

**The Effectiveness of Equine-Facilitated  
Therapy with At-Risk Adolescents: A  
Summary of Empirical Research Across  
Multiple Centers and Programs**

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# Introduction

- Children with learning disabilities, conduct problems, or clinical diagnoses are “at risk” for the development of severe emotional disorders in adolescence and psychopathology in adulthood.
- A child who shows signs of problems may not cooperate with traditional forms of therapy.
- Many “at risk” adolescents view therapists, teachers, or adults in general with mistrust or apprehension.
- Alternative methods of therapy may help meet the needs of these youth.
- The present study explores the use of equines in a therapeutic role with “at risk” adolescents.

# Definitions

- **“At risk” Adolescents.** Troubled youth at risk for various negative outcomes, ranging from mild to severe. Examples include: Truancy, drug or alcohol abuse, teen pregnancy, suicide, and emotional &/or psychological disturbances.
- **EFT – Equine-Facilitated Therapy.** Youth work with the horse as a partner. Trained therapists are present and involved in the sessions.
- **EFL – Equine-Facilitated Learning.** Youth work with the horse as a partner. Therapists are not always present (a teacher or other authority figure is present). Youth may or may not work with therapists outside of the sessions.

# General Procedure

- A total of five different programs were evaluated.
- Programs were evaluated “as is” – with no changes or interferences from the evaluators.
- The program coordinators simply added a pre-test that was administered before the sessions began and a post-test after the sessions ended.
- Each program chose from a number of constructs to measure, depending on the issues they were working on.

# Constructs & Measures

- The constructs included: self-esteem, depression, locus of control, loneliness, empathy and aggression.
- The specific measures from which each program selected included:
  - Self-Perception Profile for Children (Harter, 1982).
  - Self-Perception Profile for Adolescents (Harter, 1998).
  - Self-Esteem Index (SEI; Brown & Alexander, 1991).
  - Empathy Questionnaire (Davis, 1980).

# Constructs & Measures, cont.

- Locus of Control Scale (LOC; Norwicki & Strickland, 1973).
  - Children's Depression Inventory (CDI, Kovaks, 1981).
  - Children's Loneliness Questionnaire (CLQ; Asher, Hymel, & Renshaw, 1984).
  - Aggression Questionnaire (AQ; Buss & Perry, 1992).
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- *Note: some of the measures were adapted for children or other slight modifications were made. Additional information about the measures and/or copies are available upon request.*

# Participants

- Participants were 126 youth
  - Age range: 8 to 17 years
  - Mean age: 13 years
  - 101 males
  - 25 females

# The Process

- As part of the EFT or EFL process, the youth is paired with a horse and trained volunteers at the introduction of the session. All sessions are facilitated by a credentialed equine professional.
- Each program was designed to teach skills such as cooperation, trust, and responsibility with the goal of transferring these skills into their everyday lives.
- The youth works with a horse as a partner throughout the length of the EFT or EFL session.
- The rationale behind pairing one horse with one child is to form a feeling of ownership and connection between the youth and the horse.

# The Programs

- Helping Hands Therapeutic Riding Center (formerly Jackson County 4-H Therapeutic Program)
  - NARHA certified center
  - Located in Jackson County, Missouri
- Horsepower Therapeutic Learning Center
  - NARHA premier certified operating center
  - Located in Colfax, North Carolina

# The Programs, continued

- Minnesota Linking Youth, Nature & Critters, Inc. (MN LYNC)
  - Nonprofit specializing in AAT programs, education, and consultation. NARHA certified.
  - Located in St. Paul, Minnesota
- Pony Farm
  - NARHA certified center
  - Located in Temple, New Hampshire

# The Programs, continued

- Serenata Farms School of Equestrian Arts (SEA)
  - Nonprofit specializing in integrated therapy treatment for people with physical, cognitive or emotional disabilities.
  - Located in Big Springs, Kansas

# The Programs, continued

- Capital City School
  - Alternative day school for grades 5-12
  - A 3:1 student teacher ratio
  - Located in Topeka, Kansas
  - Part of USD 501 (public)

# Group Results

- Generally, each program lasted from 6 to 14 weeks, with sessions ranging from 1 to just over 2 hours in length.
- Some programs met once a week while others met twice a week.
- Each program served individuals with a wide variety of diagnoses/issues/problems and a wide variety of treatment(s) outside of the equine sessions.
- When all the programs were grouped together, no statistically significant differences between any of the constructs included in the pre- and post-tests were found.

# Individual Results - Helping Hands Therapeutic Riding Center

- EFT Program
- N = 13; referred by Cornerstones of Care, a consortium of residential treatment centers.
- Ages 13 – 16; mean = 14.386
- 14 week program; 1 day a week with 1 hour sessions.
- Constructs evaluated: Locus of control, aggression, and self-esteem (SEI & Harter).
- It was hypothesized that self reports of self-esteem and internal locus of control would increase and aggression would decrease following the program.

# Individual Results - Helping Hands Therapeutic Riding Center

- The locus of control hypothesis was supported:
  - Higher scores on the LOC indicate feelings of less control.
  - LOC **pre-test mean = 63.28** and **post-test mean = 59.57** ( $t = 2.70, p < .04$ ).

# Individual Results - Helping Hands Therapeutic Riding Center

- The self-esteem hypothesis was supported, yielding significant results from both the SEI and Harter self-esteem scales:
  - The SEI showed statistically significant increases in the total score and peer popularity subscales.
    - SEI total **pre-test mean = 236.14** and **post-test mean = 253.15** ( $t = -3.45, p < .01$ ).
    - Peer popularity subscale **pre-test mean = 63.86** and **post-test mean = 68.86** ( $t = -2.39, p < .05$ ).

# Individual Results - Helping Hands Therapeutic Riding Center

- Harter's scale also showed statistically significant increases in the global self-worth subscale as well as three other subscales.
  - Global self-worth subscale **pre-test mean = 2.74** and **post-test mean = 3.31** ( $t = -2.90, p < .03$ ).
  - Scholastic competence subscale **pre-test mean = 2.62** and **post-test mean = 3.29** ( $t = -2.96, p < .03$ ).
  - Social acceptance subscale **pre-test mean = 3.14** and **post-test mean = 3.54** ( $t = -2.65, p < .04$ ).
  - Conduct subscale **pre-test mean = 1.91** and **post-test mean = 2.71** ( $t = -2.65, p < .04$ ).

# Individual Results - Helping Hands Therapeutic Riding Center

- The results from this center indicate an increase in participants' feelings of self-esteem, as measured by two different questionnaires.
- Both of these measures indicated an increase in reports of social acceptance or "peer popularity" suggesting that the program elicited bonding and friendships between the participants.
- The outcome of decreased feelings of external locus of control (and thus increased feelings of control of one's destiny) is an exciting finding. When adolescents feel more in control of their lives, it is expected that they will take more responsibility for their behavior, successes, and failures.

# Individual Results – Horsepower Therapeutic Learning Center

- EFT Program
- N = 20; referred by local nonprofits (Youth Focus & One Step Further) and programs for juvenile offenders (Guilford County Teen Court Program & Juvenile Community Restitution Program).
- Ages 11-17; mean = 14.07
- 6 week program; 1 day a week with 2 hour sessions.
- Constructs evaluated: Locus of control, aggression, and self-esteem (SEI & Harter).

# Individual Results – Horsepower Therapeutic Learning Center

- It was hypothesized that self reports of self-esteem and internal locus of control would increase and aggression would decrease following the program.
- The aggression hypothesis was supported:
  - The aggression questionnaire’s hostility subscale and global score showed statistically significant decreases.
    - Hostility **pre-test mean = 18.60** and **post-test mean = 13.13** ( $t = 4.79, p < .0001$ ).
    - Global aggression **pre-test mean = 50.13** and **post-test mean = 41.80** ( $t = 3.06, p < .001$ ).

# Individual Results – Horsepower Therapeutic Learning Center

- In addition, even though the differences lacked statistical significance, all of the subscales of the aggression questionnaire showed decreased means following the program.
  - Physical aggression subscale: Pre-test mean = 20.20; Post-test mean = 18.40.
  - Verbal aggression subscale: Pre-test mean = 11.33; Post-test mean = 10.27.
- It appears that the program contributed to a decrease in aggressive feelings, which will hopefully be carried over into actions.

# Individual Results – MN LYNC

- EFT Program
- N = 10; referred by Hennepin County Children and Family Services
- Ages 13-17, mean age 15.77
- 12 week program, 2 days a week with 2 hour sessions.
- Constructs evaluated: Locus of control, depression, and self-esteem (SEI).
- It was hypothesized that self reports of self-esteem and internal locus of control would increase and depression would decrease following the program.
- No statistically significant results were found.

# Individual Results – Pony Farm

- EFT Program
- N = 33; referred mainly by schools and residential treatment centers.
- Ages 8 – 16; mean = 12
- 10 week program, 1 day a week with 2 hour 15 minute sessions.
- Constructs evaluated: Self-esteem & Aggression (measured by the SEI & AQ).
- It was hypothesized that self reports of self-esteem would increase and aggression would decrease following the program.

# Individual Results – Pony Farm

- Contrary to expectations, reports of aggression actually increased following the program:
  - Two subscales of the aggression questionnaire showed statistically significant increases.
    - Hostility **pre-test score = 13.11** and **post-test score = 17.44** ( $t = -9.83, p < .0001$ ).
    - Physical aggression **pre-test score = 17.66** and **post-test score = 19.78** ( $t = -2.8, p < .02$ ).
- Termination Issues?

# Individual Results – Serenata Farms School of Equestrian Arts

- EFL Program
- N = 14 (without Capital City); Referred by several USD 501 middle schools.
- Ages 8 – 14; Mean = 11.42
- 9 week program, 1 day a week with 1 ½ hour sessions.
- Two children were paired to a horse (due to cost issues and a shortage of volunteers).

# Individual Results – Serenata Farms School of Equestrian Arts

- Constructs evaluated: Locus of control, depression, aggression and self-esteem (measured by SEI & Harter).
- It was hypothesized that self reports of internal locus of control and self-esteem would increase and depression & aggression would decrease following the program.
- No statistically significant results were found.

# Individual Results – Capital City School

- Two years of Capital City's program were conducted at Serenata Farms. The third year was conducted at R & D Ranch in Topeka, KS.
- EFL Program
- N = 36 (28 unique participants; some repeats. Not all students were testable); Referred by special education teachers and the school psychologist.
- Ages 10 - 13; Mean = 11.67
- 9 week program, 2 days a week with 1 1/2 hour sessions.
- A control group consisted of students waiting to participate.

# Individual Results – Capital City School

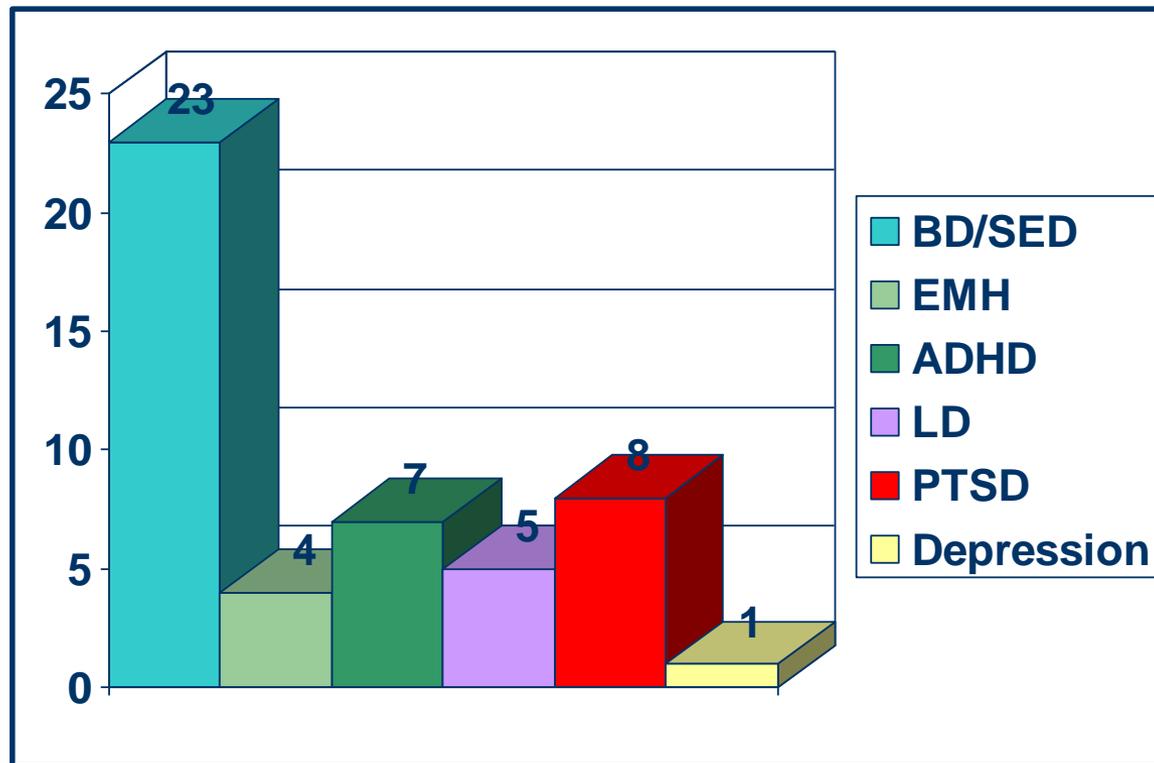
- Constructs evaluated: Locus of control, empathy, loneliness, depression, aggression and self-esteem (measured by SEI & Harter).
- It was hypothesized that self reports of internal locus of control, empathy, and self-esteem would increase and loneliness, depression & aggression would decrease following the program.
- No statistically significant results were found for the experimental or control groups.
- Despite the lack of statistically significant results, the teachers and volunteers reported greatly improved attitudes and behaviors.

# Additional Information – Capital City School

- This program was unique – “Horse Power” was incorporated into the classroom as an academic subject. All classes (e.g., reading, math, social studies) had an equine theme during the semester of participation.
- Most of the participants live in families with low socioeconomic support.
- The youths in this study suffer from severe behavioral or conduct disorders and/or learning disabilities.
- Many of the participants have IQ scores below the average range. The range for full IQ score was 50 – 138. The average IQ was 86 (84 with the gifted “outlier” removed).

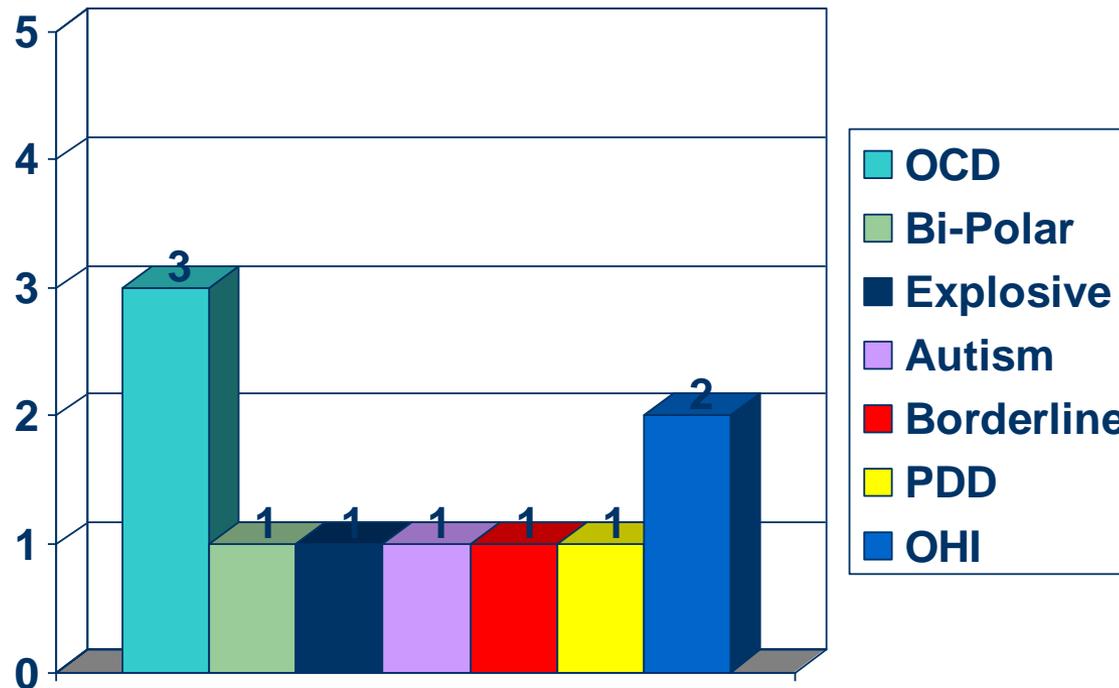
# Behavior/Diagnostic Labels of Participants

N = 28 \*note that each student has multiple diagnoses

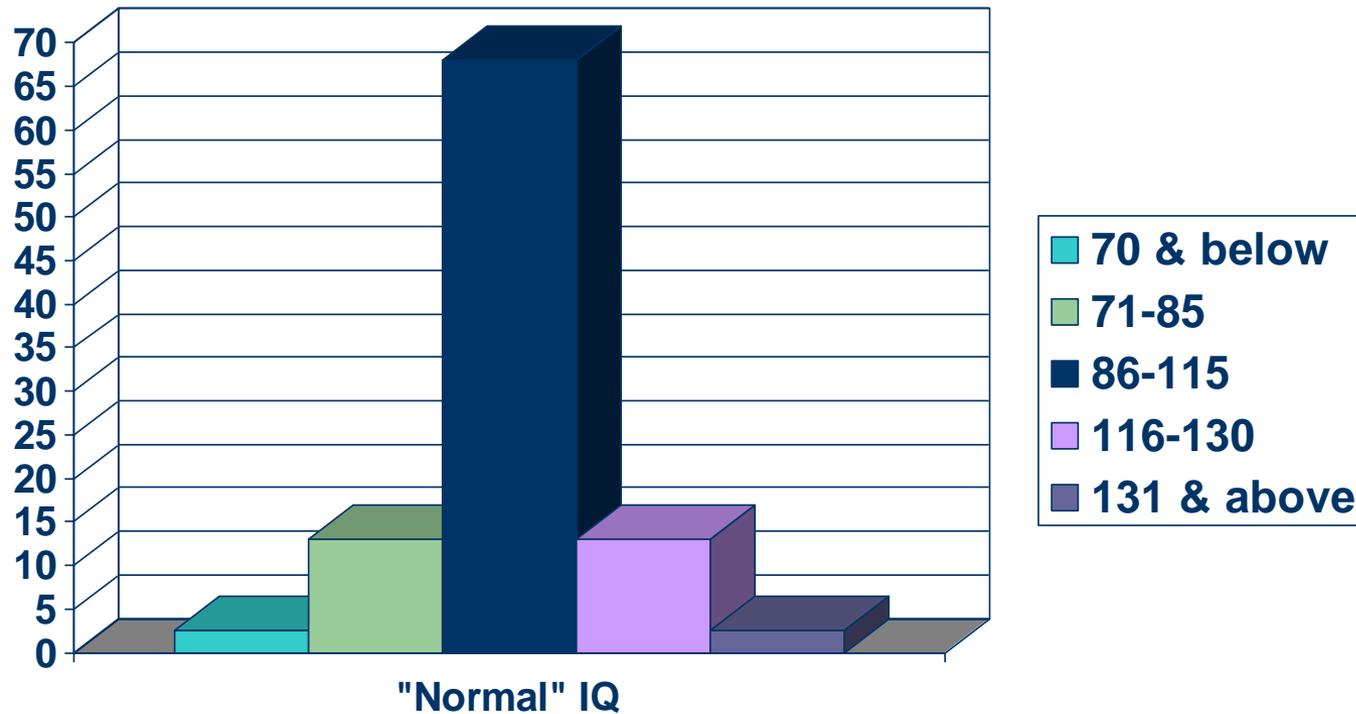


# Behavior/Diagnostic Labels of Participants (cont.)

N = 28 \*note that each student has multiple diagnoses

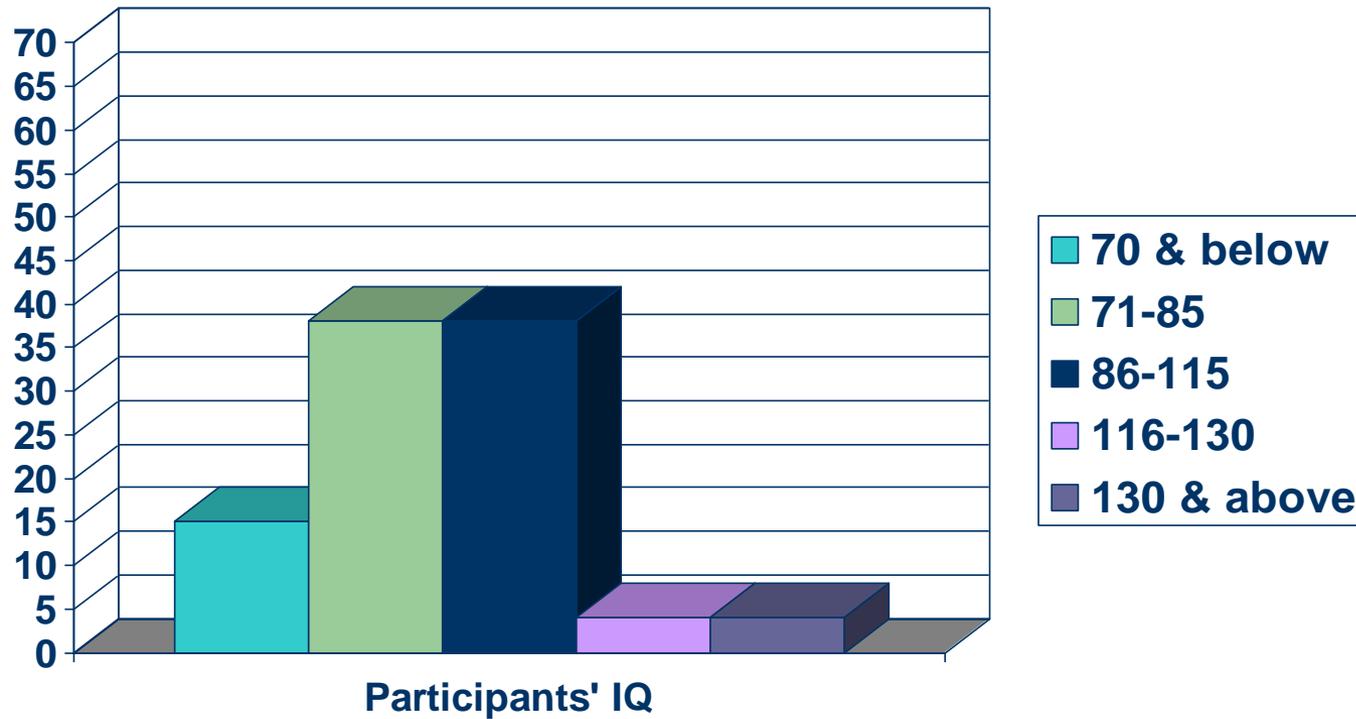


# Normal IQ Distribution



# IQ Scores of Participants

N = 26\*



# Qualitative Results – Case Studies from Capital City School

- Case studies compiled from interviews and observations indicated positive changes did occur in the students after participation in the program.
- *Please note that the photos in slides are not necessarily of the child being discussed.*

# The Victim



- A ten-year-old girl with Post Traumatic Stress Disorder (PTSD).
- All of her siblings have different fathers.
- A recent sexual assault along with an abusive childhood left her very anxious, distrustful, and fearful of men.
- Together with “Bailey” and her teacher, she was able to discuss her fears and anxieties. She opened up and was able to smile again.

# The Feral Child

- An eleven-year old girl with the multiple diagnoses of BD and EMH.
- She would neither make eye contact nor address adults. She was so out of control that her teachers referred to her as the “feral child”.
- The discipline and regimen of Horse Power helped “FC” control her own behavior.
- She has grown from a wild child to an adolescent who can successfully function in a mainstreamed classroom.



# The Runaway



- A 13-year-old male, diagnosed with ADHD who dealt with problems by avoidance; He would panic and run away.
- 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 Boost Needed

- A 10-year old male with BD & an explosive temperament. He has physically assaulted his mother in the past.
- Social skills and self-esteem were two areas where he needed particular attention.
- He was successfully mainstreamed into middle school. His teacher felt “Horse Power” speeded up the process”.



# Discussion – Capital City School

- The lack of significant quantitative results may be due to several issues:
  - The severity of the disorders, in particular ADHD.
  - The low functioning I.Q. scores and learning disabilities among the students.
  - Separation issues.
  - Reached the “lower limit” of effectiveness with this type of therapy/program.

# Discussion – Capital City School

- The home lives of the participants: Changes in parental custody, placement in foster care, and the death of a parent were some of the challenges these children experienced during the three years.
- The level of medication participants in this study take. During this period of rapid physical growth and hormone changes (10-13 yrs.) medication levels are volatile.

# Lessons Learned – Capital City School

- 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.
- Students need to participate in the program more than one time, particularly with a group as severe as the group in this study.
- 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.
- 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.

# Lessons Learned – Capital City School

- The underlying principal of the EFL program evaluated in this study was to teach life skills to the participants.
- 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 find their place.



# Overall Obstacles & Lessons Learned

- Anyone wishing to conduct multi-center, large sample research on EFT or EFL programs may face many problems.
  - COST!
  - Hire a reliable, PAID Project Coordinator
  - Training “testers” long distance
  - Differences in the programs may be slight or significant

# Information

- North American Riding for the Handicapped Association (NARHA)
  - [www.narha.org](http://www.narha.org) or (800)369-7433
- Equine-Facilitated Mental Health Association (EFMHA).
  - <http://www.narha.org/sec%5Fefmha/>

# Program Contact Information

- Helping Hands Therapeutic Riding Center
  - 22601 E 27<sup>th</sup> St. South, Independence, MO 64015
  - (816) 810-4578
  - [www.helpinghandstherapeutic.org](http://www.helpinghandstherapeutic.org)
  - [J\\_cappo@swbell.net](mailto:J_cappo@swbell.net)

# Program Contact Information

- Horsepower Therapeutic Learning Center
  - 8001 Leabourne Road, Colfax, NC 27235
  - (336) 931-1424
  - [www.horsepower.org](http://www.horsepower.org)
  - [info@horsepower.org](mailto:info@horsepower.org)

# Program Contact Information

- MN LYNC
  - 1661 Watson Avenue, St. Paul, MN 55116
  - (651) 699-9558 or [mnlync@aol.com](mailto:mnlync@aol.com)
  - [www.mnlync.org](http://www.mnlync.org)
  - AAT and EFT Instruction manuals are available for purchase.

# Program Contact Information

- Pony Farm
  - 13 Pony Farm Lane, Temple, NH 03084
  - [www.ponyfarm.com](http://www.ponyfarm.com)
  - (603) 654-6308
  - [Kathywile@horse-power.org](mailto:Kathywile@horse-power.org)

# Program Contact Information

- Serenata Farms
  - 1895 E 56 Road at Big Springs  
Lecompton, Kansas 66050  
(785) 887-6441  
(785) 887-6660
  - [www.serenata.org](http://www.serenata.org)
  - [sfsea@att.net](mailto:sfsea@att.net)

# Program Contact Information

- Capital City School
  - 2828 SW Sixth St  
Topeka, KS 66606  
Phone: (785) 575-6910
  - Teacher: Megan Taylor  
([terrilltaylor@hotmail.com](mailto:terrilltaylor@hotmail.com))
  - Horse Power Instructor: Sherry Meier  
([horsepowerks@hotmail.com](mailto:horsepowerks@hotmail.com))

# References

- Asher, S., Hymel, S., & Renshaw, P. (1984). Loneliness in children. *Child Development, 55*, 1456-1464.
- Bowers, M.J. & MacDonald, P.M. (2001). The effectiveness of equine-facilitated psychotherapy with at-risk adolescents: A pilot study. *Journal of Psychology and Behavioral Sciences, 15*, 62-76.
- Brown, L. & Alexander, J. (1991). *Self Esteem Index Examiner's Manual*. Pro-ed: Austin, TX.
- Buss, A.H. & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology, 63*, 452-459.
- Davis, M.H. (1980). Multidimensional approach to individual differences in empathy. *Catalogue of Selected Documents in Psychology, 10*(85), 177-180.

# References

- Harter, S. (1982). The perceived competence scale for children. *Child Development, 53*, 87-97.
- Harter, S. (1998). The self-perception profile for adolescents. Unpublished manual. University of Denver.
- Kovacs, M. (1981). The children's depression inventory: A self-rated depression scale for school-age youngsters. Unpublished manuscript, University of Pittsburgh School of Medicine.
- Nowicki, S., Jr., & Strickland, B.R. (1973). A locus of control scale for children. *Journal of Consulting and Clinical Psychology, 40*, 148-154.

# Questions?

