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Equine-Facilitated Prison-Based Programs Within the Context of Prison-Based Animal Programs: State of the Science Review

KEREN BACHI

*PhD Program in Social Welfare, The CUNY Graduate Center & The Silberman
School of Social Work at Hunter College, New York, New York, USA*

Equine-facilitated prison programs have become more prevalent and operate in correctional facilities in 13 states throughout the United States. However, there is a deficit of empirical knowledge to guide them. This article reviews 19 studies of prison-based animal programs and centers on patterns in the literature. It reveals how previous studies are relevant and how they can be applied to the examination of equine-facilitated prison-based interventions. Research of this field is warranted in order to study issues, such as the effectiveness of these programs, suitable participants for such programs and contraindications, and the impact of these programs on variables such as recidivism and disciplinary misconduct.

KEYWORDS *animal assisted therapy/activity (AAT/A), equine-assisted activities/therapy (EAA/T), equine-facilitated prison-based programs, human-animal bond (HAB), literature review, prison-based animal programs (PAPs)*

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Address correspondence to Keren Bachi, PhD Program in Social Welfare, The CUNY Graduate Center & The Silberman School of Social Work at Hunter College, 2180 Third Ave., New York, NY 10035, USA. E-mail: kbachi@gc.cuny.edu

INTRODUCTION AND PROBLEM FORMULATION

Despite the proliferation of equine-facilitated prison-based interventions, limited knowledge actually exists in order to guide them. The idea of animal-facilitated interventions in institutions is not new. Its origin can be traced to the concept of the *human-animal bond* (HAB), a term first conveyed by pioneers such as Konard Lorenz and Boris Levinson (see Deaton, 2005; Levinson & Mallon, 1997; Mallon, Ross, Klee, & Ross, 2010). Reports from 1919 confirmed that dog-facilitated interventions were used in an American institution where individuals were confined (Strimple, 2003). Furthermore, during World War II animals played an important role in American prison camps for German prisoners of war (Strimple, 2003).

Prison-based animal programs (PAPs; Furst, 2006), which incorporate animals into correctional facility programming, are increasingly used throughout the United States. Of the 46 states that participated in a national survey, 36 states reported having PAPs at 159 sites (Furst, 2006). These programs include a variety of animals such as dogs, horses, farm animals, wild animals, and other domesticated animals. The specific involvement of equines in PAPs started in the 1980s. Today, PAPs that involve equines operate in correctional facilities in 13 states (Bureau of Land Management, 2011; Thoroughbred Retirement Foundation, 2012).

The most common PAP type is associated with community service, whereby participants train and care for animals. The animals are then put up for adoption (see Furst, 2006, for a typology of PAPs). There are a number of reasons prisons are increasingly implementing PAPs. First, PAPs aim to benefit inmates by providing various types of rehabilitative interventions. These programs can also produce revenue for the prison (e.g., sale of animal products, initial training of service dogs and horses). In addition, they can contribute to positive community relations fostered by the engagement of inmates in community service (Furst, 2006). Furthermore, department of corrections staff testimonials suggest that such programs can also improve the prison atmosphere (Deaton, 2005). Finally, these programs can contribute to solving broader social issues such as the rescue of unwanted animals. By nursing and training the animals, the inmates help improve their chances of being adopted (Lai, 1998).

A substantial amount of anecdotal reports (e.g., Bair & Osborne, 2003; Deaton, 2005; Fournier, Geller, & Fortney, 2007; Harkrader, Burke, & Owen, 2004; Jaspersen, 2010; Kochersperger & Heger, 2010; Moneymaker & Strimple, 1991; Strimple, 2003) propose that such programs have promising effects on inmate rehabilitation and transformation. Some of the proposed benefits are lower recidivism rates, increased self-esteem, trust and self-confidence, alleviation of loneliness, and acquisition of marketable skills and education, including college credits (Strimple, 2003). Suggested outcomes

can also benefit the correctional institutions, other agencies, and the community (Deaton, 2005).

However, empirical research on this topic is scarce (Britton & Button, 2005; Currie, 2008; Fournier et al., 2007; Furst, 2007b). Only 19 studies of PAPs were found in an exhaustive search. A detailed description and discussion of these studies will follow in the literature review. An overview of these studies reveals that only one study examined an equine-facilitated prison-based intervention (Cushing & Williams, 1995). Recent studies of such interventions were not found. Most other studies looked at dog-facilitated interventions, and one examined a cat-facilitated intervention (Nef, 2004). A range of methodologies was used to assess behavioral and emotional variables such as recidivism, disciplinary reports, and the psychosocial states of participants. Findings are promising and point to emotional and behavioral competences of PAP participants. For example, one qualitative study (Merriam-Arduini, 2000) revealed that participants in a dog-facilitated PAP had considerable behavior improvement in the areas of respect for authority, social interaction and leadership. Participants who completed the program reported improvement in the areas of honesty, empathy, nurturing, social growth, self-confidence, and pride of accomplishment. A zero recidivism rate was also reported (Merriam-Arduini, 2000). Another quantitative study (Burger, Stetina, Turner, McElheney, & Handlos, 2011) with a three-group, pretest–posttest design found that participants in a dog-assisted group training showed significantly more improvement than other groups in scales concerning emotion regulation, emotional self control, and acceptance of emotions. Furthermore, the PAP participants were able to reduce their depressive and aggressive emotions significantly, as well as their imbalanced feelings. Compared to two other interventions the PAP participants were able to benefit the most (Burger et al., 2011).

Knowledge from such studies is relevant and can be applied to the examination of equine-facilitated prison-based interventions (e.g., replication of studies; use of similar variables) since they all share the underlying concept of the HAB in a prison context. As mentioned previously, according to anecdotal reports, animal programs appear to be a cost-effective way of training inmates and lowering recidivism rates, but more research in this field is desperately needed (Strimple, 2003). A gap exists between practice and knowledge of PAPs in general and equine-facilitated prison-based interventions in particular. Research of this field is warranted in order to explore the nature of human–horse relations within a prison context and to further examine issues such as the effectiveness of these programs, suitable participants for such programs and contraindications, the impact of these programs on recidivism and disciplinary actions, and to perform cost–benefit analyses. Furthermore, the literature lacks specific information regarding the number of exoffenders employed in the field after participating in a PAP (Furst, 2006). Studies have not thoroughly examined whether the positive results of

animal-assisted interventions are due to the training program, the animal, its handler, or simply novelty (Currie, 2008). The programs have become more common but with seemingly limited guidance by what is known regarding effective offender rehabilitation (Furst, 2006).

Additional research is needed to explore the theoretical underpinnings and implications of PAPs (Furst, 2006). Since current knowledge of equine-facilitated prison-based programs is absent, these interventions lack a unique theoretical foundation that could guide them. Studies of these interventions may rely on conceptual frameworks and theories that are driven by associated fields of knowledge. For example, one study applied symbolic interaction theory (Furst, 2007b) to explore the development of social identity of participants in a dog-facilitated PAP. Only a few studies propose a theoretical basis for equine-assisted activities/therapies (EAA/T) or explore the unique features that underlie these interventions (Esbjorn, 2006; Frame, 2006). These studies suggest that the human–horse interaction has a fundamental role in EAA/T because of certain features such as relational aspects, metaphor, and feedback. Attachment theory, which concerns intrapersonal and interpersonal processes, may provide an understanding of relational aspects that evolve during PAPs. Studies have shown that relationships with companion animals can physically and psychologically benefit their owners (Crawford, Worsham, & Sweinehart, 2006), and many people relate to their pets as close family members (Phillips Cohen, 2002). This ability of humans to bond so closely with animals is a foundation of animal-assisted activities/therapies (AAA/T). Attachment theory may offer insights into the formation of strong relationships that can also be applied to the HAB (Phillips Cohen, 2007). Some studies used attachment theory to explore the unique role that animals play in the lives of humans. One researcher compared human attachment to dogs with human attachment to other humans (Kurdek, 2008) and found that dogs exhibited the feature of proximity maintenance equally as well as fathers and siblings. Following these findings, using the model of features of an attachment figure identified by Ainsworth (1991) may enhance our understanding of human–horse relations. It may also shed light on whether human–horse relations within the prison context may compensate emotionally for a prisoner’s separation from their loved ones.

In addition, criminological theories of offender rehabilitation could complement the understanding of prisoners’ process of cognitive, emotional, and behavioral change within prison context. The theory of desistance accounts for the ability of long-term offenders to abstain from criminal behavior (Maruna, Lebel, Mitchell, & Naples, 2004). Primary desistance concerns the most basic and literal level of desistance and refers to any lull or crime-free gap in the course of a criminal career. Because every deviant experiences a countless number of such pauses in the course of a criminal career, primary desistance would not be a matter of much theoretical interest. The focus of desistance research, instead, would be on secondary desistance, which is the

movement from the behavior of nonoffending to the assumption of the role or identity of a “changed person.” In secondary desistance, crime not only stops, but “existing roles become disrupted” and a “reorganization based upon a new role or roles will occur” (Maruna et al., 2004, p. 274). Furthermore, long-term desistance does involve identifiable and measurable changes at the level of personal identity or the “me” of the individual, which are reformed through a process of “prosocial labeling” (Maruna et al., 2004). This theory was applied to the study of dog-facilitated PAPs, since desistance, as examined through the perspective of labeling theory, may have particular salience when considering the implications of PAPs (Furst, 2007a). For example, PAPs provide participants with opportunities for being “re-labeled” since they are given the responsibility to care for other living beings—animals. Such a rewarding positive experience is rare in the criminal justice world. In fact, many PAPs increase participants’ responsibilities as they progress in the program. This can be regarded as positive societal reaction needed for secondary desistance (Furst, 2007a). The researcher concluded that while training, socializing, and caring for the animals, PAP participants may develop the cognitions, skills, and behaviors associated with successful criminal desistance (Furst, 2007a, p. 43). Furthermore, the theory suggests that desisters may adopt a role as a “wounded healer,” when experiencing transformation of identity from “victim to survivor to helper” (Maruna et al., 2004, p. 142). Altruistic activities and the theme of the wounded healer were also apparent among this study’s participants (Furst, 2007a). Research should further examine whether the theme of the wounded healer is more apparent in participants from a community-service model of programs where prisoners work with homeless animals that have often been abused or neglected. It may be that these individuals are able to more closely identify with the experiences of these animals (Furst, 2007a, p. 44).

Hence, the nature of relationships that may develop between prison inmates and animals has not been explicitly and thoroughly examined (Furst, 2006). Findings from an examination of equine-facilitated prison-based interventions can be used by the current programs to justify their continuation, to seek additional funding, and to expand the scope of the programs. It will also add to existing literature and research of a few fields that form the foundation of these interventions. Such research may provide practical and theoretical knowledge to the fields of animal-assisted interventions, and EAA/T, specifically those in correctional facilities. In addition, such research will assist correctional scholars and administration in the design, implementation, and evaluation of these prison-based programs.

Enhancing PAPs through the development of a broader knowledge base is also aligned with the social welfare profession’s rehabilitative rather than retributive policy approach. Given that our current sociocultural climate favors “tough on crime” legislation, public officials and community members may reject a large-scale implementation of PAPs. However, rather than simply punishing an inmate, the time spent incarcerated can be used to address the

issues that put an inmate in prison initially and thus prevent him from recidivating. If those issues involve lack of concern for others, low self-esteem, lack of patience, and poor social skills, then PAPs may be effective vehicles for rehabilitation (W. G. Turner, 2007). Consequently, studies of PAPs have important implications for rehabilitation and reintegration of inmates and also have the potential to fuel discussions on broader criminal justice issues, such as retributive versus rehabilitative prison management practices (Fournier et al., 2007). In addition, such research could provide grounds for a theory of justice underlying PAPs (Furst, 2006). Prison-based animal programs can provide new meaning to restorative justice, whereby prisoners simultaneously gain new skills as they give back to the community (Granger & Kogan, 2006).

As per ethical practice, there is an ethical obligation to evaluate PAPs, especially because they serve prisoners, which are a vulnerable population. Implementing programs in the correctional system that are not knowledge-based is unethical because the population involved is confined and has limited options for rehabilitative programs. Examination of these programs can improve them, thus providing best practice to this population. Likewise, as aligned with the helping professions' commitment to the promotion of social justice, research can expose the voices of people on the margins of society (Humphries, 2008a), such as inmates. Research that records participants' real-life experiences (through qualitative interviews) promotes social justice for this population.

Such research is especially relevant because few inmates in the United States receive mental health services during their incarceration, and most are ultimately paroled back into the community with little or no readjustment counseling. Consequently, such programs that serve a dual role of both psychosocial rehabilitation for inmates and service to the community will become increasingly in demand (Suthers-McCabe, Van Voorhees, & Fournier, 2004).

At a time when prisons are becoming more expensive to operate and there is little change in the high rate of recidivism, new thought should be given to alternative prison programs. As aforementioned, first-hand experience suggests that PAPs are beneficial (Strimple, 2003). However, empirical research is required in order to provide a foundation of knowledge for these interventions. In order to have effective policies that translate into formulating sound therapeutic goals and interventions, equine-facilitated prison-based interventions must be studied.

LITERATURE REVIEW

Background

PAPs are implemented in the United States, Canada, England, Scotland, Australia, South Africa (Lai, 1998), Austria (Burger et al., 2011; K. Turner et al., 2011), and Switzerland (Nef, 2004). The earliest program included in a

U.S. survey of PAPs (Furst, 2006) was identified as being established in 1885 and was a livestock care or farm model in Wisconsin. The next four oldest programs (1900, 1920, 1930, and 1981) were also livestock care or farm models. Six programs were established in the 1980s, 14 in the 1990s, and 34 since 2000. Dogs are the primary animals involved in PAPs (66.2%), and the community-service design (40.4%) is the most common model of PAP that incorporates dogs. The next most common animals involved in PAPs are cattle/cows (12.7%) and horses (12.7%; Furst, 2006).

Equine-facilitated prison programs have become more prevalent; however, there is deficit of empirical knowledge to guide them. Two models of equine-facilitated prison-based programs are used in correctional facilities in 13 states throughout the United States. Typologically, both could be classified as multimodal programs composed of a vocational program and community-service program components. Interestingly, both models were initiated in response to issues pertaining to equine welfare, and evolved into programs aiming to also promote the welfare of prisoners.

The Thoroughbred Retirement Foundation's (TRF) Second Chances program, established in 1984, provides vocational training in the area of horse care and maintenance of retired racehorses. This program is implemented in correctional facilities in eight eastern states (New York, Kentucky, Florida, South Carolina, Maryland, Massachusetts, and Indiana) serving men, women, and juvenile delinquents. The TRF foundation aspires to rescue, retire, rehabilitate, and retrain thoroughbred racehorses that are not able to compete on the track, thereby addressing issues of neglect, abuse, and slaughter (Thoroughbred Retirement Foundation, 2012). The TRF is the largest equine sanctuary in the world, which so far has cared for over 4,000 horses through their programs at the various locations. More than 1,000 thoroughbreds have been adopted out to loving homes. At retraining farms, racehorses are prepared for adoption as riding and companion horses. At eight correctional facilities, inmates build life skills while participating in a vocational training program as they provide supervised care to the retired horses. In this program, inmates are taught an extensive and rigorous course in horse care through a structured curriculum, which involves theoretical and practical knowledge, according to a 16-unit curriculum (Thoroughbred Retirement Foundation, 2010). This course was initially accredited by the New York State Department of Education (Strimple, 2003). In this program inmates perform only unmounted work, because these retired horses often need to heal from the rigors of racing. The program aims to achieve two outcomes: the first relates to vocational rehabilitation in which graduates of the programs learn the highest level of horse care. This enables them to work at thoroughbred farms upon their release (moving on to second careers working with horses). The second outcome relates to behavioral and emotional aspects. The emotional benefits of this kind of work help many program graduates, upon completion of their sentences, to become productive

and solid citizens. There is no denying of emotional benefits and improved self-esteem that is derived from caring for, trusting, and in many cases, loving another living being. Furthermore, an integral part of this program's approach to horsemanship training is patience, love, and gentle leadership of the horse. This helps participants learn to know themselves better and understand how their actions are perceived by another being (Thoroughbred Retirement Foundation, 2010).

Anecdotal reports suggest that this program has profound effects on participants because for the first time in their lives they are learning valuable employment skills and how to care for other beings (Strimple, 2003). Reports point out additional transformations that inmates experience while in the program. For example, one participant shared that "horses demand respect and through them I've learned respect for life" (Adams, 2001). Another participant revealed the complexity of his expressed experiences regarding his relationships with horses in this program. The depth and the long reach of this experience are illustrated in his following words: "When I hug them [the horses], I feel that life that they have in them, and I know I have life in me" (Anonymous, personal communication, February 28, 2011). This testimony is short and powerful, where the "life in horses" reassures the participant of parts of his self. This expressed experience is so simple and so complex. The experience of hugging horses provides meaning to this participant's existence. This provides him with the deep knowledge that despite the hard circumstances of being incarcerated his self is alive. The embrace, the interaction has the power to keep life going despite the experience that "when we are incarcerated like this it's like life has almost come to a squelching halt" (Anonymous, personal communication, February 28, 2011).

One more example of how participation in this program can address emotional needs concerns alleviating feelings of loneliness, as stated by various program participants in statements such as, "I stay to myself" (Anonymous, personal communication, February 28, 2011). This raises thoughts of how hard it must be to be so isolated, and how inmates may feel that they must protect themselves from social interactions that may harm them in prison. This shows how important it is to offer an emotional alternative, which could be provided by horses. The following testimony of one of this program's participants exposes the internal dialogue that occurs around the issue of isolation and lack of social support. It points out how this participant is questioning his responsibility to his isolation: Is he the cause of his own isolation? The testimony exposes a wave of "up and down" between his wishes and what he could do to change his situation given the realities that he experiences and how his experience with horses in this program help him socially and emotionally:

I bring on myself you know, I just don't have anything in common, I just kind of stay to myself, but then again, you know, I could say, I think it's

why, I enjoyed coming out here, like a piece of home, you know, I come out here and work with the horses, I enjoyed being around somebody else ... you know, I wish, I would say, I think there are a couple, but then I just had never seen common ... you know, I just pretty much don't, don't feel like a connection with anybody I have here. (Anonymous, personal communication, February 28, 2011)

This testimony demonstrates how horses and participation in the program may alleviate feelings of isolation by providing opportunities for emotionally supportive relationships and also shows how this participant is “working out” his emotional situation and how working with the horses enables that process.

Furthermore, another report proposes that many inmates are not taught good social skills as children and therefore they learn to rely on power and control to get what they want. One needs to have effective communication in order to work with horses. To create a safe and comfortable environment for horses, many inmates must depart from the conduct that cost them their freedom (Pedulla, 2001). Finally, this arrangement seems to positively impact all parties involved: inmates get to transform, prisons get vocational program, the foundation gets free labor, and the horses get devoted care (Simon, 2001). Notably, TRF's Second Chances program has never been studied or evaluated by any research study.

The second model of equine-based prison programs is the Wild Horse Inmate Program (WHIP). Formed in 1986, WHIP is a cooperative agreement between the Bureau of Lands Management (BLM) and correctional institutes in five Western states (Colorado, Kansas, Nevada, Utah, and Wyoming). Dr. Ron Zaidlicz initiated this model in response to the 1971 congressional Wild Free-Roaming Horse and Burro Act, aiming to protect and manage wild horses and burros on public lands (BLM, 2011). The BLM is responsible for the protection and welfare of the wild horses roaming the Western plains and is in critical need for relocation sites for these horses. The mustang horses that inhabit these ranges have proliferated in recent years and now face starvation as a result of the sudden decrease of habitat caused by drought and fires. The BLM estimates that approximately 14,000 wild horses will need to be relocated and held until the current crisis abates. Since its inception, more than 5,000 mustang-horses have been trained through the WHIP. Inmates that volunteer for this rehabilitative model are carefully selected and they learn approximately 200 hours of theoretical and practical horse training and care. In this model, male inmates provide personal and extensive training, both mounted and unmounted, to select wild horses and burros. In addition, inmates feed and care for all other wild horses and burros at the facility. The inmates gain meaningful and marketable work experience that they can use when they are released (BLM, 2011). Wild Horse Inmate Programs employ contemporary low-resistance gentling and

training approaches and require trainers to develop genuine empathy for their animals in order to remain in the program (Lamm, 2010). The WHIP program offers trained horses to people who may not have the experience, time, or the facilities to train an animal on their own (BLM, 2011).

Anecdotal reports about WHIPs suggested that not only was there success with regard to the prisoners, but also the professional industries in the department of corrections (e.g., Colorado Department of Corrections) generated income to support the prison through the sale of trained horses (Strimple, 2003). Other anecdotal reports concerning current WHIPs suggest a number of positive results for participants, horses, adopters, and the BLM (Lamm, 2010; Strimple, 2003). The human-animal relationship that develops in this program transforms both inmates and horses, preparing inmates for life beyond the correctional facility (Dalke, 2008). Participants learn to care for another being and develop trust, responsibility, empathy, teamwork, and other traits that could help keep them from returning to the behaviors that resulted in their incarceration. In addition, although it is not designed to develop vocational skills, the program enabled prisoners to learn all aspects of equine husbandry, including treating injuries and illnesses and gentling horses (Strimple, 2003). The horses are helped through the adjustment from wild behavior to being comfortable in a human environment. Being gentled and desensitized in a professionally supervised environment typically reduces adjustment stress and risk to the horses. The BLM benefits because they avoid having to put horses in holding facilities for years prior to adoption. Adopters, who might not possess the skill set necessary to successfully gentle and train horses on their own, can acquire animals that have demonstrated the ability to safely make the transition into private care. These horses have a sound basic foundation that the adopters can further develop (Lamm, 2010).

However, one critic points out a missing link in this scenario that occurs when inmates get paroled from this type of prison program (Lamm, 2010). Most parole criteria require inmates to be employed in full-time jobs. Part-time and “cash-paying” jobs are discouraged and in some cases not allowed, since these kinds of activities are often associated with patterns that contribute to repeat offenses. Many of these inmate trainers get paroled with a specialized and beneficial skill set—the ability to gentle, train, “doctor,” and trim horses. However since those activities typically involve part-time and cash-paying jobs, parolees typically end up working in unrelated jobs such as in warehouses or as laborers. Due to these restrictions many inmates lose the skills they have developed, and in many instances have come to love. Lamm (2010) therefore suggested enhancing the program by a more structured syllabus including a certification based on proficiency of participants. It is assumed that this could increase employability chances for released WHIP graduates. Another criticism, which also relates to other forms of PAPS, is the issue of government entities exploiting prisoners’ labor and then refusing to employ the same individuals upon release (Furst, 2007a).

The only research study found with regard to equine-facilitated prison-based programs looked into the effects of The Wild Mustang Program (Cushing & Williams, 1995), which was one of the early WHIPs. This study, in addition to studies of other PAPs, will be reviewed and critically assessed in light of PAPs' effects.

DATA: EMPIRICAL FINDINGS OF PAPS EFFECTS

In absence of current studies of equine-facilitated prison-based programs specifically, research of PAPs with adequate rigor could serve as a point of reference and contribute to knowledge of such interventions. Building on existing knowledge of PAPs can help design required studies that could ultimately advance our understanding of these interventions, as well as PAPs' knowledge foundation. In order to synthesize the empirical findings, I coded the findings from 19 PAPs studies according to a grouping of studied variables. These codes included effects on recidivism, disciplinary misconduct, emotional and psychological effects, and sociobehavioral effects, according to the variables each study examined. Studies mentioned for the first time will be described in detail, and additional references will cite only relevant findings (since most examined multiple variables, coded into different groups). It is believed that this will reveal what has been studied, how it was measured, and what should be further explored and examined about PAPs. This could provide grounds for necessary studies.

Recidivism

Five studies examined recidivism rates among PAPs participants. Two studies reported no recidivism of participants, and three other studies found lower recidivism rates among PAP participants as compared with other inmates. The two studies that found no recidivism among PAP participants examined the issue at hand for relatively long periods. In the first study (Furst, 2007a, 2007b), according to reports of prison administrators and the executive director of the affiliated nonprofit organization, no participants had recidivated for a 4- to 5-year period since beginning a program. The sample included 15 female and seven male program participants that participated in individual interviews, as well as 14 male participants that formed a focus group. In this study, data was collected from inmates at two separate prisons who were volunteering in their facility's PAP. The first program, which is in a maximum-security facility for women, pairs participants with puppies who are socialized in preparation for advanced training in explosives detecting. The second program, which is in a medium-security facility for men, pairs participants with former racing greyhounds who are socialized for adoption to the community. The second study (Merriam-Arduini, 2000), reporting no recidivism

among PAP participants was a survey of adjudicated violent, incarcerated male juveniles ages 12 to 25 at a juvenile correctional facility. The program, called Project Pooch, matches unwanted dogs with incarcerated youths who train and prepare them for adoption. Notably, this is one of the few programs where results were documented in a 3-year study. Details about sample size and methods for measuring recidivism were not obtained, since only an abstract was accessible for this study.

Reduced recidivism rates were found in three studies. A review of probation department records (Chianese, 2010) revealed that girls who participated in a PAP reoffended at half the rate of girls who had no exposure to a puppy. Those who did reoffend were charged only with probation violations and did not commit any new crimes. The program studied is called New Leash on Life, located in Orange County Juvenile Hall, Orange County, California. This program attempts to rehabilitate female juvenile delinquents by pairing them with foster puppies. Details of sample size were not obtained since only an abstract was accessible for this study.

Another study revealed that approximately 11% of PAP participants recidivated after an unspecified length of time, whereas 68% (the remaining members of the sample that were paroled) did not return to prison (Moneymaker & Strimple, 1991). This study's duration was 2 years and it included 98 program participants, where 88 were considered valid cases due to their consistent performance. The researchers did not indicate methods of data collection and the statistical analysis was limited. In addition, these findings were not compared to the institutional or state recidivism rate. In this program, at Lorton Prison in Virginia, prisoners were trained in an assistant laboratory animal technician course. Participants who excelled were helped to find employment in the field upon release. In addition, some were paired with shelter animals they could keep in prison or if transferred or released.

Finally, the only study that has been found to examine an equine-facilitated correctional intervention, the Wild Mustang Program (WMP) in New Mexico, also reported reduced recidivism rates among 56 male program participants (Cushing & Williams, 1995). Only 25% of participants recidivated versus an average state recidivism rate of 38.12%. This was a mixed-methods study, composed of qualitative interviews and quantitative methods. The findings concerning recidivism were obtained from the master list of inmates and parolees who were under the supervision of New Mexico's Department of Corrections. However, since this list covered only this particular state, the researchers concluded that evidence regarding recidivism was inconclusive because data was not available if a former inmate happened to be incarcerated in another state (Cushing & Williams, 1995). This comment exhibits the complexity of measuring recidivism. A conclusive examination of recidivism would require access to a criminal national database of state and federal incarcerations, which is not publicly accessible (Pike, 2008). Each state, county, and federal jurisdiction maintains its own records,

therefore it may be reasonable to assume that at this time any investigation of recidivism should be regarded as inconclusive.

Though these findings show positive effects of PAPs on recidivism, they also indicate that this variable should be further and more thoroughly examined. Systematic collection of recidivism data which does not rely on subjective reports of parties involved in programs is required. Perhaps data that is collected routinely by correctional facilities could be used for examination of recidivism. This could enhance the rigor of such research. Furthermore, statistical analysis should be more comprehensive to determine whether differences in the reduction of recidivism are statistically significant or not. In addition, findings should be compared to the institutional or state recidivism rate to provide a more conclusive account of recidivism.

Additionally, a review of empirical correctional literature reveals that correctional training and programs are associated with reduced recidivism (Jensen & Reed, 2006). However, there is a need to conduct program evaluations that will address the outcomes of programs in a more inclusive and wholesome manner (Bazos & Hausman, 2004; Bouffard, MacKenzie, & Hickman, 2000; Jensen & Reed, 2006; Lichtenberger & Ogle, 2008; Wade, 2007). One of the fundamental issues in this research domain concerns the reasons for choosing recidivism as a central variable and its definitions. Recidivism rates are commonly analyzed when assessing the effectiveness of prison education/training programs because the American public demands accountability for money spent on correctional programs. Moreover, recidivism rates are frequently used in evaluation because policymakers who fund rehabilitation programs need empirical evidence that they reduce crime (Batiuk, Moke, & Rountree, 1997). However, recidivism is defined in a variety of ways (e.g., arrest, conviction, reincarceration), sometimes relating to the focus of the research. Hence, because of the many definitions of recidivism, it is difficult to determine whether prison programs are successful (Wade, 2007). In addition, recidivism is a complex variable since it correlates to additional variables that may hinder its measurement solely. The issue of recidivism is multifaceted and should be examined in accordance with various demographic and criminal characteristics of participants (see Kellam, 2009). Furthermore, program evaluations can affect policies that are aimed at giving inmates an opportunity for a purposeful future. Therefore, in addition to the issue of recidivism, programs must educate, train, and prepare inmates so they can successfully reintegrated into the community (Wade, 2007). Consequently, they should be followed by evaluation research that will examine all of these elements as well.

Disciplinary Misconduct

Five studies examined disciplinary misconduct among PAPs participants. One study found a statistically significant improvement, and four other

studies found mixed findings among PAP participants concerning disciplinary misconduct.

Participation in PAP was associated with decreased institutional infractions in one study (Fournier et al., 2007). Statistically significant improvements in the frequency of institutional infractions were found for participants in the treatment group in comparison to the control group. It should be noted that infractions were relatively infrequent, with participants incurring zero to two infractions during the research period. Therefore, the more liberal p -value of .10 was accepted as statistically significant by the authors due to the small number of infractions being analyzed. The sample included 24 male program participants (treatment group) and 24 males who were on a waiting list for the program (control group). This study examined the PenPals program at a minimum-security prison where inmates care for dogs from local shelters and train them for pet adoption. This was a quasi-experimental study with a pretest–posttest, repeated-measures design via self-report and data-mining of institutional files methodologies. The researcher concluded that future replication with a larger sample could clarify the nature of their findings.

Conversely, in another study, participation in the aforementioned WMP was not clearly associated with a reduction in the overall number of disciplinary reports, but the severity of reports swung away from major to minor (Cushing & Williams, 1995). In addition, disciplinary reports decreased by 55% for participants who also received substance abuse counseling. This finding is particularly relevant today because departments of corrections have become increasingly interested in getting inmates to participate in substance abuse treatment (Sherwin et al., 2006).

In addition, the study of the PAP at Lorton, Virginia found that only 12% of participants were discharged from the program due to rule violations (Moneymaker & Strimple, 1991). These included drug use, altercations with other inmates or staff, and/or abuse to the animals in the program. This study also revealed that 45% of participants reported in an anonymous questionnaire that they were actually involved with the distribution and use of drugs while in the program. However, the rest reported that they had either never used drugs or after entering the program chose to abstain from using them.

In a previous study of that same program at Lorton, Virginia, findings revealed a decreased frequency of disciplinary offenses among 20 program participants (Katcher, Beck, & Levine, 1989). However, there was no statistically significant change in the severity of the offenses. Here, criminal records were reviewed for 2 years prior to and the year after the program ended, as well as comparing it to a control group.

Finally, another study (Furst, 2007a, 2007b) reported that only one participant was removed due to disciplinary misconduct at each of two facilities of the PAP during the 4- to 5-year period since the beginnings of programs.

This finding was obtained from testimonials of prison administrators and the executive director of the affiliated nonprofit organization. They also reported that participants are automatically removed from the program for receiving any minor or major-level infraction. It was not possible to gain access to participants' official disciplinary records in order to ground these reports. This study examined participants in two dog programs. In the first, women socialize puppies for preparation for training in explosives detecting. In the second, men socialize former racing greyhounds. The sample included 15 women and seven men from the programs that participated in individual interviews, as well as 14 men who participated in a focus group (Furst, 2007a, 2007b). It may be that participants, knowing that any misconduct would result in expulsion from the program, were more careful about their behavior. This point could be tested by examining correlations between motivation for participation in the program and disciplinary misconduct.

These findings reveal that PAPs are not clearly associated with a reduction in rates of disciplinary misconduct. This association is not well established. Studies should be replicated with larger sample sizes to further clarify the effects of PAPs on rates of disciplinary misconduct. A design of pretest-posttest as well as comparison to a control group would help establish findings. More research should also investigate whether a combination of participation in PAPs as well as substance abuse treatment or maybe other treatment can result in further decreases in disciplinary misconduct. Furthermore, similarly to the issue of recidivism, disciplinary misconduct should also be systematically collected, not relying on subjective reports of parties involved in programs, and followed by more comprehensive statistical analysis. This could enhance the rigor of such inquiries.

Emotional and Psychological Effects

Fourteen studies looked into a range of emotional and psychological effects of PAPs on participants. These studies concern variables of self-esteem and other psychological competences, clinical symptomatology and treatment issues, as well as aspects of emotion regulation. The majority of these studies demonstrate positive effects of PAPs on emotional and psychological competencies of participants. Some of them report on statistically significant associations. Only two of these studies report mixed findings.

Self-esteem is one of the most looked at variables concerning PAPs effects. Enhancement of self-esteem following PAP participation emerged as a qualitative theme in six inquiries (Currie, 2008; Cushing & Williams, 1995; Merriam-Arduini, 2000; Moneymaker & Strimple, 1991; Nef, 2004; W. G. Turner, 2007), and one quantitative examination (Walsh & Mertin, 1994). Statistically significant improvements in participants' self-esteem, based on standardized self-report measures, were found in an evaluation of a pilot program in a women's prison in Australia (Walsh & Mertin, 1994). This was

a prepost–posttest design and the sample included eight women who participated in the program for 6 months. In this program the women trained companion dogs for elderly and physically challenged individuals. The researchers noted that their findings may have been somewhat contaminated, as some participants knew they were due for discharge at the time of postassessment (Walsh & Mertin, 1994). This comment is relevant also to other studies of PAPs since many of the programs are offered to inmates who are closer to the end of their sentence. Consequently, it is reasonable to assume that this may confound study findings. This point clarifies the importance of controlling for these effects. This could be addressed by a design that includes a control group as well. However, these statistically significance findings are noteworthy considering the small sample size.

Conversely, two quantitative studies reported on mixed findings concerning effects of PAPs on participants' self-esteem (Richardson-Taylor & Blanchette, 2001; Suthers-McCabe et al., 2004). No statistically significant differences of self-esteem were found in a comparison between 12 program participants and 11 nonparticipants, who served as a control group (Richardson-Taylor & Blanchette, 2001). Similar findings were reported also concerning variables of locus of control. This study was conducted in a canine program at Nova Institution for Women in Canada. The quantitative measurements in this study were administered only once as posttest (Richardson-Taylor & Blanchette, 2001). Hence, adding a pretest measurement and a larger sample size may have resulted in different findings. These are points to consider in the design of future studies. One more study reported no statistically significant findings of the measure of self-esteem among 16 participants in a service-dog training program (Suthers-McCabe et al., 2004). Similar findings were also reported for variables of empathy and personal control. This research was composed of pretest before the beginning of the program and posttest bimonthly thereafter during a 1-year training period. The researchers noted that in addition to a small sample size, the lack of significant findings may be explained by a "ceiling effect," in that mean pretest scores on all measures were in the normal/healthy range, precluding further movement in the direction of improved psychological functioning (Suthers-McCabe et al., 2004).

A range of additional psychological improvements emerged as themes of PAPs effects on participants. These themes consist of self control (Cushing & Williams, 1995), sense of autonomy and responsibility (Cushing & Williams, 1995; Moneymaker & Strimple, 1991), nurturing role (Cushing & Williams, 1995; Merriam-Arduini, 2000), self-confidence (Merriam-Arduini, 2000), and pride of accomplishment (Currie, 2008; Merriam-Arduini, 2000). Furthermore, the programs were perceived as humanizing the inmates (Currie, 2008; Merriam-Arduini, 2000), as they contribute to the development of empathy, honesty (Merriam-Arduini, 2000), and trust (Nef, 2004). Finally, PAPs were addressed as increasing personal patience (Currie, 2008;

W. G. Turner, 2007), fostering feelings of giving back to society (Currie, 2008), as well as contributing to participants' sense of achieving a better goal in life (Moneymaker & Strimple, 1991).

Some studies explored PAPs effects on clinical symptomatology and treatment issues. One qualitative inquiry concluded that participation in a prison cat adoption program resulted in improvements of emotional states that facilitate psychological treatment. For some inmates the cat provided the only reason to go on living while behind prison bars (Nef, 2004). Another aforementioned study discovered statistically significant progress of inmate treatment levels within the prison's therapeutic community for PAP participants. Compared with a control group, PAP participants exhibited better psychosocial functioning (Fournier et al., 2007). This is a substantial finding, as it suggests participation in this program beneficially impacts the treatment already in place at the prison.

Levels of participants' depression were also examined by PAPs studies. One study (aforementioned) found statistically significant improvements in participants' levels of depression, based on standardized self-report measures (Walsh & Mertin, 1994). Furthermore, a PAP group had lower scores of depression than the control group (a trend, not statistically significant) in another aforementioned study (Richardson-Taylor & Blanchette, 2001).

Additionally, psychiatric incarcerated patients with pets needed half as much medication, and had no suicide attempts during a year-long comparison (Lee, 1987). The ward without pets had eight documented suicide attempts during the same year. Both wards had comparable patients and had equal levels of security. This data mining of institutional records was conducted at the AAT program at Oakwood Forensic Center (formally, the Lima State Hospital for the Criminally Insane) in Lima, Ohio. Established in 1975, this was the first formal AAT program to use a maximum-security population in the United States and is one of the earliest PAPs studies.

Finally, three recent quantitative studies examined aspects of emotion regulation among inmate participants in dog-assisted group training in Vienna, Austria. Two of the studies were composed of a three-group, pretest-posttest designed study with male criminal offenders who were substance abusers. Both used quantitative measures of emotion regulation, emotional self-control, acceptance of emotions as well as other variables. Findings of the first study indicate that all participants were able to benefit from the different interventions (Burger et al., 2011). In addition, the PAP participants showed significantly more improvements than the other groups in the scales concerning emotion regulation, emotional self-control, and acceptance of emotions. Furthermore, the PAP participants were able to reduce their depressive and aggressive emotions significantly, as well as their imbalanced feelings. Here, one intervention group with 36 men participated in the PAP, the second group with 12 men attended a work-integration-training and the

third group with 12 participants received the baseline treatment, which consisted of group therapy. The researchers concluded that the PAP proved to be effective in improving the participants' emotional competences and status. Compared to the two other interventions the PAP participants benefited the most (Burger et al., 2011).

Findings of the second study reveal that statistically significant improvements were observed in the intervention group in comparison to two other control groups (Stetina, Gegenhuber, et al., 2009; Stetina, Kuchta, et al., 2009), including improvements in acceptance of their own emotions, emotion regulation, and emotional self-control. Furthermore, the intervention group experienced less emotion flooding and lesser feelings of lack of emotions. They also were significantly less emotionally exhausted and less aggressive. In addition, they felt more optimistic and secure. Significant improvements were also found regarding social competences (e.g., problem solving). Here, one intervention group with 28 men participated in the PAP, the second one with nine men took part in a work-related rehabilitation program, and the second control group of nine men received no extra training. The researchers concluded that dog-assisted training had a positive influence on the development of healthy emotion regulation (Stetina, Gegenhuber, et al., 2009). The two aforementioned studies are remarkable considering their extensive design of a three-group comparison as well as their findings and could serve as a model for future studies.

Lastly, statistically significant improvements with regard to empathy and emotion regulation were found among participants of the intervention (K. Turner et al., 2011). Improvements of perceived regulation of emotions and facial expression were also found (trend, not statistically significant finding). This study was composed of a pretest–posttest design using quantitative instruments and video recordings that were coded and statistically analyzed. The sample included ten mentally disordered prisoners who participated in a 12-week intervention. The researchers concluded that participants learned to deal with their emotions more effectively due to the intervention (K. Turner et al., 2011).

The emotional effects of PAPs on participants drew the attention of researchers, especially with regard to self-esteem. Notable is the wide range of themes that emerged from the qualitative inquiries. They highlight the richness of how PAPs affect the psychological well-being of participants. In addition, PAPs effects on more clinical symptomatology and treatment issues as well as aspects of emotion regulation appear to be powerful, especially studies composed of a three-group, pretest–posttest design. Future studies could enhance knowledge by using designs that control possible contaminating effects, such as the impact of approaching release on participants' emotional states. Furthermore, current studies do not explore the emotional mechanism that underlies participants' psychological change. For example, what is the nature of the human-animal relationship that develops in a prison

context, and how does it contribute to the emotional states of participants? The accumulating knowledge could be further advanced by such inquiries.

Sociobehavioral Effects

Twelve studies looked into sociobehavioral effects of PAPs on participants. The majority of these studies reported on the ways in which PAPs improve social skills and help participants with their future reintegration into society. These studies explore interpersonal and intrapersonal social effects as well as broader social outcomes that bridge between inmates and the community.

A few studies demonstrate that PAPs enhance participants' intrapersonal social competencies. One study reported on statistically significant improvements in one specific area of social skills and social sensitivity, which improved for the treatment group from pretest to posttest while the control group scores decreased on this variable (Fournier et al., 2007). This finding suggests participants may have improved in this skill as a result of working in the PAP. The broader implication is that PAPs may have socially rehabilitative effects for prison inmates and may serve as a buffer to prevent a decline of social skills. Perhaps inmates who do not participate in such programs are prone to deterioration in their social skills caused by influences of imprisonment (Fournier et al., 2007). Consequently, this emphasizes the importance of having a control group in future studies.

Statistically significant improvements were also found regarding social competences in the area of problem solving (Stetina, Gegenhuber, et al., 2009) and communicational abilities (K. Turner et al., 2011). Moreover, statistically significant reductions in feelings of isolation among PAP participants were revealed in another study (Moneymaker & Strimple, 1991). Similarly, a PAP group scored statistically significantly lower on a loneliness scale than did a control group (Richardson-Taylor & Blanchette, 2001). The PAP provided a means of coping with loneliness. Participants interacted with and bonded to living beings that could be trusted and were nonjudgmental. As well, taking care of an animal was an accepted way of showing and giving affection in prison (Nef, 2004). In addition, participants who completed a PAP reported improvement in social growth (Merriam-Arduini, 2000). Some emerging themes include considerable change in participants' outlook toward others (Moneymaker & Strimple, 1991), increase of patience, and an opportunity to develop parenting skills (W. G. Turner, 2007). PAP served as a necessary diversion from standard prison life and a provision of companionship (Lee, 1987). It also drastically reduced incidents of violence (Lee, 1987).

Other studies indicate that PAPs have interpersonal social effects on the prison environment. A few qualitative inquiries suggest that PAPs improved social interactions among participants as well as with correctional staff (Suthers-McCabe et al., 2004). Some propose that PAPs may have a positive

impact on the prison environment (Britton & Button, 2005; Currie, 2008; Nef, 2004) as they create a comfortable atmosphere (Lee, 1987) and a calming and normalizing effect within the correctional facility (W. G. Turner, 2007). Furthermore, PAPs can promote social support, providing opportunities to help others (Currie, 2008; W. G. Turner, 2007), and may have a generally affirmative effect on behavior and attitudes (Britton & Button, 2005; Currie, 2008) in the areas of respect for authority, social interaction, and positive leadership (Merriam-Arduini, 2000).

Conversely, one quantitative study found no statistically significant differences of correctional environment status, composed of variables of hostility and disinterest (Richardson-Taylor & Blanchette, 2001). This disparity points out that the effects of PAPs on the prison environment should be further investigated by studies of various methods to provide a comprehensive inquiry of this issue.

Lastly, PAPs may contribute to broader social processes, bridging between inmates and the community. PAPs can provide participants with an opportunity to give back to the community (Britton & Button, 2005). As well, the program has a positive impact on the community's perception of PAP participants (Richardson-Taylor & Blanchette, 2001).

The aforementioned findings highlight promising effects of PAPs on sociobehavioral variables concerning participants, prison environment, and the community. The majority of findings emerged from qualitative inquiry, which is exploratory, as adequate for research of phenomenon with limited prior knowledge. Applying various methods in future studies could enrich our knowledge of this phenomenon. Notably, these studies were conducted in programs that were facilitated by pet animals (e.g., dogs or cats). It is necessary to examine the sociobehavioral effects of PAPs that involve other animals to complement existing knowledge.

Other

Other PAP studies, which do not fit into the aforementioned categories, provide additional information that advances knowledge of theory as well as practice. One study looked into the physiological impact of pet ownership on inmates (Katcher et al., 1989). No statistically significant differences of blood pressure measurements were found between PAP participants and a control group in a pretest-posttest design. Participant blood pressure was recorded in the presence and absence of the pet (Katcher et al., 1989). Examination of blood pressure with other populations (not inmates) exposed to animals reveals contrary findings (Katcher, Friedmann, Beck, & Lynch, 1983). Moreover, findings indicate that increased social support through pet ownership lowers blood pressure response to mental stress (Allen, Shykoff, & Izzo, 2001). PAPs participants usually spend time with animals on a daily basis and being incarcerated could generate mental stress. Therefore, it

would be beneficial to further examine whether or not PAPs reduces participants' blood pressure and/or improves other physiological measures, and if not, why not.

Another study employed a theoretical framework to guide exploration toward an initiation of a unique theory for PAPs (Furst, 2007a, 2007b). Conversely, most other studies only draw theoretical implications from their findings at this point of knowledge development. Applying the theory of Symbolic Interaction to PAPs revealed that inmates engaged in a similar process of assigning the dogs with which they work a human-like identity that in turn impacts their own human self-identity (Furst, 2007a, 2007b). These findings emerged despite the relatively limited length of time and more communal nature of the relationships formed in PAPs due to teamwork with dogs. In addition, as aligned with the theory of criminal desistance, the interview data also revealed support for the theoretical construct that desisters are often wounded healers. The researcher concluded that PAP participation may be able to provide a foundation for successful criminal desistance (Furst, 2007a, 2007b), as aforementioned. This study offers a unique contribution to the knowledge base because it pertains to a building of theoretical constructs that can guide the field. Therefore, this study could serve as a model study for further development of theoretical underpinnings for PAPs.

A few other studies report on findings that concern formative evaluations for program planning and development. One study explored participants' motivations and challenges in the program (Britton & Button, 2005). Participants reported that their main motivations for entering the program were their love of dogs, having the freedom of movement in the institution, and the opportunity to give back to community via the PAP. The challenges participants faced in their work concern a hypersurveillance they felt as result of participation, conflict with other inmates with regard to dog handling, and the emotional burden of having to give up the dogs to adopter-recipients (Britton & Button, 2005). Another study reported on the rate of program attrition (Suthers-McCabe et al., 2004). The drop-out rate of inmates in the examined PAPs was high, with only 23% completing a full year in the program. A systematic study of dropouts from the program and their reasons as well as an examination of participants who completed PAPs successfully could help determine a profile of indication and contraindications for prospective participants. This would help maximize the use of PAPs.

Interestingly, though many of the PAPs have features of vocational programs, only a few studies looked at vocational effects on participants. A study of an equine-facilitated prison-based intervention revealed, through interviews, that the program was providing participants with meaningful and productive work (Cushing & Williams, 1995). Another study found that 95% of PAP participants chose not to participate in the facility's work-release program (Moneymaker & Strimple, 1991). The authors suggest inmates did not

want to leave their animals to work a menial job. They preferred to attend classes to become certified as a laboratory animal technician rather than participating in a work release program. This could be viewed as a possible unintended negative outcome of the program in the short-run. However, the authors reported that participants felt that their time would be better spent learning how to become a skilled technician so that upon release they would be more employable and better able to secure a practical and rewarding vocation (Moneymaker & Strimple, 1991).

In addition, PAPs teach participants the basic skills necessary for obtaining and keeping a job, including responsibility, dedication, and respect (Furst, 2006), as demonstrated earlier in this review. An additional vocational aspect of PAPs stems from the training participants receive in a variety of animal-related tasks. Some programs even offer certifications that can lead to job opportunities (Lai, 1998; Strimple, 2003). However, there is need for further examination of the ways in which PAPs can enhance employability of participants. It should be noted that the literature lacks specific information regarding the number of released participants employed in the field after participating in a PAP (Furst, 2006).

The aforementioned findings concern program monitoring and process evaluations, which are extremely important for planning and funding entities. Such inquiries should be routine if program planning and program development are truly taking place (Smith, 2010, p. 35). In addition, these studies demonstrate a wide range of possibilities for future research of PAPs. Developing a broad knowledge base requires research of theory, routine conclusive evaluations for program planning and development and examination of other PAPs effects (e.g., vocational and physiological). This is fundamental in order to bridge the gap between knowledge and practice of these interventions.

EVALUATION OF THE LITERATURE AND CONCLUSIONS

The literature review reveals that studies of PAPs center on recidivism, disciplinary misconduct, emotional and psychological effects, sociobehavioral effects, and other aspects of theory and formative evaluation. Except for a few studies, the majority revealed findings that support PAPs improvement of participants' well-being, which may also contribute to a positive reintegration into society. Some studies demonstrate PAPs' effects beyond the individual, pertaining to the institutional environment and the community. Research of equine-facilitated prison-based programs could draw its design implementing knowledge from these studies. Since these programs are underexplored, it appears that the required studies should aim to explore and measure a wide range of features of this intervention. At this initial stage of knowledge development, the review illustrates that PAPs studies employ both exploratory as

well as confirmatory methodologies. It highlights the need for a multi-methods methodology, which may make it possible to capture the full extent and the depth of this phenomenon. In absence of knowledge, exploratory inquiries are required as well as verification designs. Furthermore, it is not necessary to create a binary division between outcome and process (Humphries, 2008b). Programs, like PAPs, form complex packages that develop in interaction with their context, and it is appropriate that evaluations are widened to take this into account. Therefore, an examination of the effects and processes of equine-facilitated prison-based programs (e.g., study of human–horse relations) is required. Consequently, research of equine-facilitated prison-based interventions should look into effects: What are the outcomes (questions of “what” and “how many”)? As well, there should be an exploration of the mechanisms that create these effects: How do the outcomes happen (questions of “how” and “why”)? Studies that synthesize these features can and may also lead to a unique theory (a model of causation) for this intervention.

As to the general field of PAPs, there is a critical need for further empirical investigation of these programs as well as long-term follow-up with the inmates who participate in them. Researchers and practitioners need to assess the quality of PAPs according to what the field recognizes as the principles of effective treatment programs (Furst, 2006). Further examinations should compare various PAPs models and looking at the differences between PAPs that are facilitated with different animals. Other issues that should be further examined are unique characteristics of PAPs for various populations of men, women and juvenile delinquents (see Jaspersen, 2010; Painz, 2010). Research should explore additional questions such as whether a standard way of operation is useful to participants, or to administrators, or to those who want to study them? Do the programs work because they are tailored to the cultural conditions of a particular facility? What could those in power do with the results? Notably, the programs have the ethical and practical responsibility toward the animals involved. However, prison administrators may be reluctant for implementing PAPs since having animals involved in prison programs adds an extra responsibility of caring for them. This requires change in prison routine to address the animals’ needs. Nevertheless, if these programs have outcomes that do not appear beneficial, the programs are obliged to find a substitute way to care for the animals that are in these programs and ensure their long-lasting welfare.

Furthermore, recidivism is often a measure but, as aforementioned, it is hard to define. It is important to recognize that many factors play into an individual’s return to prison. PAPs may benefit inmates and animals providing valuable skills, but if there is not a structure that ensures employment after leaving the facility, the likelihood of return will be greater. In addition, the participants in these programs are potentially very different in their personal characteristics. Because of criteria for selection, the likelihood to randomize is limited.

Other Issues That Concern PAPs Research

Additionally, not everything that exists can be measured. These programs exist throughout the country with different species of animals, with human participants who have been incarcerated for very different reasons, in areas of a country that are very different from each other. Therefore one should be cautious when drawing conclusions from studies of this field. Finally, there is a question concerning how will the general public, which supports getting “tough on crime,” respond to inmates having better self-esteem and improved living conditions.

In addition to the aforementioned critical analysis concerning each specific study, statistical analyses of PAPs studies should be more comprehensive to determine effect size of statistically significant findings. This matter calls also for a replication of studies and for the examination of whether findings reoccur in studies with larger samples as well. Other fundamental issues are that some studies did not include a control group or were measured only as a posttest. Such designs do not allow for determination of whether or not the intervention is the cause of the findings.

One question that arises from the review is with regards to the pattern of positive and in some cases statistically significant findings despite relatively small sample sizes. Furthermore, the very few studies that reported on findings that show weak or no effects of PAPs on participants raises a red flag that there may in fact be more of these studies that have not been published (“hidden-drawer syndrome” or “publication bias”). Perhaps one way to address such puzzles is by conducting a meta-analysis of PAPs studies. This could show whether the results are more varied than what is expected from the sample diversity and could enable generalization to the population of studies. It makes it also possible to show if a publication bias exists. Furthermore, while a true experimental design is usually recommended for obtaining firm knowledge, it is unlikely prison administrators would allow inmates to be randomly assigned to PAPs (Fournier et al., 2007), which could also be unethical. Therefore, the group-randomized-trial (see Murray, 1998), in which whole groups are randomly assigned to treatment or control conditions, could be indicated as a research design to address this issue. Such a design would involve random assignment among correctional facilities utilizing similar PAPs. Findings from such a design involving several different correctional populations and settings would increase the possibility for generalizability (Fournier et al., 2007).

It is difficult to increase general support and expand innovative ideas without an extensive evaluation of measurable data. The limited research while PAPs are proliferating may point to barriers of developing more knowledge of this field. Obtaining approval for conducting research within DOC may be challenging since administrators may object an external examination of their operations. Furthermore, correctional entities do not necessarily rely

on research as a foundation for decision-making about programming. Other factors such as public relations or politics may play a role in decisions about whether programs are utilized or not. Researchers should overcome such barriers for conducting studies of PAPs, and find ways to communicate how academic knowledge can contribute to correctional operations. More research-based evidence of PAPs characteristics and effectiveness would certainly add validity to this field (Deaton, 2005). This evidence can be used by current programs to justify their continuation, to seek additional funding, and to expand the scope of programming (W. G. Turner, 2007). Even when studies reveal weaknesses of programs, or if programs do not meet some agreed upon success rate they could be used to refine and improve programs so that they do benefit their participants.

In addition, developing knowledge of equine-facilitated prison-based programs, in part of the greater fields of AAA/T and EAA/T, can generate more rigid outlines for utilization of these interventions and help develop clearer expectations and protocols. Such research can also help these fields to further gain respectability in the mental health arena (Fine & Mio, 2010). Finally, evaluation research is carried out to promote accountability, to examine effectiveness, to identify gaps, and to develop knowledge (Humphries, 2008b). Consequently, study of equine-facilitated prison-based programs can provide the foundation of knowledge to guide this intervention.

REFERENCES

- Adams, K. (2001, March/April). 2nd chances. *Backstretch*, 32–37.
- Ainsworth, M. D. (1991). Attachment and other affectional bonds across the life cycle. In C. M. Parkes, J. Stevenson-Hinde, & P. Marris (Eds.), *Attachment across the lifecycle* (pp. 33–51). New York, NY: Routledge.
- Allen, K., Shykoff, B. E., & Izzo, J. L. (2001). Pet ownership, but not ACE inhibitor therapy, blunts home blood pressure responses to mental stress. *Hypertension*, 38, 815–820.
- Bair, R., & Osborne, S. J. (2003). Healing inmates' hearts and spirits with man's best friend. *Corrections Today*, 65(2), 122–124.
- Batiuk, M. E., Moke, P., & Rountree, P. W. (1997). Crime and rehabilitation: Correctional education as an agent of change: A research note. *Justice Quarterly*, 14(1), 167–180.
- Bazos, A., & Hausman, J. (2004). Correctional education as a crime control program. *Correctional Education Association*. Retrieved from <http://www.ceanational.org/PDFs/ed-as-crime-control.pdf>
- Bouffard, J. A., MacKenzie, D. L., & Hickman, L. J. (2000). Effectiveness of vocational education and employment programs for adult offenders a methodology-based analysis of the literature. *Journal of Offender Rehabilitation*, 31, 1–41.
- Britton, D. M., & Button, A. (2005). Prison pups: Assessing the effects of dog training programs in correctional facilities. *Journal of Family Social Work*, 9(4), 79–95. doi: 10.1300/1039v09n0406

- Bureau of Land Management. (2011). Colorado Wild Horse Inmate Program. Retrieved from http://www.blm.gov/co/st/en/BLM_Programs/wild_horse_and_burro/Wild_Horse_Inmate_Program_Colorado.html
- Burger, E., Stetina, B. U., Turner, K., McElheney, J., & Handlos, U. (2011). Dog-assisted therapy in prison: Emotional competences and emotional status of drug-addicted criminal offenders. *Journal of Veterinary Behavior: Clinical Applications and Research*, 6(1), 79–80. doi: 10.1016/j.jveb.2010.09.011
- Chianese, N. M. (2010). *Girls, jails, and puppy dog tails: An evaluation of the New Leash on Life program*. Retrieved from <http://ezproxy.gc.cuny.edu/login?url=http://search.proquest.com/docview/305247439?accountid=7287>
- Crawford, E. K., Worsham, N. L., & Sweinehart, E. R. (2006). Benefits derived from companion animals, and the use of the term “attachment.” *Anthrozoös*, 19(2), 98–112.
- Currie, N. S. (2008). *A case study of incarcerated males participating in a canine training program* (Unpublished dissertation). Department of Special Education, Counseling, and Student Affairs College of Education, Kansas State University, Manhattan, KS.
- Cushing, J. L., & Williams, J. D. (1995). The Wild Mustang program: A case study in facilitated inmate therapy. *Journal of Offender Rehabilitation*, 22(3/4), 95–112. doi: 10.1300/J076v22n03_08
- Dalke, K. (2008). At the threshold of change: The inmates and Wild Horses of Cañon City, Colorado. *Reflections*, 14(4), 12–16.
- Deaton, C. (2005). Humanizing prisons with animals: A closer look at “cell dogs” and horse programs in correctional institutions. *Journal of Correctional Education*, 56(1), 46–62.
- Esbjorn, R. J. (2006). *When horses heal: A qualitative inquiry into equine-facilitated psychotherapy* (PhD dissertation). Available from EBSCOhost PsycINFO Database. Accession number: 2006-99020-082
- Fine, A. H., & Mio, J. S. (2010). The role of AAT in clinical practice: The importance of demonstrating empirically oriented psychotherapies. In A. H. Fine (Ed.), *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice* (3rd ed., pp. 563–578). San Diego, CA: Academic Press.
- Fournier, A. K., Geller, E. S., & Fortney, E. V. (2007). Human-animal interaction in a prison setting: Impact on criminal behavior, treatment progress, and social skills. *Behavior and Social Issues*, 16(1), 89–105.
- Frame, D. L. (2006). *Practices of therapists using equine-facilitated/assisted psychotherapy in the treatment of adolescents diagnosed with depression: A qualitative study* (PhD dissertation). Available from EBSCOhost PsycINFO Database. Frame (2006): UMI Microform Number: 3204151
- Furst, G. (2006). Prison-based animal programs: A national survey. *The Prison Journal*, 86, 407–430. doi: 10.1177/0032885506293242
- Furst, G. (2007a). Prison-based animal programs: Self-reported effects of participation and implications for desistance. *Prison Service Journal*, 172, 38–44.
- Furst, G. (2007b). Without words to get in the way: Symbolic interaction in prison-based animal programs. *Qualitative Sociology Review*, 3(1), 96–109.
- Granger, B. P., & Kogan, L. R. (2006). Characteristics of animal-assisted therapy/activity in specialized settings. In A. H. Fine (Ed.), *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice* (2nd ed., pp. 263–285). San Diego, CA: Academic Press.

- Harkrader, T., Burke, T. W., & Owen, S. S. (2004). Pound puppies: The rehabilitative uses of dogs in correctional facilities. *Corrections Today*, *66*(2), 74–79.
- Humphries, B. (2008a). Ethical research and social justice. *Social Work Research for Social Justice* (pp. 19–32). Basingstoke, England: Palgrave Macmillan.
- Humphries, B. (2008b). Evaluation research. In *Social work research for social justice* (pp. 169–188). Basingstoke, England: Palgrave Macmillan.
- Jasperson, R. A. (2010). Animal-assisted therapy with female inmates with mental illness: A case example from a pilot program. *Journal of Offender Rehabilitation*, *49*, 417–433. doi: 10.1080/10509674.2010.499056
- Jensen, E. L., & Reed, G. E. (2006). Adult correctional education programs: An update on current status based on recent studies. *Journal of Offender Rehabilitation*, *44*(1), 81–98.
- Katcher, A. H., Beck, A. M., & Levine, D. (1989). Evaluation of a pet program in prison: The PAL project at Lorton. *Anthrozoos*, *2*(3), 175–180.
- Katcher, A. H., Friedmann, E., Beck, A. M., & Lynch, J. (1983). Looking, talking and blood pressure: The physiologic consequences of interaction with the living environment. In A. H. Katcher & A. M. Beck (Eds.), *New perspectives on our lives with companion animals*. Philadelphia, PA: University of Pennsylvania Press.
- Kellam, L. (2009). 2004 releases: Three-year post release follow-up (pp. 1–58). NY DOC Division of Program Planning Research & Evaluation. Albany, NY: State of New York DOC Services. Retrieved from http://www.doccs.ny.gov/Research/Reports/2009/2004_releases_3yr_out.pdf
- Kochersperger, K., & Heger, L. (2010). Tucker gets a second chance: Learning important life skills while in prison and being rescued from a life of homelessness. *Palaestra*, *25*(2), 33–35.
- Kurdek, L. A. (2008). Pet dogs as attachment figures. *Journal of Social and Personal Relationships*, *25*, 247–266.
- Lai, J. (1998). *Pet facilitated therapy in correctional institutions*. Retrieved from <http://www.csc-scc.gc.ca>
- Lamm, W. (2010). Prison horse training programs: The incomplete success story. Retrieved from http://www.aowha.org/documents/prison_programs01.pdf
- Lee, D. (1987). Companion animals in institutions. In P. Arkow (Ed.), *The loving bond: Companion animals in the helping professions* (pp. 229–236). Saratoga, CA: R & E Publishers.
- Levinson, B. M., & Mallon, G. P. (1997). *Pet-oriented child psychotherapy*. Springfield, Ill: Charles C. Thomas.
- Lichtenberger, E., & Ogle, J. T. (2008). Utilizing post-release outcome information to measure the effectiveness of correctional education programs. Retrieved from http://www.ceanational.org/PDFs/Post_Release_Outcomes.pdf
- Mallon, G. P., Ross, S. B., Jr., Klee, S., & Ross, L. (2010). Designing and implementing animal-assisted therapy programs in health and mental health organizations. In A. H. Fine (Ed.), *Handbook on animal-assisted therapy: Theoretical foundations and guidelines for practice* (3rd ed., pp. 135–148). San Diego, CA: Academic Press.
- Maruna, S., Lebel, T. P., Mitchell, N., & Naples, M. (2004). Pygmalion in the reintegration process: Desistance from crime through the looking glass. *Psychology, Crime & Law*, *10*, 271–281.

- Merriam-Arduini, S. (2000). *Evaluation of an experimental program designed to have a positive effect on adjudicated violent, incarcerated male juveniles age 12–25 in the state of Oregon* (Unpublished doctoral dissertation). Pepperdine University, Malibu, CA.
- Moneymaker, J. M., & Strimple, E. O. (1991). Animals and inmates. *Journal of Offender Rehabilitation*, 16(3/4), 133–152. doi: 10.1300/J076v16n03_09
- Murray, D. M. (1998). *Design and analysis of group-randomized trials*. New York, NY: Oxford Press.
- Nef, N. (2004, October 6–9). *The Cat Programme, an animal-assisted therapy at Saxierriet prison for men: Its effects and results in a correctional establishment*. Paper presented at the 10th International Conference on Human-Animal Interactions, People and Animals: A Timeless Relationship, Glasgow, Scotland.
- Painz, M. J. (2010, November 17). *Gender inequality in prison programming and the benefits of prison animal programs in women's facilities*. Retrieved from http://www.allacademic.com/meta/p432448_index.html
- Pedulla, T. (2001, October 17). Inmates get a helping hoof. *USA Today*, p. C3.
- Phillips Cohen, S. (2002). Can pets function as family members? *Western Journal of Nursing Research*, 24, 621–638.
- Phillips Cohen, S. (2007). *Applying theories of attachment to the human-animal bond*. Paper presented at the Convention Notes of the 144th American Veterinary Medical Association Annual Convention, O'Fallon, IL.
- Pike, J. (2008). National Crime Information Center (NCIC). Retrieved from <http://www.fas.org/irp/agency/doj/fbi/is/ncic.htm>
- Richardson-Taylor, K., & Blanchette, K. (2001). *Results of an evaluation of the Pawsitive Directions Canine Program at Nova Institution for women*. Correctional Service of Canada, Research Branch. Retrieved from: http://www.csc-scc.gc.ca/text/rsrch/reports/r108/r108_e.pdf
- Sherwin, P. J. W., Burns, J. E., Doyle, V. E., Kamins, B., Lewis, D., Lindenauer, S. B., ... Wagner, J. (2006). "Re-entry and reintegration: The road to public safety" report and recommendations of the Special Committee on Collateral Consequences of Criminal Proceedings. Retrieved from <http://www.nysba.org/AM/Template.cfm?Section=Home&CONTENTID=11415&TEMPLATE=/CM/ContentDisplay.cfm>
- Simon, S. (2001, February 20). Program mends the spirits of broken men, broken horses; hope is abundant in prison barn. *Los Angeles Times*, p. A5.
- Smith, M. J. (2010). *Handbook of program evaluation for social work and health professionals*. New York, NY: Oxford University Press.
- Stetina, B. U., Gegenhuber, B., McElheney, J., Handlos, U., Kuchta, B., Gindl, B., ... Kryspin-Exner, I. (2009). Health promotion with the animal assisted training (MTI) for drug offenders. *Psychology & Health*, 24(S1), 376–377.
- Stetina, B. U., Kuchta, B., Gindl, B., Maman, T. L., Handlos, U., Werdenich, W., & Kryspin-Exner, I. (2009). Changes in emotional competences of drug offenders during dog-assisted group training (MTI). *Journal of Veterinary Behavior: Clinical Applications and Research*, 4(2), 99–100. doi:10.1016/j.jveb.2008.10.030
- Strimple, E. O. (2003). A history of prison inmate-animal interaction programs. *American Behavioral Scientist*, 47(1), 70–78.
- Suthers-McCabe, H. M., Van Voorhees, E. E., & Fournier, A. K. (2004, October 6–9). *The human-animal bond in an American prison: Inmate trainer outcomes*.

- Paper presented at the 10th International Conference on Human-Animal Interactions, People and Animals: A Timeless Relationship, The International Society for Anthrozoology, Glasgow, Scotland.
- Thoroughbred Retirement Foundation. (2010). *TRF'S Second Chances program* [Fact sheet]. Saratoga Springs, NY: Author.
- Thoroughbred Retirement Foundation. (2012). Farms and facilities. Retrieved from <http://www.trfinc.org/Farms-and-Facilities-c10.html>
- Turner, K., Stetina, B. U., Burger, E., Glenk, L. M., Kothgassner, O. D., & Handlos, U. (2011). Dog-assisted intervention (MTI) with mentally disordered prisoners: Enhancing empathy—a pilot study. *Journal of Veterinary Behavior: Clinical Applications and Research*, 6(1), 97. doi: 10.1016/j.jveb.2010.08.010
- Turner, W. G. (2007). The experiences of offenders in a prison canine program. *Federal Probation*, 71(1), 38–43.
- Wade, B. (2007). Studies of correctional education programs. *Adult Basic Education & Literacy Journal*, 1(1), 27–31.
- Walsh, P., & Mertin, P. (1994). The training of pets as therapy dogs in a women's prison: A pilot study. *Anthrozoos*, 7(2), 124–128.