates' levels of anxiety. Gharavi et al. [9] states that more than one-third of inmates has a mental health disorder or shows symptoms of a mental health disorder, with anxiety and depression being the most prevalent.

In their study, Gharavi et al. [9] did a comparison of two groups of inmates with anxiety in which one group received treatment and the other did not. Using the Beck Anxiety Inventory, they evaluated how the anxiety levels of each group changed based on the treatment they received [9]. The results showed that the group that received treatment had decreased anxiety levels, while the group that did not receive treatment had anxiety levels that actually increased [9]. Not only do these results prove the prevalence of anxiety in prison inmates, but they also display the importance of providing treatment so that it does not become exacerbated or lead to other negative outcomes.

Coping with stress is not an exact science, especially when it comes to dealing with stress in high pressure settings, such as prison. This is not a common field of study, but there are some studies that take a look at this specific setting and the concept of stress and how to cope with it. Inmates face multiple stressors, both from outside and inside prison; upon arrival into a facility, they are often met with violent, aggressive, crowded or even overpopulated communities [10]. Prisoners have a greater risk of suffering from mental health issues such as depression and anxiety than the rest of the general non-incarcerated population, which poses a bigger threat to themselves, staff, and other inmates [11]. Thus, treatment to assist with these issues is a critical goal for forensic practitioners.

The Pennsylvania Department of Correction's mission is to "decrease criminal behavior by providing individualized treatment and education to offenders, resulting in successful community reintegration through accountability and positive change" [12]. Working to develop innovative, quality interventions will not only support this goal, but also enhance the well-being of those who are incarcerated.

One innovative treatment strategy includes the integration of registered therapy dogs. One study with 48 male inmates investigated the impact of animal interactions on the frequency of infractions, treatment level in therapeutic communities, and social skills, and found statistically significant improvements in all areas for those in the group with the therapy dog [13]. An animal-assisted psychoeducational and therapeutic intervention was also implemented with female inmates and there was a large decrease reported in anxiety and depression and an increase in optimism and self-awareness [14]. In a similar study, utilizing animal-assisted interventions worked as a form of stress management, decreasing tension and improving mood in the inmates [15].

Although previous research demonstrates the potential benefits of animal-assisted interventions with prisoners, there is a lack of research on animal-assisted treatment in this setting. A national survey found that the majority of prison-based animal programs included community based programs to make dogs more adoptable in community shelters or service dog training programs [16]. Dog-related research done in prisons is mainly focused on dog training programs, which typically involves the inmates training puppies to become service dogs, or training shelter dogs basic obedience skills in order to make them more adoptable. The Pennsylvania Department of Corrections currently has some type of dog training program in every state correctional institute [17]. Facilities such as SCI Albion and SCI Greene have a puppy training program in conjunction with Canine Partners for Life, which is an organization that provides service dogs to individuals with disabilities [17]. Other prisons such as SCI Mercer work with the Strayhaven Animal Shelter to provide inmates with dogs from their shelter that they will train and socialize before returning to the shelter, in an attempt to help them get adopted [17].

There is a wide range of benefits from these types of programs, such as improving overall physical and mental health, increasing self-esteem, promoting goal-directed behaviors, increasing empathy, decreasing violence and aggression, and increasing self-control [18]. Correctional facilities in many other states currently have these types of programs, as well. A study done by Minton et al. [18] in a women's

prison in California, in which inmates trained puppies that would become service dogs clearly demonstrates the benefits of these dog training programs. The participants reported that during this program, their stress levels were overall lower and they felt that their interactions with other inmates and prison staff were improved [18]. Another service dog training program in a women's prison in Washington state reported similar results, with statements from participants describing the benefits that the program provided them with [19]. The participants explained that the main benefits they experienced were learning responsibility, increased self-esteem, decreased tension and stress, increased touch with reality, and increased empathy [19].

It is clear that dog training programs in prisons all over the country provide a large number of benefits for inmates, including improved overall mental health. However, these programs do not focus on using dogs to assist in treatment interventions for specific mental health problems, which is desperately needed by many inmates. The benefits of human-animal interaction seen in these dog training programs would bring these same benefits, plus more, to mental health treatment in prisons that there appears to be a lack of. This intervention was conducted to provide support to the possible benefits of therapy dogs in treatment groups and to demonstrate potential benefits to those who are incarcerated.

### Program Description/Design

Participants were recruited by the State Prison Psychiatric Review Team and Psychology staff. Flyers were hung within the institution and also advertised on the institution television channel. Participation was entirely voluntary, and interested inmates simply contacted psychology to enroll in the intervention. Eligible participants were active on the mental health roster with a diagnosis of an anxiety related disorder. Exclusionary criteria included any inmate with a recent (within the past six months) incident of violence, history of cruelty to animals, severe allergies to dogs, or fear of dogs.

A total of twenty-nine men enrolled in the three group sessions that were consecutively offered. Group one started with 10 and ended with 7 participants, group two started with 10 and ended with 10 participants, and group three started with 9 and ended with 7 participants. Of those participants who did not complete the groups, two were transferred to another facility and the other three dropped out or were removed. A total of 24 participants completed the group intervention.

### Method

This intervention included the implementation and evaluation of three 10-week Animal-Assisted Stress/Anxiety groups. The group interventions consisted of psycho-educational information on stress and coping, including both cognitive and behavioral strategies for managing stress. The curriculum was designed by a licensed clinical social worker and facilitated by a licensed clinical social worker, a licensed psychologist, and two student research assistants. Each session integrated trained, registered therapy dogs. For example, session two started out by discussing sources of stress to the dogs. Participants discussed potential causes of stress for the dogs and then transitioned to personal sources of stress. Below is an outline of the educational content discussed:

- Session 1: Introduction, Consents, Pre-test measures.
- Session 2: What is Stress (Sources of stress)
- Session 3: Indicators of Stress (Identifying signs of stress)
- Session 4: Stress Producing Language
- Session 5: Stress Producing Actions
- Session 6: Effects of Stress
- Session 7: Coping Strategies
- Session 8: Relaxation Techniques
- Session 9: Social Supports
- Session 10: Wrap Up, Post-test measures.

Participants were expected to attend the educational groups, identify and utilize coping strategies, and engage and interact with the therapy dogs. This intervention had the following goals: Goal 1: Improve participant mental health, Goal 2: Enhance participant coping strategies, and Goal 3: Enhance feelings of acceptance, reciprocity and attachment to therapy dogs.

There were some minor challenges during the implementation of this intervention. One issue was the prison locked down on one occasion resulting in the group being postponed for a week. Another challenge experienced was that during one session participants were sent back to their units as the officer thought group was not occurring. This resulted in the prison staff having to call the units and request they send the individuals back to the group. One would think that this inconvenience might cause some individuals to fail to return, but all participants did return. In fact, one shared that he saw another participant run by him and he inquired “where’s the fire?” That participant replied “I want to see the dogs”.

## Results

Three assessment measures were utilized in this study. The Beck Anxiety Inventory® (BAI) was used to evaluate the anxiety levels of the participants before and after the group [20]. Moos [21] Coping Responses Inventory (CRI) was the second assessment used for pre- and post-test measures. The CRI enabled researchers to evaluate sources of stress and the coping strategies of the participants [21]. Finally, the pet bonding scale was administered at the final group session to determine the participant's experience with and feelings about the therapy dogs [22].

The BAI was administered on the first group session prior to any participant meeting the therapy dogs. The BAI was again administered on the final (10th) group session and therapy dogs were present. A paired-samples t test was calculated to compare the mean pretest scores to the mean posttest scores (see Table 1). The mean on the pretest was 19.5 (sd=9.67), and the mean on the posttest was 11.67 (sd=7.28). A significant decrease in anxiety from pretest to posttest was found ( $t(23)=4.96, p<.001$ ).

Paired Samples Test									
		Paired Differences							
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	S i g . (2-tailed)
					Lower	Upper			
Pair 1	Pretest-Posttest	7.83333	7.73848	1.57961	4.56566	11.10101	4.959	23	.000

Table 1: BAI paired-samples t test output

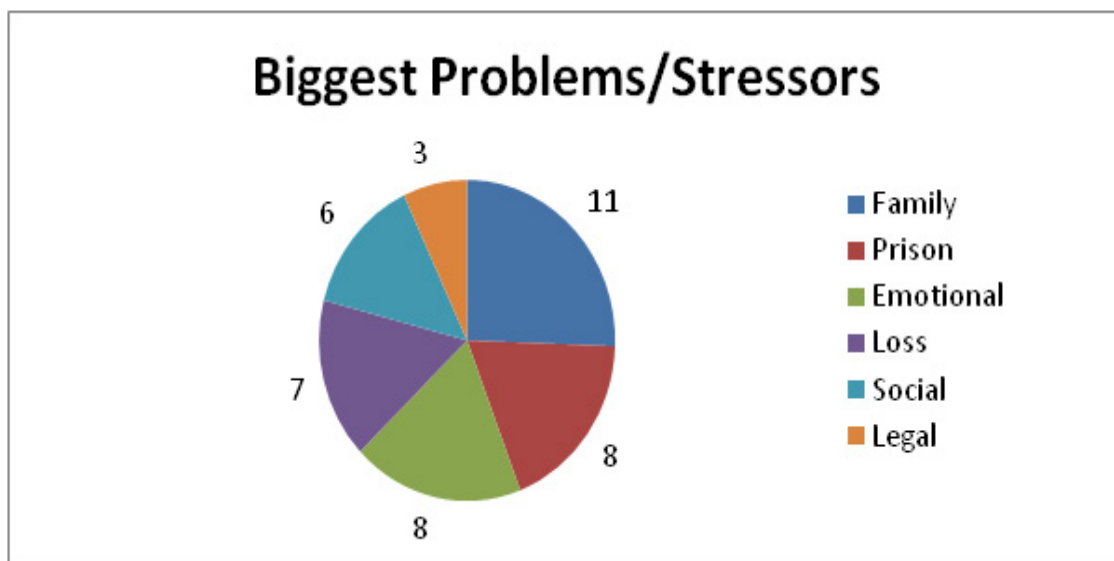


Figure 1: Participants' biggest stressors

The CRI provides a lot of detailed information about participants' stress and coping. The CRI asks participants to identify their biggest/most recent stressor. At times participants listed more than one stressor (see Figure 1).

Responses, written by participants, were categorized and coded to identify commonalities. Family stressors included statements such as “not seeing family”, “lack of communication”, and “separation from family”. Prison refers to the stressor of being in prison. Emotional refers to identified personal feelings, such as anxiety, fear, anger and addiction concerns. Loss indicates the loss of loved ones while incarcerated. Social stressors included statements such as “dealing with people”, “disrespect”, and “job dynamics”. Finally, legal included statements around dealing with their crime, trial or other legal issues.

The CRI evaluated both approach and avoidant coping. According to Moos [23], “approach coping includes problem focused efforts to resolve stressors whereas avoidance coping includes emotional focused efforts to avoid thinking about or managing stressors” (p. 1). A Wilcoxon test examined the results from the pre- and post-test CRI measures. A significant difference was found in the results of approach coping ( $Z=2.07, p<.05$ ). There was no significant difference in the results of avoidance coping pre- and post-test CRI measures.

To evaluate participant feelings about the therapy dogs, the pet bonding scale was utilized [22]. This scale contains 29 items evaluating statements about feelings towards the dogs. For this study, two items that were not applicable (those that discussed exercising and walking with the dog) were excluded for use. The mean for 17

Statement	Mean
The dog visitor likes me.	4.42
I talk to the dog visitor.	4.17
The dog visitor is always glad to see me.	4.58
The dog visitor has become my friend.	4
I look forward to getting up in the morning on days when I will see the dog visitor.	4.67
I tell others about the dog visitor.	4.79
The dog visitor knows when I feel happy.	4.13
I would like to have the dog visitor come to my home.	4.5
I will remember the dog visitor after my program.	4.79
The dog visitor tries to comfort me.	4.17
The dog visitor makes me feel better.	4.83
The dog visits give me energy.	4.21
The dog doesn't judge me.	4.46
I look forward to the dog visits.	4.92
The dog visits make me feel happy.	4.83
The dog accepts me just the way I am.	4.71
The dog takes my mind off my troubles.	4.63

Table 2: Means from Pet Bonding Scale [21].

of the 27 items was 4 or more on a scale of 1 (more often false) to 5 (more often true). Table 2 outlines the specific statements and means of participant responses about the therapy dogs.

Many participants provided additional feedback about their perceptions and feelings of this group intervention. Comments were categorized and coded to identify common themes. The largest number of comments included emotional benefits (N=13) received, including statements such as "Dogs brought feelings of happiness", "Gave us a chance to relieve stress and be relaxed", "Helped me feel less stressed and more able to deal with my problems", "Very comforting and inspirational", and "I was going through a very hard time and visits helped a lot". Several responses specifically discussed the dogs (N=12) saying things like "I loved interacting with the dogs", "Looked forward to seeing the dogs", and "Dogs put me in a better mood for the rest of the day". Finally, the third most common responses (N=7) included general statements about how beneficial they felt the group was. These included statements such as "It was beneficial to my time incarcerated", "Program was amazing and helped me so much", and "It benefitted me tremendously".

## Conclusion

The statistical significance of the BAI results shows the major benefit of this intervention in decreasing anxiety levels of those who are incarcerated. Obviously, no definitive conclusion can be drawn about what specific factor or factors led to this reduction (the therapy dogs, the group itself, or the educational material) due to the fact that there was no control group without dogs for comparison. Regardless, considering the substantial decrease from the pre-test to the post-test, this intervention proved to be a valuable form of treatment with this population who suffers from stress or anxiety related issues. There is not much research regarding the use of animals for stress and anxiety reduction within prisons, so these decreases can be useful to support further development and implementation of such treatment into more correctional facilities. Developing innovative treatment to enhance mental health certainly deserves more attention.

The results from the Coping Response Inventory are also compelling. Family separation and related issues were a major source of stress for participants. These results indicate a need for and the importance of family intervention and support. These results also allude to how these inmates may be able to cope once they reenter into their community

outside a prison facility. Positive behavioral change may result in an increased use of supports versus maladaptive coping, such as substance use, which may have contributed to their crime and incarceration.

Results from the pet bonding scale were extremely powerful and lend qualitative evidence that perhaps the dogs were a major factor in the positive results. Themes present indicated that participants were motivated to attend treatment as a result of the dog. This is a huge factor related to compliance in treatment; designing interventions that individuals want to attend will assist in reaching desired outcomes. Another beneficial theme is the comfort and support felt from the animals. As previously researched, prison is a very stressful place for these individuals [3-5]. Feeling supported in such an environment will go a long way in assisting inmates in managing their mental health by decreasing feelings of stress and anxiety. Clearly, the presence of the therapy dogs helped participants to achieve this level of comfort. In addition to feelings of comfort and support, participants felt accepted and not judged. Nonjudgmental interactions are essential to client self-disclosure and personal growth. The presence of the therapy dogs help to convey this trait and will be a useful adjunct to establishing the therapeutic relationship.

Following the conclusion of the groups, participants frequently stopped the Psychology Manager telling her what a wonderful group this was and the best part of their week. The Psychology Manager also reported that whenever participants would see her with the dog, their face brightened, they greeted the dog, and talked about how nice it was to have the dogs in prison. Other inmates who didn't participate knew the dogs' names, possibly hearing about the program from participants. Staff members (from a variety of disciplines) reported that the inmates talked about how helpful the group was.

This study provides valuable contributions to the use of animal-assisted interventions in correctional settings; however there are limitations. The small sample size is one factor that limits generalizability. Additionally, the lack of a control group (without dogs) prevents one from making more absolute conclusions about which factors (the therapy dogs, the educational content or group support) was the reason for the significant changes. This intervention was designed as an exploratory study to begin research using therapy animals, but it is recommended that future studies utilize both experimental



and control groups to more directly identify the factors contributing to change. However, results from the pet bonding scale help to demonstrate the importance of the therapy animals in this particular intervention.

### Summary for Practitioners

Working with and studying an at-risk population, such as those who are incarcerated, poses some obstacles and threats that make doing these types of interventions more difficult. Concerns about the safety for researchers, participants and the dogs are a primary challenge. One strategy to address these concerns includes using well trained therapy dogs. The dogs utilized in this study were not only certified therapy dogs, but were personally known by the researchers for their calm, adaptable demeanors, comfort with all populations, and prior experience. Utilization of exclusionary criteria in participants also helped to address these concerns by limiting potentially known historical factors (recent violence or cruelty to animals) that could present a risk. Although approval processes may be more challenging compared to other settings, it is hoped that this intervention provides evidence of the positive benefits that can be gained from this type of intervention and therefore pave the way for future implementation in similar facilities.

It is recommended that future studies expand this research to include both a treatment (with dogs) and control (without dogs) group. Longitudinal follow up on recidivism rates would be another recommendation to investigate long term benefits of such programs.

Although few prisons utilize therapy dogs in mental health treatment, some have service dog training programs or programs to provide basic obedience training to shelter dogs to make them more adoptable. Perhaps further exploration of how these dogs enhance the mental health of those who train them can be valuable in demonstrating why animal-assisted interventions should be utilized more often. Another suggestion includes that possibly these dogs, who are already in institutions, could be utilized in other capacities to provide support to more than the handler/trainer.

**Conflicts of interest:** Authors report no conflict or competing interest.

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