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Equine-Facilitated Learning for Youths with Severe Emotional Disorders: A Quantitative and Qualitative Study

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Abstract The present study quantitatively and qualitatively evaluated the effects of an alternative therapeutic learning method on youths with severe emotional disorders (SED). The youths participated in a nine-week equine-facilitated learning program. Very little research exists investigating the effectiveness of utilizing horses in the therapeutic learning process. The present study encompasses three years of research on a unique program hypothesized to enhance traditional therapy and facilitate the learning process for youths with special needs.

Keywords Equine-facilitated · Animal assisted · Therapy · Behavior disorder · Emotional disorder

Introduction

Children with learning disabilities, conduct problems, or clinical diagnoses are at risk for the development of severe emotional disorders in adolescence. Severe emotional disorders not curtailed in adolescence often lead to serious psychopathology in adulthood. Therefore, positive and effective interventions at the crucial adolescent stage are imperative to the emotional growth of the youths at risk. However, a child who shows signs of problems may not cooperate with traditional forms of therapy. This lack of cooperation could be due to negative parental interactions or an effect of a behavioral disorder. Many ''at-risk'' adolescents view therapists, teachers, or adults in general with mistrust or apprehension. In order to overcome this hurdle of

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apprehension, mental health professionals and teachers often turn to alternative methods of therapy to meet the needs of emotionally disturbed youth. The present study focuses on such an alternative method that utilizes animals in a therapeutic role with ''at-risk'' adolescents enrolled in a special education setting over a three-year period. This study will explore the use of equines as therapeutic co-facilitators and education enhancers. The purpose of this study is to evaluate the effectiveness of the described method.

Animals as Co-Therapists and Educators

Working with developmentally or behaviorally challenged children requires imagination and the ability to incorporate methods other than ''talk therapy'' into the office setting. Therapists often turn to play therapy, sports, or outdoor walks to build rapport with a difficult child (Bowers & MacDonald, 2001). Animals may open the door, so to speak, to garner attention, to initiate discussions, and to establish the trust needed in the therapeutic process.

During a child's social maturation, owning a pet or simply interacting with animals helps develop the attitudes of empathy and humaneness towards others. Empathy is often lacking in youths with behavioral or conduct disorders. Animal assisted therapy and/or learning (AAT/L) may help to instill empathy with these youths. According to Nebbe (2003) ''children see animals as peers, teaching them to be empathetic with an animal is easier than with a human.'' A positive correlation has been demonstrated between animal companionship and empathy towards other people (Bryant, 1985; Poresky, 1996). A school-based humane education program found enhanced attitudes towards animals, as well as a generalization from those attitudes toward human-directed empathy (Ascione & Weber, 1996).

Equine-Facilitated Psychotherapy/Learning

A specific area of animal assisted therapy gathering attention uses horses as co-facilitators in a learning process. Equine-facilitated psychotherapy or learning (EFP/L) is an experiential methodology that uses a ''hands-on'' approach. It is unique from other AAT/L methodologies in that the client must go to the animal and participate in the animal's environment. Therapists using this method find horses to have a special rehabilitating role ''because people can ride horses and there is a unique opportunity to experience the deeper dimensions of the human-animal relationship'' (Vidrine, Owen-Smith, & Faulkner, 2002, p. 590). The rationale behind the use of horses as a more effective therapy animal involves the physical attributes of the horse. The stature of a horse alongside a child solicits respect, a frequent problem area with at-risk children. For the emotionally or cognitively disabled child, the philosophy of EFP/L is ''the challenge of controlling a 1,000-pound snorting creature which both concentrates the mind and, when successfully met, stokes the dampened fires of pride'' (Melson, 2001, p. 115).

The objective of EFP/L is to instill a sense of order, to create an understanding of boundaries, to improve focus, and to instill trust (Equine-Facilitated Mental Health Association, EFMHA, 2003). Activities in the learning process may include feeding, tacking, grooming, riding, or vaulting. EFP specifically does require a licensed mental health care worker and a credentialed equine professional to carry out the

activities (EFMHA, 2003). AAT/L with a horse requires more time, training and dedication than with other animals. However, the horse offers the recipient an unparalleled experience that is both physical and social (Fine, 2000).

To date, the majority of research on EFP/L is qualitative. However, interest in the novel approach has provoked the attention of the psychological research community. Initial results of pilot studies show promise and a need for greater empirical study. Bowers and MacDonald's (2001) evaluation of an equine-facilitated therapy program for at-risk adolescents found a significant decrease in depression for participating youths. Both self-report measures and observations of the participants showed the program to ''foster development of life skills including open and direct communication, honesty, patience, respect, and proper use of power and control'' (Bowers & MacDonald, 2001, p. 69). Adolescents (ages 13–16 years) referred by residential treatment centers and homes who participated in an EFP program were found to have significant increases in feelings of self-esteem and internal locus of control (MacDonald & Cappo, 2003). This second pilot study also revealed an increase in participants' reported feelings of social acceptance and peer popularity, indicating the program may positively affect the adolescent's ability to make friends and interact with other people. A third pilot study conducted with referred adolescents who showed both defiant behaviors and anger management issues found a significant decrease in self-reports of hostility and overall aggression following a six-week EFP program (P.M. MacDonald, unpublished). Children and adolescents with physical disabilities demonstrated increases in self-esteem in a therapeutic riding program's post-test evaluation (Gatty, 2001). The findings of increased self-esteem are considered to be a result of the confidence gathered during the program and increased feelings of control not usually experienced by physically handicapped individuals. A qualitative study conducted with children in a residential center showed improvement in the areas of interpersonal communication, sensitivity towards others and relationship building among the participants in a therapeutic vaulting program (Vidrine et al., 2002). More recently, a study of a five-day therapeutic riding program showed significant decreases in anger among able-bodied children (Kaiser, Spence, Lavergne, & Vanden Bosch, 2004).

Clearly, the utilization of horses as therapeutic intervention with at-risk adolescents is a credible area of research. Most AAT/L programs take place in a therapist's office or a classroom. EFP/L is unique in that the clients go to the animal: They must experience the treatment in its natural environment. To continue the lead of current, promising research, the purpose of this study was to evaluate the effectiveness of equine-facilitated therapy with adolescents diagnosed with severe emotional disorders. To date, most research has been conducted with adolescents in residential treatment centers. This study includes participants from a special purpose day school. The day school presents greater challenges due to the inconsistent family life most youths in the study experience at home. The present study also focuses on a younger population (ages 10–13 years), with more severe emotional or learning impairments than the pilot studies. It was predicted that the program would increase the youth's sense of self-worth, self-esteem, interpersonal empathy, and internal locus of control. It was also predicted that participation in the equine-facilitated program would result in decreased feelings of depression and loneliness.

Method

Participants

Youths from an alternative day school for middle and high school aged students participated in an equine-facilitated learning program, named Horse Power. Serenata Farms School of Equestrian Arts in Big Springs, Kansas was the initial location for Horse Power. Because of financial constraints, the final year of the program was carried out at R & D Ranch, located in Topeka, Kansas. R & D Ranch generously donated the use of their facility and their horses to the program. A North American Riding for the Handicapped Association (NARHA) certified trainer supervised the program at both farms.

Students are referred to the alternative school when they cannot learn in traditional classrooms or mainstreamed special education classes. The youths in this study suffer from moderate to severe behavioral or conduct disorders and/or learning disabilities. Many of the participants have IQ scores below the average range. Table 1 shows the range of verbal, performance and full IQ scores for 26 participants. Table 2 includes the mean full IQ scores of the participants and the mean full IQ scores of the participants without the score of one gifted student.

Participants included both males and females, of various ethnic backgrounds, ranging in ages from 10 to 13 years. Most of the participants live in poor familial

Table 1 IQ Scores of Participants

Participant	Verbal IQ score	Performance IQ score	Full IQ score
1	89	91	89
2	78	91	83
3	78	81	77
4	89	81	84
5	74	54	64
6	81	93	85
7	97	92	95
8	100	83	92
9	97	111	104
10	105	87	96
11	–	–	–
12	82	86	83
13	80	83	80
14	–	–	50
15	113	100	107
16	92	86	88
17	70	50	60
18	–	–	117
19	71	68	67
20	130	140	138
21	88	78	81
22	97	95	95
23	–	–	–
24	98	82	90
25	89	89	87
26	95	65	78
27	71	80	73
28	–	–	–

Note: Dashes indicate the IQ score was not available. Range for full IQ score = 50–138

Table 2 Mean IQ Scores of Participants

Participants	Verbal IQ scores	Performance IQ scores	Full IQ scores
All (N = 26)	89	85	86
Without outlier (N = 25)	87	83	84

Note: Values are *M*

environments, with low socioeconomic support. Thirty-six students participated in the program. Not all students in the program participated in the study. Some students were extremely low functioning or had such severe behavioral disorders that testing was not feasible. Thus, the study tested twenty-eight of the thirty-six participants.

A special education teacher at the day school referred students to the nine-week program. She based the selection of students on group dynamics. Students selected for each experimental group had similarities in both age and IQ to facilitate group cohesiveness. Four to five students were selected per nine-week session to participate in the experimental group. Students waiting to participate in the subsequent session were designated as the control group. All youths participating were considered to be at risk due a wide range of behavioral problems. Figure 1 shows the clinical diagnoses and behavioral problems of the youths. Participation was voluntary and all guidelines set forth by APA (1992) for the ethical treatment of research participants were followed.

Materials

Self-Perception Profile for Children

Self-esteem was measured with the Self-Perception Profile for Children (Harter, 1982). This self-reporting instrument assesses a child's sense of competence across

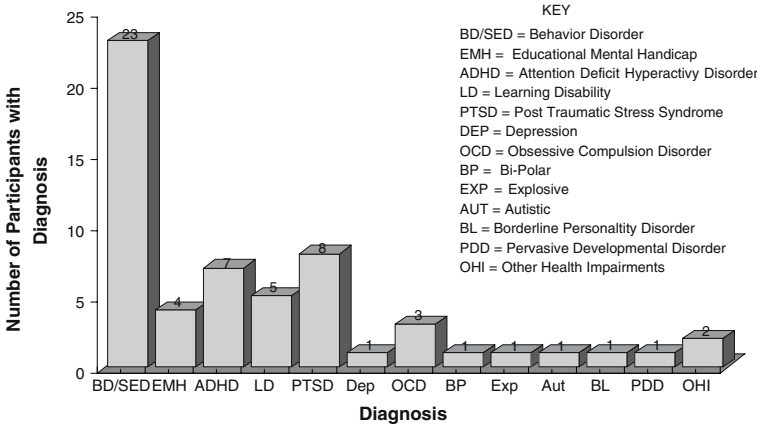

Fig. 1 Behavior and diagnoses labels for participants

six subscales: (1) Scholastic Competence; (2) Social Acceptance; (3) Athletic Competence; (4) Physical Appearance; (5) Behavioral Conduct; and (6) General Self-Worth. Harter developed a format with a broad range of questions that aim to overcome a tendency for respondents to give socially desirable answers. Children in grades 3 through 9 are the designated age group for this instrument.

Empathy Questionnaire

The Empathy Questionnaire measures the extent to which a subject can understand someone else's thoughts, feelings and perspectives (Davis, 1980). The questionnaire is divided into four subscales: (1) Fantasy: The tendency to identify with characters in movies, books, etc.; (2) Perspective-Taking: The ability to see things from another's point of view; (3) Empathetic Concern: Feelings of warmth and compassion for others; and (4) Personal Distress: Feelings of anxiety and discomfort resulting from observing other people's unfortunate experiences.

Locus of Control Scale

The Locus of Control Scale is a modification of the Nowicki-Strickland Internal-External Control Scale for Children (CNSIE: Nowicki & Strickland, 1973). The CNSIE is a 40-item self-reporting measure with a Yes–No response format developed from a 102-item pool of questions. The original 102 items were administered to nine clinical psychology staff members who were asked to answer questions in an external direction. The items that were not in agreement by the members were dropped. Following an item analysis, the test was further reduced to form the modified 40-item version. The present version uses a ''true''—''sort of true''—''false'' format, with the ''sort of true'' response included to increase variability. The CNSIE scale has adequate internal and temporal consistency. Data relevant to divergent and convergent validity are encouraging. It appears to be the best available measure as a scale of locus of control for children.

Children's Depression Inventory

The Children's Depression Inventory (CDI: M. Kovacs, unpublished) is a self-report questionnaire designed to assess depression in children between the ages of 8 and 16 years. Children are asked to choose one of three sentences which best describes their feelings in the past two weeks. The CDI is a 27-item questionnaire. However, for the purpose of this study, the original number 9 question about suicidal ideation was deleted creating a modified 26-item version.

Children's Loneliness Questionnaire

The Children's Loneliness Questionnaire (Asher, Hymel, & Renshaw, 1984) was developed to assess feelings of loneliness and social dissatisfaction in children. The questionnaire consists of 24 items. The 16 primary items focus on children's feelings of loneliness, feelings of inadequacy, and subjective estimates of peer status. Eight questions about children's likes and dislikes in activities were included to help children feel more open and relaxed. The 16-item scale has been shown to be internally consistent (Cronbach's alpha = .90) and internally reliable (split-half

correlation between forms = .83, Spearman-Brown reliability coefficient = .91, Guttman split-half reliability coefficient = .91). This measure represents an alternative to using teacher ratings, behavioral measures, or sociometric measures to examine peer relations.

Procedure

The program consisted of nine-week sessions, approximately two hours in length twice a week, for a total of 36 h of participation at the facility. In addition to the EFL experience at the ranch, Horse Power has been incorporated into the classroom as an academic subject. All aspects of classes for the participants (including reading, math, and social studies) have an equine theme. Thus, Horse Power becomes an education enhancer as well as a therapeutic intervention. Although Horse Power is neither a reward nor a punishment intervention, it is used to elicit pro-social behaviors. Students who have completed the program may earn the right to come back to subsequent sessions to serve as mentors for the new participants.

As part of the EFL process, the youths participate in a nine-week structured program designed to teach skills such as cooperation, trust, and responsibility with the goal of transferring these learned skills into their own lives and everyday interactions. Participants are paired with a horse at the introduction of the session. The youth works with a horse as a partner throughout the nine weeks. The rationale behind teaming one horse with one child is to form a feeling of ownership and connection between the child and horse. The feeling of connectedness is hypothesized to address the focus and attention problems youths with SED display.

The structure of the EFP/L program is maintained with the assistance of North American Riding for the Handicapped Association (NARHA) certified therapeutic instructors. Additionally, each participant is paired with a volunteer who is a horse owner or who has horsemanship experience. The volunteers work with the students to teach the responsibilities involved in caretaking and adhering to rules for safety. The volunteers will also show the youths the proper attire needed to ride and how to behave with the animals as well as giving riding lessons. Thus, the volunteers and therapeutic instructors are educators, as well as mentors and role models for the participants.

Throughout the EFP/L sessions, the students are encouraged to participate in all aspects of the care and handling of their partnered horse, with the exception of bringing the horse into the pen. The participants learn how to saddle their horse while gaining knowledge of the variety of equipment needed to ride their horse. Participants must demonstrate responsibility by cleaning equipment they have used as well as the horse's stall. In addition to education, the participants have the opportunity to ride if they choose to. Each session includes a ''circle time'' in which the participants discuss the positive components of Horse Power and their individual goals for the day. The students' teacher, and occasionally, the school psychologist remain at the ranch throughout each session to enhance the security and safety of the program.

To evaluate the effectiveness of the Horse Power program a battery of questionnaires was administered to each participant prior to the nine-week session and upon completion of the nine- week session. Participants were pre-tested individually at the alternative school. The battery of tests appraised the participant's feelings of self-esteem, depression, loneliness, empathy, and locus of control. Each item of the

measure was read aloud to the participant and answers were subsequently recorded. Evaluation of each student required approximately 60 min to complete.

All testable participants experienced the experimental condition. The students awaiting participation in the nine-week session comprised the control group. Pre-test and post-test evaluations were administered during the same time period for both the experimental and control group, with the post-test of the control group serving as the pre-test of their experimental condition. The participants were evaluated following their completion of the program with the same measures and methodology, with comparisons made between the pre-tests and post-tests.

Results

Each measure was analyzed individually with paired *t*-tests. No statistically significant differences were found between the pre-tests and post-tests for the quantitative measures with the experimental group (see Table 3). The results are listed by hypothesis as follows:

1. The hypothesis that the youth's sense of self-esteem would increase was not supported. This hypothesis was tested with the general self-worth subscale of the Self-Perception Profile for Children (Harter, 1982).
2. The hypothesis that the participant's feelings of interpersonal empathy would increase was not supported. The difference in scores for pre-tests and post-tests in the experimental group were not found to be statistically significant on the Empathy Concern subscale of the Empathy Questionnaire (Davis, 1980).
3. The hypothesis that an increase in internal, rather than external, locus of control would result after participation was not supported.
4. Similarly, the hypothesis that the youth's feelings of depression would decrease as a function of the program was not supported. The Children's Depression Inventory revealed no statistically significant changes over time for the experimental group.
5. Finally, the hypothesis that feelings of loneliness would decrease was not supported by the testing differences in pre- and post- tests with the Children's Loneliness Questionnaire.

Qualitative Results

Although the quantitative results did not show statistical significance, qualitative analyses were illuminating. Case studies compiled from interviews and observations

Table 3 Paired *t*-tests of emotional outcomes

Measure	*t*	Df	Sig.
Self-Perception Profile for Children	–.54	17	>.59
Empathy Questionnaire	.19	14	>.84
Locus of Control Scale	–1.3	21	>.22
Children's Depression Inventory	–.81	18	>.42

by the special education teacher, therapeutic riding instructor, and volunteers indicate positive changes did occur in the students after participation in the program. Four case studies were chosen to illustrate the positive effects the youths exhibited following the program.

The Victim

''V'' is a 10-year-old girl with Post Traumatic Stress Disorder (PTSD). Her background includes a family history of mental illness and emotional as well as physical abuse. She lives with her mother who displays sexual promiscuity. Her father has been absent most of her life. All her siblings have different fathers. A recent sexual assault along with her abusive childhood left ''V'' very anxious, distrustful, and fearful of men. She was paired with a female horse, ''Bailey,'' in Horse Power. During the program, ''V'' began to discuss issues of fatherhood in regards to her horse. She asked her teacher, ''Where is Bailey's dad?'' and wondered aloud if ''Bailey misses her dad.'' She talked out her personal worries of safety and trust to Bailey. She related to the fact that in the horse's world, brothers and sisters have different fathers just as in her family. She was able to relate so many aspects of her own life to Bailey's life, that in her teacher's words, ''she literally became Bailey''. Together with Bailey and her teacher, ''V'' was able to discuss her fears and anxieties. She opened up. She was able to smile again.

The Feral Child

''FC'' is an 11-year-old girl with the multiple diagnoses of Behavioral Disorder (BD) and Educational Mental Handicap (EMH) as well as a speech impediment. Her background includes sexual abuse, a low functioning mother, and a poverty-stricken family. ''FC'' had poor personal hygiene, coming to school with dirty clothes and unwashed hair. She would neither make eye contact nor address adults. Her behavior was difficult to manage. She would lie on the floor in defiance. In addition to her own conduct problems, ''FC'' would mimic the bad behaviors of other students. She was so out of control and wild that her teachers referred to her as the ''feral child''. Because of ''FC's'' history of sexual abuse, she was paired with a female volunteer in the Horse Power program. Her volunteer instructor noted after one session that ''FC'' related well to animals and showed a natural rapport with her horse. ''FC's'' lack of hygiene was addressed without embarrassment. She was taught how to groom ''Cameo'' and shown how to do the same with herself. She could not ride ''Cameo'' unless her hair was brushed and out of her eyes so that she could see. The discipline and regimen of Horse Power helped ''FC'' in controlling her own behavior. She needed to look at her instructor in the eyes and make contact in order to learn. Learning to ride instilled the confidence she was lacking. After completion of the nine-week program, ''FC'' had acquired enough social skills and improved her behavior so much that the day school's teachers had her repeat the program. At the end of one year, ''FC'' displayed enough progress and such a strong turnaround that she was allowed back into a traditional middle school. ''FC'' has grown from an animal-like, wild child to an adolescent who can successfully function in a mainstreamed classroom.

The Runaway

''R'' is a 13-year-old male, diagnosed with Attention Deficit Hyperactivity Disorder (ADHD). He read at a kindergarten level in the fifth grade. His hyperactivity was so severe that his teacher described his actions as ''spider-like'' because he could be everywhere at one time. He crawled on the floor and tried to climb on the walls. His conduct issues included a tendency towards pyromania. ''R'' dealt with problems by avoidance: He would panic and run away. He was paired with a male volunteer during the program and a horse named ''Dandy''. His volunteer had a ''laid back attitude''. ''R'' began to shadow his volunteer instructor throughout the EFL activities. He modeled the positive behaviors he witnessed. He began to slow down and learn. He learned well. He picked up the knowledge of saddling his horse and learning to ride ''Dandy'', a rather large horse. He understood and could name the parts of a horse. During his sessions at the ranch, he worked on building trust. He had to have trust in his instructor and his horse in order to ride. He found out that his teacher was always there for him and when he felt out of control, he could turn to her. The trust factor was transferred to his teacher. He no longer needed to run away.

The Boost Needed

''BN'' is a 10-year-old male with a Behavioral Disorder (BD). His IQ is in the average range and his teacher describes him as bright. He experiences situational depression because of his family environment. His father shows aggression and poor attitudes towards women. ''BN'' has an explosive temperament. He has physically assaulted his mother in the past. ''BN'' was paired with two female volunteers in Horse Power. Social skills and self-esteem were two areas where he needed particular attention. Throughout his interaction with the volunteer instructors and the horses, ''BN'' learned how to be ''up front''. Despite the negativity he often experienced at home, his parents did come out to the ranch and did offer encouragement. The confidence and personal esteem he lacked appeared to be boosted because of his experience in the program. ''BN'' was successfully mainstreamed into middle school. His teacher felt that he ''would have come into his own eventually'', but that Horse Power speeded up the process.

Discussion

In contrast to the existing literature (Gatty, 2001; Katcher & Wilkins, 1994), self-esteem did not increase after the intervention. These results were surprising given the promising findings of increases in both self-esteem and global self-worth found in a previous EFP program (MacDonald & Cappo, 2003). Observational data collected from the special education teacher and therapeutic riding instructor did emphasize positive changes in conduct and social acceptance, although the subscale measures did not reveal significant increases. A contributor to the lack of change in self-esteem may be the issue of esteem or self-worth with this population. The youths in this study have more severe disorders than those in previous studies. They are aware that they are in a special purpose day school because they were not able to learn in mainstreamed classrooms. Some students, when responding to questions on the

Harter Self-perception Profile dealing with schoolwork issues or behavior with classmates, made statements about themselves such as ''That's why I am here,'' or ''I am just a bad kid.'' It is possible that the self-esteem of these students is so low that repeated participation in the program could produce improved post-test results.

The Harter (1982) measure was a difficult measure to administer due to the low functioning IQ scores and several diagnoses of learning disabilities among the students. For example, the measure asks the child to choose whether he or she is more like the child described on the left side of the page or the child described on the right side of the page, designated by stick figures (one with a hat, the other without a hat). Next, the child is asked if the statement is ''really true'' or ''sort of true'' for them. The stick figures and the two-part answers confused or distracted many of the students. One participant responded to a question by saying, ''I don't like hats.'' A statement like this demonstrates the tendency of the youths to have literal interpretations of questions.

The lack of change in interpersonal empathy was unexpected, given the qualitative evidence that demonstrated several cases of improvement in empathy towards the horses. The qualitative evidence is consistent with Nebbe's (2003) review. A measurement on feelings of empathy towards animals, such as the Companion Animal Bonding Scale (Poresky, Hendrix, Mosier, & Samuelson, 1987) may have yielded different results. Surprisingly, two subscales of the Empathy Questionnaire used—(1) Empathetic Concern: Feelings of warmth and compassion for others and (2) Personal Distress: Feelings of anxiety and discomfort resulting from observing others unfortunate circumstances—did not show significant positive change. But, during the course of the program one of the volunteer's horses died and the participants of that nine-week session wrote letters of sympathy to the volunteer. They wrote letters filled with warmth, compassion, and feelings of distress over her loss (A. Stauffer, personal communication, July 17, 2003).

Post-test results that did not show increased feelings of internal locus of control were consistent with Bowers and MacDonald's (2001) pilot study. A credible explanation for the findings may lie in the home lives of the participants. Throughout the nine weeks of the program, many students experienced volatile changes in their family lives, which is unfortunately common to the youths enrolled at this school. Changes in the home life during the three years of research included changes in parental custody, placement in foster care, and the death of a parent. It is difficult for youths of this age to feel in control of their lives when instability in their home lives surrounds them.

The current study did not show self-reported feelings of depression to decrease significantly. This was disappointing given the results of the pilot study (Bowers & MacDonald, 2001) that did show significant decreases in depression. However, the participants in the present study were much younger and lower functioning than those in the pilot study. During post-testing evaluations at the school, many of the students expressed anger or frustration at the completion of the program. They missed participating in Horse Power. The issue of termination may have an impact on self-reported feelings of depression. It is plausible that a post-test for depression at a longer interval after the treatment would yield different results. Because of the termination issues found post-treatment, more emphasis was placed on the opportunity to repeat the program as a mentor for the next group coming into the program. Additionally, it is important to note that the youths in this study suffer from a situational type of depression due mostly to their home life situations.

The youths' feelings of loneliness did not decrease as was predicted to occur. However, an increase in loneliness, though not statistically significant, was found with the control group (the students awaiting treatment). It appears that loneliness is a factor in the children's lives.

Several reasons for the lack of statistical significance on the self-reporting measures appeared during the three-year evaluation. Foremost, the severe disorders of youths in this study make the evaluations more challenging than previous studies with at-risk adolescents. The majority of participants in this study are low functioning students, with IQ scores less than 100 (mean = 86) and learning disabilities. Many students had difficulty understanding the questions asked of them during testing. Despite reading questions aloud to the students and defining any new terms to them, many of the students appeared to have difficulties comprehending the questions.

A second reason for the unexpected results is that students at the alternative school are acclimated to psychological testing. Because of this frequency in testing, the students are adept at giving the most desired response to questions. Two measures in particular, The Children's Depression Inventory and Children's Loneliness Questionnaire often provoked the youths to change their answers, thus giving what appeared to be less than honest answers to the questions. Several students would begin to display disinterest or agitation to end the testing period. Additionally, the battery of measures may have been too long for the type of youths evaluated. In particular, children with ADHD (Attention Deficit Hyperactivity Disorder) would lose focus or become tired midway through the testing period. Consequently, there was a need to divide the pre- and/or post- testing into two sessions.

A prominent reason underlying the study's results is the duration of participation in the study. It may be unreasonable to expect a significant change in the nine-week period. This program should be considered for a longer time frame, perhaps even a full school year. A lack of funding often makes this unfeasible, however.

Finally, perhaps the most salient reason for the results lies in the extraneous variables encountered throughout the three-year evaluation. As mentioned previously, the disrupted family lives of the students in the special purpose day school make evaluating treatments a challenge. An important factor affecting test taking is the level of medication participants in this study take. Prescribed medication is a part of daily life for most children with SED. The youths have medication added, removed, or dosage changes frequently. The age of the participants is particularly meaningful (10–13 years) in regards to medication. During this period of rapid physical growth and hormone changes, medication levels are volatile.

Recommendations and Future Directions

Equine-facilitated psychotherapy and learning is still in its infancy. The current study, in conjunction with a multiple center experiment across the country, is to date one of the few published empirical studies of EFP/L with at-risk youths. The promising results of the pilot studies on EFP/L, together with the qualitative results from the current study, should add to the growing interest in this unique form of animal-assisted therapy.

The implementation and subsequent evaluation of a program as broad as Horse Power takes a commitment unlike any other AAT/L intervention. Those who are interested in further study or replication of the program can find additional infor-

mation from the North American Riding for the Handicapped Association (NARHA) and the Equine-Facilitated Mental Health Association (EFMHA).

There are several key factors that the researchers and the teachers involved in the current study feel are crucial to the success of replicated programs. One is the age of youths with SED. The ages of the children in this study (10–13 years) appear to be the critical time for an intervention such as Horse Power. It is a prime time because they are old enough to participate, yet not past the stage of openness to learn. A second factor is the duration of time in the program. It is essential that students participate in the program more than one time, particularly with a group as severe as the group in this study. More than two sessions per week would possibly improve results by adding consistency and reinforcement. Anyone wishing to work with SED youths must be aware that they will need to adhere to a set schedule to comply with the needs of the children. Deviating from the routine will not work and continual follow-up is necessary.

Separation issues need to be addressed to prevent participants from feeling frustrated or lonely because they miss the ranch experience. Students who demonstrate positive behaviors should be asked to serve as mentors to the next group. The current program presents the participants with photos of their experience to provide them with a lasting memory of their time in Horse Power.

The success of an EFL program is contingent on several factors. To implement a thematic approach to learning by using EFL, the special education teacher must have considerable knowledge and a background with horses. He or she must have a love for EFL in order to carry out both the classroom and the experiential activity. A special education student's academic performance will be positively affected when they can be involved in the process itself. A successful classroom program must have the support of the school administration. Communication between special education teachers, school psychologists, therapeutic riding instructors, and volunteers is critical. The student's teacher must be an active participant in order to be a positive role model. The last and most important factor in a successful program is the safety and confidentiality of the children involved. Strict adherence to the standards and practices for certification and training through NARHA or EFMHA must be upheld.

Therapists or teachers interested in EFP/L should acknowledge foremost that the program is not a riding class. It is a therapeutic approach aimed at teaching life skills to children considered difficult to reach. In this approach, the horse is a vehicle that enables the youths to open up and to verbalize their problems and fears. The close supervision and mentoring of the volunteer staff establishes rapport and trust that is often lacking in the at-risk youth's world. A positive adult role model taking an active interest in a child who has known abuse, neglect, and the stigma of the label ''bad kid'' can be the turning point in his or her young life. Children, by nature, learn more effectively when they are interested in the subject. By incorporating the equine theme into the classroom, the students become active participants in their education. For perhaps the first time in their lives, they have knowledge of a subject that they can pass along as well as show pride in their academic success. The purpose of the equine-facilitated learning program evaluated in this study is to teach life skills, both social and individual. Youths with severe emotional disorders have difficulty finding a place in society. It is hoped that the life skills gathered through participation in Horse Power will carry over into their daily lives and help them in finding their place.

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