"Rehabilitation in Prison: An Examination of Prison Animal Programs"
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Abstract

This thesis investigates the differences between prisons with and without Prison Animal Programs (PAP). PAPs have shown potential as alternative rehabilitation though there have yet to be systematic examinations of their effectiveness. Based on data from the State of Indiana Department of Corrections (IDOC), a total of six prisons were selected- two prisons were selected from security levels 2, 3 and 4, one with a PAP and one without a PAP, for comparison over a ten month period. Three hypotheses were tested using an independent-samples t-test analysis to see if disciplinary problems, staffing levels, and bed capacity differs between prisons with PAPs versus those without PAPs. A fourth hypothesis was tested using Pearson's product moment correlation, to determine if there is a positive correlation between bed availability and custody staff when controlling for security level. The results of the t-test analysis indicate there is a trend, in regards to the beds and correction officers, between those prisons with PAPs and those without. The Pearson's correlation indicates that there is a correlation when controlling for security level. The information found in this thesis may be useful to help criminal justice professionals seeking data for future PAP programs. The implication of this thesis is that PAP programs have a positive effect on the prisons where they are in use. Future studies may be conducted to track recidivism rates of prisoners where PAP programs are active. Tracking recidivism rates will provide the data necessary to measure the success of the program, as well as give administrators the ability to determine if a program is ineffective. Future researchers have many opportunities to expand and connect the importance of this alternative type of rehabilitation to the health of society as a whole.

Introduction

Prison Animal Programs (PAPs) are an alternative form of rehabilitation that use animals to, among other things, teach incarcerated individuals how to respect, care for, and love other living creatures. These programs are also significant because they teach the offender a trade that

may lead to employment opportunities upon release. One main problem, based on past research and information collected by researchers, is the lack of systematic evaluations of PAPs (Furst, 2006; Strimple, 2003).

   The lack of systematic evaluations about PAPs means that there is not data available for the neither public nor prisons considering the addition of PAPs to study. With the lack of this information, it is largely unknown if the programs are successful or not. This document examines the existing data based on the Indiana Department of Corrections website and determines whether the program operating in Indiana is successful by establishing the presence (or lack of) a difference between programs with and without PAPs. Without statistical information regarding this trend, it is difficult for new programs to be implemented, due to lack of information as well as budgetary concerns. Using animals as alternative rehabilitation is an option to consider since current rehabilitation methods are not effective and offenders recidivate frequently. By participating in rescue or rehabilitation animal programs, offenders are contributing positively to the good of their community. They are giving broken animals the chance to realize a good life, as well as learning that they are capable to being a gainful member of society.

Literature Review

   In general, society commonly thinks of an animal as being trained, when it responds to a verbal command, such as "Charlie, sit" or "Roll over, Fido" (Palika, 2010; Ramos & Ades, 2012). However, there are many species that respond not only to verbal prompts, but also to visual cues, or even by smell. The following sections will elaborate more on the training abilities of fish, horses, cats, and dogs.

Horse PAPs

   Larger mammals, such as horses, are more intelligent and aware of who surround them at any time than are smaller animals (Visser, VanDierendonck, Ellis, Rijksen, & Van Reenen, 2009). Whereas it is easy to befriend a dog, horses will be more hesitant to give their trust (Rikards, 2000). This provides ample opportunity for offenders to learn relationship building skills, patience, personal care, and in many locations, the chance to learn a trade that may be useful upon release into society.

   Horses have been used as a method of therapy for handicapped persons for decades in the United States. In 1969, the North American Riding for the Handicapped Association was established (Hines, 2003, p. 13). This is just one program that demonstrates the potential for horses assisting in rehabilitation. Horses currently function in PAPs throughout the United States. One location currently operating a PAP using horses is Wyoming Honor Farm's Wild Horse Program, which has been operating since 1988. This program leads inmates through the steps of caring for a horse, beginning with feeding and spending time helping others care for the horses. The inmate may move to handling the horses only once a supervisor deems him ready to move forward (Corrections.wy.gov [CorrWyo], 2008). Florida also runs a horse program, Second Chance Farm, which trains inmates to rehabilitate retired thoroughbred racehorses. This type of training is beneficial for both the horses as well as the inmates, as they both are participating in rehabilitation through the program. The comprehensive program is a year-long and that requires participating inmates at the Lowell Correctional Institute to pass 22 tests covering all aspects of horse care. A successful participant will graduate the program and receive

a vocational certificate in equine care technology. This type of alternative skill can lead to employment opportunities in the horse care industry (Florida Department of Corrections, n.d.).

There are different types of horse programs in operation in the United States. Readers in southern states may think of the Angola Prison Rodeo when they hear about a prison horse program. The Angola Prison Rodeo is an event that takes place at the Louisiana State Penitentiary (referred to as Angola) once in April and each Sunday in October every year. The horse programs operated as PAPs serve the purpose of rehabilitating both horses and humans through training of both participants. One major difference between PAPs and the Angola Rodeo is that rodeo participants are not trained, and most often have never been on a horse or a bull (Jervis, 2009). Another significant difference is that participants in the rodeo use it as a way to escape daily life in prison; when it is over, they return to normal daily life until the next rodeo. Approximately two-thirds of participants at Angola, are serving life sentences, making the rodeo their only reprieve (Schrift, 2008). These examples give knowledge of the differences between the two programs -a rehabilitation program, the PAP, and a recreational getaway- Angola Rodeo.

One benefit of using horses as a source of alternative rehabilitation is they require their handlers to learn patience and trust. The trust will fall on both offender as well as the horses. Human behavior directly relates to how horses react to their behavior. The study, "A Comparison of Sympathetic and Conventional Training Methods on Responses to Initial Horse Training", undertook the task of comparing the ways horses were trained (Visser et al., 2009). This study is important because it indicates how horses will react based on training methods. Sympathetic training is based on horses and their needs, whereas the conventional training is predetermined and does not consider the horse individually. The results of the study indicate that horses trained in the conventional method kept their bodies more tense and had higher heart rates than the sympathetic training method. These results indicate that sympathetically trained horses are more relaxed, have lower heart rates, and are less rigid, making this type of training a seemingly better choice for the welfare of the animal.

Another topic of interest when reviewing horses for use in PAPs is their ability to learn, remember, and respond to commands. One way to measure a horse's memory capacity is to create trial studies. One such study used immediate-release (IR) trials, and ten second delay (TSD) trials, to see if the horses included in the study were able to remember when given a choice of two feed bags, which bag held actually contained feed. In the immediate release scenario, an assistant placed feed in one of the two bags and sat down. As soon as the assistant sat down, the horses were released. In the TSD trial, assistant followed the same pattern, but the horses were held for ten seconds before release. Each trial was considered successful when the horses moved to the correct bag without attempting to inspect what was in the other bag first. If the horses were more than two meters from the correct bag, the trial was considered unsuccessful. The results of this study indicated that the horses make correct choices more often using immediate release (82.5% for the highest) as opposed to ten second delays (56.7%). The TSD trials show that the horses become confused with which bag to choose after time passes (McLean, 2004). This trial indicates that horses may not have particularly strong short term memory.

Based on the information extracted from the previously mentioned studies, horses respond better to sympathetic training as well as longer duration training. The longer training time allows for the horse to learn the prompts correctly as well as build trust with their handlers. In this way, training horses in the PAP program can benefit the inmates and horses. The inmates have the time to dedicate to training horses, as well as be part of a training program, and the

horses have time to learn the commands instead of immediate expectations. When inmates join the program, they are likely to learn some techniques by observing those who entered the program before them. This type of learning can be classified as social learning. Social learning is when information is passed from one individual to another by observation or interaction (Psychologytoday.com, n.d.).

Dog PAPs

Dogs have been living with humans since about 14,000 years ago, based on archaeological evidence, though at that time they were domestic wolves (Serpell, 1996). Dogs have been mentioned in Greek literature and mythology and were popular lap pets in the Middle Ages in Asia. Dogs have been deemed for generations to be "man's best friend." In modern times, dogs are the most common pets, followed by cats, horses, and birds (Walsh, 2009). Dogs are also used as a calming body in therapy sessions. People may choose to talk to dogs about their feelings or emotions, instead of therapists, because dogs do not judge what they are saying. Dogs are also brought onto school grounds or campuses after tragic events occur. These dogs are often referred to as "comfort dogs" (Walsh, 2009).

Based on history, dogs have played an important role to human life. The next step of this section is to elaborate on how they learn, remember, and show us what they have learned. Dogs have the ability to "fast map." This means to make deductions about object class and name without having learned them directly, and to demonstrate this ability to humans. Fast mapping is also the first step of language achievement in humans (Overall, 2011). One way that dogs are able to achieve this quick learning is by using visual cognition. Dogs direct their attention through gaze direction and eye movements. In one study, a group of six dogs was pre-trained to sit in a position and view a liquid crystal display (LCD) monitor, over a period of 1-2 months. After they were trained to do this for up to 60 seconds, the study evaluated each dogs' eye movements. The study consisted of eight experimental sessions for 5 dogs, and four for the sixth dog. In each session, the dog was shown six frames at two seconds per frame, and a 500 millisecond blank screen between each of the six frames. The images shown were of a dog, human, random item, and a letter. The dogs fixed on the images of the canine faces for a longer duration than human. The dogs fixed on the human face second, the item third, and showed much less interest in the letter. This study is an example that dogs do look at images and recognize their own species (Somppi, Tornqvist, Hanninen, Krause, & Vainio, 2012).

Another study explored how dogs were able to encode, retain, and retrieve a memory of an action. The dog then reproduced a demonstrated action after a delay, this is referred to as deferred imitation. The study then assessed if dogs were able to successfully complete a "do as I do" exercise. This is where the dog owners do an action, have the dogs wait, and then use the pre-trained command of "do it!" to test the dogs' cognitive memory. The dogs all responded with nearly 100% match when the owners demonstrated first, but when given a verbal command, followed by "do it", the majority of the dogs remained still (Fugazza & Miklosi, 2014). These studies are indications that dogs function interactively with humans and commands. Dogs have the ability to recognize tone of voice and non-verbal cues. The reproduced display of action is also a form of social learning, since the imitation may be reinforced with a reward or punishment, other dogs in the area watching are able to learn what actions result in reward (Vold, Bernard, & Snipes, 1998).

There are many PAPs that currently train dogs in the United States prison and jail system. Many of the dog programs train them to be service animals (Prison Pet Partnership [PPP], 2015; "Pawsible," 2015; "NEADS," 2015). This means that the dogs will be able to assist a person who may have loss of vision or hearing, or require companionship for a variety of reasons, upon the completion of their training program. The Prison Pet Partnership requires that inmates spend two years training with them, so that upon completion they will have significant animal care experience (Prison Pet Partnership [PPP], 2015). These vocational skills may translate well upon re-entry to help the inmate locate alternative employment in veterinary care.

This section has shown that dogs have the memory and ability to be trained as service animals or house pets. Dogs are frequently used in PAPs, as an example, the state of Ohio operates a dog program in each of its state prisons. Many of these are abandoned dogs who are trained by inmates and then listed on a petfinder website (www.petfinder.com) for adoption. The state of Washington has partnered with the Prison Pet Partnership since 1981 for the purpose of rehabilitating inmates using the human-animal bond (Prison Pet Partnership [PPP], 2015). Several other states operate PAPs using dogs, however, there are no data available to establish the success of these programs.

Cat PAPs

Smaller species, such as cats and dogs, have already been well received within the prison population (Huss, 2013; Fitzgerald, 2014). For those inmates who don't qualify for the horse or dog training programs, cat programs may be beneficial. It gives the long-term inmate a creature to care for and love (Sullivan, 2012). Many times, inmates are misunderstood or not able to trust to the point that they believe every person is their enemy. Cat programs give the inmates the chance to bond with a living creature (Beck, 1999). Often, inmates are unable to love or trust themselves, or family and friends, and therefore they have not developed the skill to bond with humans. It has been shown that children who own pets generally show enhanced empathy, higher self-esteem, cognitive development, and greater participation in social activities (Walsh, 2009). Making the transition from children and adults, the same types of benefits may be present with incarcerated individuals. By bridging the gap with a pet, the inmate can learn to care for a cat. The cats are not interested in drama or who killed or stole from whom. They want their basic needs fulfilled and therefore, help eliminate any frustration an inmate might feel from a typical human relationship. Cats are moderately trainable, most often for a reward, such as a treat (Pisa & Agrillo, 2009).

Cats are often used in prisons as part of the human-animal bond experience. This means that cats are used in a rehabilitative capacity when teaching humans how to show empathy toward another living creature (Walsh, 2009). This bond is built by having a cat reside in the cell with an inmate. The inmate is responsible for feeding, cleaning the litter box, and providing emotional nurturing (Sullivan, 2012). Sharing their space with the cat teaches the inmate how to respect, as well as learn patience for an animal that is in their direct area. This type of training is a building step for the inmates release into society.

Cats are also able to be trained. Generally, most cats are not trained- or expected to learn to fetch objects as a dog might, but they do have the ability to learn tasks. For example, cats are able to understand object permanence. Object permanence is where an item is no longer in clear sight, but the animal understands that it still exists. In humans, this is stage 5 of development, usually occurring when a child is about a year old (McLeod, 2015). A study was conducted to assess working memory in domestic cats using visible displacement tasks. The study tested 24

cats' ability to locate a desired object that was hidden behind a box located in front of them. The boxes were marked with a visual cue, indicating where the object was located. The testing required the cats to be delayed for timed intervals, the longer the cat was delayed, and the less successful it was at locating the target object. Through this study, it was found that the cats did not use the visual clues to help them locate or memorize the location of the desired object. Most often, the cats remembered approximately where the target location (object) was, but did not remember the exact location (Fiset & Dore, 2006). Another study found supported the fact that cats will search visible targets before hidden targets by using a progressive elimination task. In order for the test to be considered successful in this study, the cat had to locate and deplete 2 visible and one hidden target. The cat chose the visible targets first and the hidden target last consistently. This finding indicates that object permanence is a factor in this study as well (Dorais & Dumas, 2009).

These studies indicate that while the cat understands the object is still present, it does not have the memory required to know where the object is located. It knows the general proximity and based on the location of the cat, it may be able to determine the location of the hidden object. Cats generally do not come running when they are called, as found in other species such as dogs, but they may flick their tail or move their ears to listen- this is known as orienting behavior. Orienting behaviors are movements that occur in response to external stimulus (Meyer, 2006). A study was conducted to see if cats were able to recognize their owner's voice, via a recording. The recording indicated that the cats displayed orienting behavior but not communicative- they did not meow. Several tests were conducted, however, they all indicated that the cats did not respond more to their owners voice, than to the other recorded voices (Saito & Shinozuka, 2013). Further studies may be conducted in the future to test if there are differences between cat reactions to live voices and recorded voices.

Studies have been conducted to determine whether the age of a cat affects its cognitive function, using learning tasks. One such study tested 36 cat's ability to walk across a plank and find a treat in a cup. All cups were scent baited to test memory ability and not olfactory (sense of smell) function. The study noted that older cats (8-12 year old range) displayed no decline in the cognitive function, the older cats remembered with the same success rate as younger cats, therefore age is not an impacting factor on feline memory (McCune, Stevenson, Fretwell, Thompson, & Mills, 2008).

The previously mentioned studies have indicated that cats have the ability to remember a general area where a target object is located. However, the studies indicate that training a cat may not be successful if the owner is trying to use processes similar to those used with horses or dogs. Teaching a cat to fetch, retrieve, or run an obstacle course, where specific memory and response to task is required may not be a realistic expectation.

Fish PAPs

There are more species of fish than of all other types of vertebrae combined. There are over 32,000 different types of known fish species (Brown, 2015, p. 1). This number includes all variations of fish, from minnows to shark, and all fish in between. Historically, society has assumed that fish do not have the ability to remember for a significant amount of time (Giske, Huse, & Fiksen, 1998). This may be because people generally do not think of fish as sentient (the ability to experience pleasure and pain) or cognitive (thinking, understanding, learning, and remembering) creatures, instead only considering them as pets or food. There is some contra-indication however, that fish are trainable but their learning is different than what we expect to

see from land dwelling animals. A problem with gauging the memory capacity in fish is that the tests commonly used to study comparative cognition in humans or primates, will not be accurate when applied to fish. Morgan's Canon says "one should never invoke higher-order explanations for behavior if they might be explained by simpler ones" (Psychologydictionary.com, n.d.). What this means is humans tend to see things from a human perspective, such as tests created or simple observances, when they should attempt to see them from the eye of the creature that is being tested.

In recent studies of various fish types, it has been shown that fish do have the capacity to remember. As an example, Zebrafish were trained to discriminate red from blue regardless of their tank location. This training was done in three sessions per week over a two week period of time. The success rate of the fish learning to approach blue more easily than red was 89.1% after the final session (Arthur & Levin, 2001). Another example of cognition that many pet fish owners may recognize is they often exhibit time-place learning. This means that fish learn to remember the hand that feeds them, as well as the time and place the food is likely to appear, when it is done consistently over a period of time (Brown, 2015). Different species of fish take different amounts of time to learn this task, usually between 2-4 weeks.

Fish are also social learners. This information transfer may pass through generations as vertical transmission, and the end result would be a cultural tradition. One example of this, is that smaller fish learn to avoid larger predator fish. A new fish to a school will observe existing members and avoid the predators in that area (Bshary, Wickler, & Fricke, 2002).

Based on the number of mentally diminished inmates currently in the United States, it is evident that there is a need for a form of rehabilitation for this population. A 2006 BJS report indicates that more than half of all prison and jail inmates had a mental health problem, including 705,600 inmates in state prisons, 70,200 in federal prisons, and 79,900 in local jails. These estimates represented 56% of state prisoners, 45% of federal prisoners, and 64% of jail inmates. After prison/jail admission, more offenders with mental health problems were injured in fights than those without (James & Glaze, 2006).

In a prison setting, the therapeutic calming effect fish give may provide mentally diminished inmates with an alternative type of stress relief and the opportunity to care for another creature (Edwards, Beck, & Lim, 2014). There is a lack of information available as to how fish impact incarcerated individuals, but it has been mentioned in psychological journals that watching fish over periods of time can cause the blood pressure to drop, thereby lowering anxiety and frustration levels (Wells, 2009). When the anxiety has decreased and frustration has lowered, it is less likely for violent incidences to occur. This makes the aquarium therapy a feasible option for prisons with large populations of mentally diminished persons.
At this point in time, there are no prisons using fish as part of their PAPs. The limited data available (as mentioned in this section) indicates that a fish program may be successful for use in a program that aims to reduce stress, more than a program intending to train animals.

Methodology
Design

An examination of extant secondary data was used in this thesis. This is a technique that uses existing data to investigate research questions other than those for which the data were originally gathered (Grady, Cummings, & Hulley, 2013, p. 192). Since this is exploratory research, it will be the most efficient manner in which to analyze existing data.

Extant secondary data analysis was used for several additional reasons. The first reason is the information is publicly available, therefore it is easily accessed. It is not subject to any additional data collection issues from prison staff, inmates, or researchers. Using data that are currently accessible, allows for easier replication. Also, by accessing public records that are readily available, comparisons can be made between prisons with PAPs and prisons without PAPs. This analysis will consider the quantitative results in order to determine validity between the differences of each prison based on: conduct violations while incarcerated, how many correctional officers are employed each month, and how many vacant beds are available each month.

Sampling

The sample of prisons selected used purposive or judgmental sampling. Purposive sampling (expert sampling) is used in cases where the specialty of an authority can select a more representative sample that can bring more accurate results than by using other probability sampling techniques (Explorable.com, 2009; Purposive Sampling, 2012). This type of sampling was used for this thesis because it allows selection of specific samples based on existing knowledge. The state of Indiana has been used because there currently is no available list showing which states are using PAPs and because Indiana is the closest state geographically to Ohio, which is of central interest to this researcher. The Indiana Department of Corrections (IDOC) website is the primary source for data, as it lists all programs that are currently in service at each prison facility in the state.

The inclusion criteria for being selected for analysis in this thesis is that a prison must house males only, and inmates must be serving a minimum of 12 months in the State of Indiana prison system. A person must be sentenced to a year or more on felony charges to be incarcerated in Indiana state prison. Those with less than a year are housed in a local or county jail. PAP programs have set minimum time frames established by the Indiana Department of Corrections. The minimum of 12 months is to allow for adequate training of the offenders in the program. Using public data found on the IDOC website I have compiled and separated the current data to compare three sets of prisons. Each set contains one prison that has a PAP paired with another prison, of the same security level, that does not have a PAP. Other states are not used in this thesis since different states categorize offenses differently. By using only Indiana programs, the laws and security levels are the same. Detailed information about the security levels in Indiana is addressed in the next section.

Sample

The sample includes six prisons - three with PAPs and three without. The reasoning for this number of prisons is because not every prison system has PAPs, and many prison population types with PAPs (such as female) do not have another prison on the same security level, with a comparable total population. Juveniles were not considered for this study, as there are no PAPs currently operating for the juvenile population. Security levels are determined by offenses committed by the inmates. Security level 1 is a minimum security facility, often referred to as "camps". These facilities house offenders who have been convicted of the least serious crimes. Many minimum security prisons allow offenders to leave for a period of time during the day as part of a job detail. No level 1, minimum security prisons were used in this thesis as there are no PAPs operating in Indiana at this level. Minimum security facilities have the least restrictive security measures, also included as minimum security are work release program offenders who

leave the facility for outside employment but return nightly. An offender at security level 2 is housed at a medium security facility. Medium Security Facilities have a moderate degree of security measures. These inmates are housed in dormitory or cell type space. Inmates at security level 2 do not get to leave the prison to seek outside employment. Security level 3 is also considered a medium level. As security level increases, so do the limitations on activities in which the offender may participate. The more serious the crime in which they were involved, the less they qualify for amenities and programs. Both security level 2 and 3 are categorized as medium security, with level two being low medium and level three being high medium. The difference between the two types is that the low medium offenders have committed less serious crimes and have less criminal history. Security level 4 is maximum security. The security at this level is highly restrictive and offenders are housed in celled space. Guards are wary of all inmates, but must be particularly careful of this group, as many are violent offenders.

For the purpose of this study, the prisons are paired in the following manner: two prisons at security level 2, two prisons at security level 3, and two prisons at security level 4. The IDOC houses offenders using security levels 1,2,3, 4 and secure confinement areas. Level 1 and confinement will not be used in this research because no PAPs are operating at those levels in Indiana at this time. The research will contain the time frame ranging from November 2014 to August 2015, a ten month span. This time frame was chosen in order to create a starting point for this exploratory study. There is more historical data available on the IDOC website; however, conducting this research as an exploratory study, the smaller sample size will be sufficient to test the hypotheses (MacCallum, Widaman, Zhang, & Hong, 1999).

Variables (independent and dependent)
The independent variable is whether or not each prison has a PAP. The dependent variables of this thesis include: the difference in disciplinary problems while incarcerated, the difference in custody staff, and bed vacancies for each prison.

Hypotheses
Hypothesis one: There will be a difference in instances of disciplinary problems in the prisons that use PAPs as compared to prisons without PAPs.
Hypothesis two: Prisons that do not have PAPs will reflect a difference in custody staff than prisons with PAPs.
Hypothesis three: There will be a difference in beds available in the prisons with PAPs as compared to those without PAPs.
Hypothesis four: There will be a correlation between bed availability and custody staff when controlling for security level.
H_0 (null) for hypothesis one says there will be no difference in instances of disciplinary problems in prisons that have PAPs and those that do not have PAPs. H_a (alternative and the hypothesis) says that there will be a difference in disciplinary problems in prisons that have PAPs compared to prisons without PAPs. During analysis, the hypotheses were determined as supported (accepted) when the null hypothesis was rejected.
H_0 (null) for hypothesis two says there will be no difference in custody staff in prisons that have PAPs and those that do not have PAPs. H_a (alternative and the hypothesis) says that there will be a difference in custody staff in prisons that have PAPs compared to prisons without PAPs.
H_0 (null) for hypothesis three says there will be no difference in beds available in prisons that have PAPs and those that do not have PAPs. H_a (alternative and the hypothesis) says that there

will be a difference in beds available in prisons that have PAPs compared to prisons without PAPs.

Analysis

        Once the data were collected for each of the variables, they were compiled and analyzed to determine whether the results support or fail to support each hypothesis. In order for a hypothesis to be considered supported, there merely needed to be a difference between the prisons with PAPs and without PAPs on the respective item being compared. In order to test the hypotheses, SPSS was used to compare the data. By comparing each dependent variable (PAP prison v. non-PAP prison), a statistical trend was looked for to support that there is a difference between the prisons. In hypothesis one, the data should reflect less occurrences at a PAP prison in order for this hypothesis to be accepted. An independent-samples t-test was used to test the presence of statistical significance between the prisons. Given the limited sample size, a p-value of .10 (10%) or less rejects the null hypothesis and indicate there is a trend indicated by the data, therefore the research hypothesis will be accepted (Taylor, n.d.). A p-value of more than .10 indicates a lack of significance and the null hypothesis is supported, therefore the hypothesis will be rejected. All three hypotheses were tested using the independent-samples T-test in SPSS.

Results

        The results of the independent samples test indicate there are trends between prisons with PAPs and those without PAPs in two of the three stated hypotheses. Further analysis was conducted using Pearson's correlation to test relatedness between the independent and dependent variables. The statistics are presented in the following section of this chapter. The implications of these findings will be discussed in the final portion of the section:

        Hypothesis one: There will be a difference in instances of disciplinary problems in the prisons that use PAPs as compared to prisons without PAPs.

        The results from an independent samples t test indicated that prisons with PAPs ($M = 241.33$, $SD = 127.35$, $N = 30$) did not reflect a difference in instances of disciplinary problems when compared to prisons without PAPs ($M = 262.3$, $SD = 97.28$, $N = 30$); $t(54.25) = -.714$, $p = .48$, two-tailed. By accepting H_0, the data suggests there is not a significant difference between the prisons that have PAPs and those that do not. The lack of trend indicates in the state of Indiana prison system at the three security levels compared, there is no statistically significant difference in the number of disciplinary problems between prisons with PAPs and those without.

        Hypothesis two: Prisons that do not have PAPs will reflect a difference in custody staff than prisons with PAPs.

        The results from an independent samples t test indicated that prisons with PAPs ($M = 318.87$, $SD = 50.6$, $N = 30$) reflected a difference in custody staff when compared to prisons without PAPs ($M = .457.27$, $SD = 68.41$, $N = 30$); $t(58) = 7.53$, $p = .001$, two-tailed. By rejecting the null hypothesis, the data indicates there is a statistically significant difference in correctional officers of the prisons that have PAPs and those that do not.

        Hypothesis three: There will be a difference in beds available in the prisons with PAPs as compared to those without PAPs.

The results from an independent samples *t* test indicated that prisons with PAPs ($M = 28.27$, *SD* = 34.68, *N* = 30) reflected a difference in available beds when compared to prisons without PAPs (*M* = 72.43, *SD* = 55.49, *N* = 30); $t(58) = -3.68$, $p = .001$, two-tailed. By rejecting the null hypothesis, the data indicates that there is a statistically significant difference in bed space in prisons that have PAPs and those that do not.

Table 1: Comparison of Outcomes by Prison Type

Comparison Item	PAP Prison?	*Mean*	*SD*	*N*	P-value	Significant
Disciplinary Problems	Yes	241.3	127.4	30	.48	No
	No	262.2	92.3	30		
Custody Staff	Yes	318.9	50.6	30	<.001	Yes
	No	457.3	68.4	30		
Bed Capacity	Yes	28.3	34.7	30	<.001	Yes
	No	72.4	55.5	30		

Table 1 illustrates a comparison between prisons with PAPs to those without, for the variables disciplinary problems, custody staff, and bed capacity. The mean (M), standard deviation (SD), population size (N), P-value, and significance of the variable is also reported.

Correlations

Hypothesis four: There will be a positive correlation between bed availability and custody staff when controlling for security level.

A Pearson product-moment correlation was used to explore the relationship between bed availability (*M* = 19.2) and custody staff (*M* = 17.2). This correlation was found to be statistically significant, $r = .439$, $p < .001$, indicating a moderate positive relationship between bed availability and custody staff.

This relationship was then subjected to a first-order partial correlation in order to explore the relationship controlling for the effects of security level. The first-order correlation was found to be statistically significant, $r = .445$, $p < .001$, indicating that a relationship between bed availability and custody staff exists above and beyond the effects of security level, but that the relationship is lessened; that is, security level affects both bed availability and custody staff and is closely related to the two.

Summary and Conclusion

In any research study there are limitations and delimitations. The following are limitations encountered while writing this thesis. Of the limitations encountered while writing this thesis, the most significant was the availability of national recidivism rates, not the IDOC's recidivism rates in particular. Specifically, in the IDOC this information is aggregated, due to frequent transfers between facilities, this statistic is not currently tracked. In the future, data may be collected to track recidivism rates specific to inmates who have participated in PAPs. This data would be able to assist in determining if the programs are successful. The lack of data

regarding recidivism is related to another issue that requires more investigation, employment. During the course of this exploratory research, no statistical information was encountered relative to the employment (success/failure) rates of offenders who participated in the PAPs. To elaborate on why recidivism is difficult to track, not just in PAP programs, consider factors likely to cause recidivism rates to vary such as differences in police practices, the quality of aftercare services, arrest and conviction standards, policies on waivers to the adult system, and guidelines for diverting and dismissing cases. (Harris, Lockwood, Mengers, & Stoodley, 2011). An additional issue in tracking recidivism rates is that of those who reoffend but either do not get caught, or commit a different type of crime, and are not considered to have recidivated. These topics are all very important to establishing the success of all prison rehabilitation programs and should be explored.

Another limitation is the availability of inmate cost per day or cost per month/year. These statistics are aggregated on the IDOC website and contain all prisons together to create an average overall annual cost. Furthermore, on a much larger scale, many prisons do not publicly share data and special requests are needed to acquire this information (for example, California). Based on the lack of data available, it is recommended that future researchers conduct studies to establish how much it costs per inmate per day, month, and year. Further data that may be insightful is whether it costs more or less to house inmates in the PAPs than those in general population.

As a recommendation, this study should be replicated using a larger database at the alpha level (.05 or .01). Based on the data analyzed in this thesis, the future research sample size should be enlarged to include all prison systems within the United States to establish the successes of PAPs. These numbers will be able to indicate what areas of each program are succeeding, and which are failing, and thereby be able to update, change or eliminate those aspects. There are some data available for the PAPs in many states, however they are compiled in such a way that future researchers will need significant time to extract them. Some of the aggregated stats may require researchers to gain permission from the Internal Review Board (IRB) to separate the data for the variables they wish to use.

A final recommendation would be the inclusion of demographics. A future study should be conducted to determine if there are any successes or failures of PAP programs by comparing the data output such as racial category, or socioeconomic status. This thesis did not include demographic characteristics for two reasons, first- they were not relevant to the data being studied, and second- the aggregated data collected from the IDOC would easily be lent to racial profiling. This type of data should be separated by prison and population to determine whether or not race is a factor in the success of PAPs. A possible recommendation for expanding the study may be to consider different populations, such as juvenile, special needs, and female, none of which were considered for this study. By using other populations, it may be possible to track the success of the Prison Animal Program.

Contributions

The community surrounding the prisons with PAPs may see a positive benefit in that offenders who have participated in the PAP have a skill to assist them with a successful re-entry. An offender who participates in the horse program most often completes the program with a veterinary technician I or II certificate (Prison Pet Partnership, 2015). This enables the offender to find gainful employment in a veterinary profession, where a felony on their record would not cause them to lose a job opportunity. Due to their participation in the PAP program, the skills

that the PAP inmates learn will help to establish a bond between the community and future offenders released into the public.

Additionally, members of the community may gain a feeling of confidence and a positive outlook on having the prison in the area, as it will create functioning members of society instead of just turning unskilled and displaced convicts onto the street. The community may also learn to trust released offenders who have participated in these programs, and hire them for industries other than veterinary care. Creating this type of successful link between those in the process of re-entry and the community will help change the views of offenders from decidedly negative, to a positive point of view, and ultimately lower the number of offenders returning to prison (Strimple, 2003).

PAPs are beneficial to inmates at many levels. For offenders who are serving lengthy sentences, it gives them the opportunity to give back to community. Often, as inmates begin to mature, they look for ways to reach out and contribute to their local community in a positive manner. Research has shown that certain species, such as horses, tend to take longer to trust their handlers (McGreevy, Henshall, Starling, McLean, & Boakes, 2014). Inmates who are serving long terms have time available to dedicate to befriending the horses, as well as become trained handlers. They are then able to teach and mentor younger inmates who are in prison for shorter sentences. The give back to community is then doubled by this specific population of inmate. They give to the community by training the horses over extended periods of time, and teaching them to trust humans. The second type of giving is to fellow offenders. Once inmates are trained, they are able to teach new program participants how to handle the horses, what does and doesn't work, how to speak, and how to move around horses. By having more available time to dedicate toward learning how to train a horse, they are able to more thoroughly command train. This benefits the community because they have horses that are able to follow commands, they have a reliable program to turn to when they need a horse to be trained, and the most positive outcome is the community will have a certified veterinary technician. A member of the community may choose to hire the offender who trained the horse while incarcerated, therefore, the horse will already be acquainted with the veterinary technician and have familiar voices and commands (Hausberger & Muller, 2002).

While this final section discussed some limitations encountered during this exploratory research, it is important to summarize the positive indications found in this thesis. The exploratory data reflected that there is a trend between prisons with PAPs and those without. The indications mentioned within are that prisons with PAPs require less custody staff and have more open bed capacity. These indicators are a positive sign that these programs are worth further investigation. Future researchers have many opportunities to expand and connect the importance of this alternative type of rehabilitation to the health of society as a whole.

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