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Not Just Horsing Around: The Impact of Equine-Assisted Learning on Levels of Hope and Depression in At-Risk Adolescents

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Abstract Equine-assisted learning (EAL) is an experiential modality which utilizes horses to provide a unique learning experience for personal growth. Research by Damon et al. (Appl Dev Sci 7:119–128, 2003) suggests a positive relationship between hope and positive developmental trajectories. Hagen et al. (Am J Orthopsychiatr 75:211–219, 2005) showed hope to be a protective factor associated with adaptive functioning in at-risk youth. Ashby et al. (J Couns Dev 89:131–139, 2011) found a significant inverse relationship between hope and depression: as hope increases, depression decreases. The current study investigates the impact of a non-riding EAL curriculum entitled L.A.S.S.O. (Leading Adolescents to Successful School Outcomes) on levels of hope and depression in at-risk youth. The study uses an experimental design with longitudinal, repeated measures. Participants were randomly assigned to treatment and control groups. Participants in the treatment received 5 weeks of EAL, while participants in the control group received treatment as usual. Repeated measures ANOVA of participants' levels of hope and depression showed statistically significant improvements in the treatment group as compared with the control group. Even a brief (5-week) intervention of EAL had a positive impact on the lives and attitudes of at-risk adolescents, with increased levels of hope and decreased levels of depression.

Keywords Adolescent · At-risk · Equine-assisted · Hope · Depression

At-Risk Adolescents

There is little doubt that the horse has profoundly impacted the history and well being of mankind. Horses have plowed fields, carried soldiers to battle, transported goods to markets, and given people of every status the ability to travel more quickly and easily. In more recent decades, horses are being used to help people with a wide range of emotional difficulties. No consensus has been reached as to one proper term to be used when equines are involved in mental health treatment. In this study, the term equine-assisted intervention (EAI) is being used in this study as a universal term to include all interventions that involve the use of a horse in order to benefit the mental or emotional well being of a human participant. The literature review includes studies in which riding was a component as well as studies in which riding was not included. The current study utilizes a non-riding intervention.

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Introduction

Research indicates that therapy involving horses may yield a variety of psychotherapeutic benefits, including the following: self-confidence, self-concept, communication, trust, perspective, anxiety reduction, decreased isolation, self-acceptance, impulse modulation, assertiveness, boundaries,

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creative freedom, and spiritual growth (Marx and Cumella 2003; Ewing et al. 2007; Trotter et al. 2008; Bass et al. 2009).

The benefits of equine-assisted interventions (EAI) have been reported in a variety of clinical groups. Tyler (1994) discussed the use of EAI in the treatment of clients with emotional problems, particularly adolescents. McCormick and McCormick (1997) reported on their work implementing EAI with adolescents. Moore et al. (2009) used EAI with clients attempting to overcome substance abuse. Others have expressed support for the use of EAI with behavioral issues, attention deficit disorder, eating disorders, abuse issues, depression, anxiety, relationship problems, and communication needs (Carpenter 1997; Katcher and Wilkins 1998).

Chandler (2005) utilized EAI with male and female juvenile offenders and found that the participants displayed increases in positive behaviors such as communication skills, support and encouragement for others, and increased desire to complete a task. She also noted a reduction or elimination of negative behaviors such as fear and manipulation. Other benefits seen by Chandler included greater courage, stress management, and anxiety-reduction skills.

Trotter et al. (2008) investigated the efficacy of group EAI with at-risk adolescents and found that at-risk youth who received EAI showed statistically significant improvement in seventeen behavior areas whereas students who received classroom-based counseling showed improvement in only five areas.

Kersten and Thomas (2004) posit that the challenge of controlling the movement of a 1,000-pound creature requires concentration, creativity, and resourcefulness and that success in doing so improves self-esteem, confidence, communication skills, trust, and boundaries. A recurrent theme in the literature seems to indicate that the more difficult a client is to work with in traditional counseling, the more likely it is that that client will do well in EAI (Trotter et al. 2008).

Hope and Depression

Hope is a promising positive trait. For the past 50 years, the topic of hope and the impact it has on humans has surfaced repeatedly in a variety of fields, including medicine, psychiatry, psychology and education. Considerable research has been conducted to investigate the impact of hope in several areas of life. Hope has been operationalized in Snyder's hope theory (Snyder, Hoza, et al. 1997). Hope has been found to be positively associated with life satisfaction (Bailey and Snyder 2007), and negatively associated with depression (Chang 2003). Bailey et al. (2007) found that hope was generally a better predictor of psychological well being than optimism.

Depression is a mood disorder that has been carefully defined in the *Diagnostic and Statistical Manual of Mental Disorders-IV* (American Psychiatric Association 2000). Depression is associated with significant functional impairment and reduced quality of life. The criteria for major depressive disorder in youths include a combination of prolonged dissatisfaction, anxiety, restlessness, or irritability along with other symptoms such as irregularity of sleep patterns, eating, motor behavior, thought, and self-esteem. Depression is also frequently present at levels that are subclinical. Harrington and Clark (1998) propose that it may be better to consider depression as occurring on a continuum. They state that it is not clear how much depression can be considered "normal," and even mild depression is associated with problems in functioning.

Hope has been shown to have positive effects on depression. Researchers have reported a significant inverse relationship between hope and depression: as hope increases, depression decreases (Ashby et al. 2011; Carifio and Rhodes 2002). In a study by Arnau, Rosen, Finch, et al. (Arnau et al. 2007) hope was found to be a protective factor that had at least a small effect in reducing the severity of depression symptoms.

At-Risk Adolescents

Adolescence is a particularly difficult stage of life with rapid change resulting in increased potential for both positive and negative outcomes (Eccles et al. 1993). According to Schmid et al. (2011), "The specific path taken by a youth is impacted by both individual characteristics (e.g., aspirations, hopes, and cognitive and behavioral skills) and by contextual influences found in families, schools, peer groups, communities, and the vicissitudes of their historical era" (p. 45).

The term, "at-risk" has been used in many contexts with a variety of meanings. Morris (2000) describes risk factors as low achievement, retention in grade, behavior problems, poor attendance, low socioeconomic status, and attendance at schools with large numbers of poor students" (p. 4). For the purposes of this study, students who are "at-risk" are students who meet one or more of the Texas Education Association's 13 criteria that place a student at-risk (Texas Education Agency 2009). These criteria are listed in "Appendix".

Researchers have begun to investigate the importance of hope in adolescence. Preliminary findings indicate that high levels of hope in school-age students correlate with self-esteem, optimism, positive social interactions, and academic achievement (Snyder et al. 1997, 1997). Damon et al. (2003) suggest a positive relationship between hope and positive developmental trajectories.

Researchers and mental health practitioners have increasingly emphasized the need to focus on human strengths and positive assets rather than focusing on stressors and potential negative outcomes (Cowen 1991; Johnson et al. 1999). Dryfoos (2000) found that successful programs for adolescents and their families emphasize optimism and hope. The construct of hope is believed to be important in understanding how at-risk youth learn to deal with stressors, resist developing problem behaviors, and work productively towards goals (Snyder 1994). Research has shown hope to be a protective factor associated with adaptive functioning in at-risk youth (Hagen et al. 2005; Valle et al. 2006).

The current study is of particular importance for a number of reasons. Perhaps most importantly, it fills a gap in the literature related to EAIs. Most of the research on this topic is qualitative or anecdotal in nature and limited. To date, no random-assignment, experimental research has been published on this topic. Another reason why this study is of great importance is that EAIs are costly. Practitioners interested in positively impacting at-risk youth need to be well-informed and able to weigh the costs along with the potential benefits. The Trotter et al. (2008) quantitative study used a 12-week intervention of EAI with at-risk youth. The current study has shortened the time frame down to 5 weeks, which allows for a significant reduction in program costs. Clearly, interventions which instill hope and reduce depression in at-risk youth are worthwhile endeavors and practitioners are in need of quality research upon which to base program selections.

This study investigates how an intervention which utilizes equine-assisted learning (EAL) impacted levels of hope and depression in participants. Prior research has indicated positive outcomes for participants involved in EAI so researchers anticipated positive outcomes for participants of this study as well. For the purposes of this study, the term EAL is used because a curriculum with specific learning goals was used.

Methods

Trial Design

The current study uses a parallel trial design with a 1:1 allocation ratio treatment to control group. Only participants who met one or more of the criteria of the Texas Education Association's definition of "at-risk" were invited to be a part of the study. Participants whose parents or guardians completed all initial releases and demographic information were enrolled in the study. Each participant was assigned a five-digit number which was used to protect their identity as they completed the surveys. These numbers were also used by the primary investigator to randomly assign participants via a lottery system to either the treatment group or the control group with attempts made to keep both group sizes equal in number. Participants of the experimental group received 5 weeks of EAL in addition to the regularly provided services, while participants of the control group received treatment as usual (TAU), which was limited to the regularly provided services. In order to avoid any negative feelings related to not being in the treatment group, participants in the control group were offered 5 weeks of EAL after the experimental group completed their course of treatment. Data was collected from the participants at the school during regular school hours, with researchers dropping off the surveys in the morning and picking them up after school. To protect participants' privacy, participants were provided with envelopes in which to seal their responses.

The curriculum used in the intervention is entitled Project L.A.S.S.O. (Leading Adolescents to Successful School Outcomes) (Frederick 2011). The first session began with student observations of the horses. Students voiced their impressions and chose names for the horses. Topics of discussion included the possible relationships between the horses, the why's of their interactions, how horses communicate, and how to stay safe around the horses. In the second session, the students were told to catch the horses and halter them. Facilitators deliberately selected horses that vary in their ease of being caught. Consistently, two of three horses were caught and one horse was not. Processing included discussion of techniques participants tried, which seemed most effective and why, which participants persisted, and which gave up and why, and what the experience was like for them.

The themes of the next three activities were "life's obstacles," "vulnerabilities," and "achieving goals." Discussions involved what obstacles we face, what helps, what motivates us, how we protect ourselves when we feel vulnerable, how we stay safe, whether or not we take advantage of the resources available, asking for help, competition versus cooperation, and so on.

Participants

The participants in this study were middle or high school students at a charter school in central Texas. The program was advertised through the school faculty and staff, as well as the primary investigator, who met with qualified students and passed out the enrollment packets and information. Participants were randomly assigned to either the experimental or control conditions. In order to avoid any disappointment which may impact results, and in fairness to all participants, those who were assigned to the control conditions, had the opportunity to participate in EAL the following semester.

Sex

Twenty-six participants were enrolled in the program. Participants included nine males and 17 females. Sample size was determined by the number who volunteered to participate. The numbers in each group were as equal and balanced as possible. See Table 1 below for the breakdown of participant ages in the treatment and control groups.

Ethnicity

Participant ethnicity included 11 white, 7 black, 2 Hispanic, and 6 participants who identified "Other" as their ethnicity. Participants in the treatment group included 10 females and 4 males. Participants in the control group included 7 females and 5 males.

At-Risk Qualifier

Participants all met at least one of the Texas Education Agency (2009) criteria that placed them at risk. Eight participants met the criteria of not having advanced from one grade level to the next for one or more school years; eleven participants did not maintain an average equivalent to 70 on a scale of 100 in two or more subjects in the foundation curriculum; five participants did not perform satisfactorily on an assessment instrument administered to the student under TEC Subchapter B, Chapter 39; and two participants were pregnant or a parent.

A power analysis was conducted with an alpha level of .05 and an effect size of .25. With a sample size of 26, two groups, six measurements, and a correlation among repeated measures of .50, power was calculated as .749. According to Faul et al. (2009), an effect size of .25 is a medium effect size.

Protection of Subjects

All appropriate consents, Institutional Review Board, and Institutional Animal Care and Use Committee approvals were obtained. Because the participants are minors, risks involved in participation were clearly stated and parental permission was obtained for all participants.

Precautions were taken to protect participants as much as possible. Several steps were taken to minimize risks to participants. Limiting all activities to non-riding activities minimized risk. An equine professional, who is familiar with horse behaviors, was present during all EAL sessions. Potential risk of emotional discomfort was comparable to the discomfort that might be experienced in any form of counseling or activity that enhances self-awareness. Participants were fully aware of their right to remove themselves from this study at any point should they feel they cannot or should not continue in the study.

Measures

The variables observed and measured were levels of hope and depression as measured by the *Adolescent Domain-Specific Hope Scale* (ADSHS; Frederick 2011) and the *Major Depression Inventory* (MDI; Bech 1998). Measurements were taken both pre- and post-intervention as well as at four points during the intervention. In order to compare outcomes, comparison of paired samples *t*-tests and analysis of variance (ANOVA) were performed. Due to violations of statistical assumptions, non-parametric tests were also performed and are reported.

ADSHS

The ADSHS (Frederick 2011) is a 37-item self-report measure of hope in four domains—Social Relationships, Academics, Outside School Activities, and Family Relationships. The ADSHS is a four-point scale with the following choices: (1) Definitely False; (2) Somewhat False; (3) Somewhat True; and (4) Definitely True. Analysis of the ADSHS items produced a Cronbach's alpha of .93 for the overall scale in a pilot study. Test–Retest correlations at each data collection point in the study were calculated. All correlations are reported using Pearson's *r*. The correlation coefficients obtained at each data collection point are reported in Table 2.

MDI

The MDI (Bech 1998) is a 12-item self-report measure of the presence and severity of depressive-type symptoms. The MDI consists of a six-point scale for each item. The items of the MDI correspond to ten symptoms of depression identified in the DSM-IV major depression symptoms. Individual items measure how frequently the symptoms have been present (0 = not at all, and 5 = all the time). The reliability and validity of MDI scores have been demonstrated in a number of studies described by Bech

Table 1 Participant ages

Age	Number in treatment	Number in control
11	1	0
12	3	2
13	3	4
14	3	3
15	2	3
16	1	0
17	1	0

Table 2 Test-retest correlation coefficients of hope

Category	Time 1	Time 2	Time 3	Time 4	Time 5	Time 6
Time 1	1.000	.879**	.690**	.698**	.606**	.591**
Time 2	.879**	1.000	.771**	.808**	.689**	.733**
Time 3	.690**	.771**	1.000	.901**	.887**	.865**
Time 4	.698**	.808**	.901**	1.000	.952**	.941**
Time 5	.606**	.689**	.887**	.952**	1.000	.932**
Time 6	.591**	.733**	.865**	.941**	.932**	1.000

* $p < .05$, ** $p < .01$

(1998) and Bech et al. (2001), and Olsen et al. (2003). Konstantinidis et al. (2011) found the MDI to be superior to the Beck Depression Inventory because the BDI's clinical validity is limited in addressing the DSM-IV symptoms of depression.

Results

To investigate levels of hope and depression in at-risk youth following participation in a 5-week program of EAL, researchers tested the following hypotheses:

(1) Levels of hope will increase in at-risk youth following participation in EAL.
(2) Levels of depression will decrease in at-risk youth following participation in EAL.

The researchers first examined the differences in pre-test and post-test scores using a t test. Since this study randomly assigned participants to either the treatment or control group, any changes should, theoretically, be the result of the intervention. The statistical assumptions of a t-test were examined and violations are reported.

Paired samples t-tests using split data were run to determine any differences between the pre- and post-treatment scores on Hope and Depression in either the treatment or control groups. Due to a violation of the assumption of normality, bootstrapping was utilized. According to Berkovits et al. (2000), when violations of both normality and sphericity occur, the bootstrap method seems to be the most robust alternative, even with small samples. The scores can be seen in Tables 3 and 4.

In comparing the pre- and post-intervention hope scores in the treatment and control groups, scores of participants in the treatment group showed a greater increase than the control group after experiencing the 5-week program of EAL. This difference was statistically significant $t(12) = -2.536$, $p = .037$, $r = .59$. Based on Cohen (1988, 1992), this represents a medium effect size.

Pre- and post-intervention depression scores were examined in both the treatment and control group. Scores of participants in the treatment group showed a greater decrease in depression scores, $t(12) = 1.827$, though the

Table 3 Results of paired samples t tests for control group

Scale	t	$df2$	Sig.	Effect size (r)	SE
Hope Tot1–Tot 6	−1.203	11	.254	.34	4.92
Hope Tot1–Tot6			.275		4.64
Dep Tot1–Tot6	−.121	11	.906	.04	4.14
Dep Tot1–Tot6			.899		3.90

Indented, italicized lines indicate results from Bootstrapping

Table 4 Results of paired samples t tests for treatment group

Scale	t	$df2$	Sig.	Effect size (r)	SE
Hope Tot1–Tot 6	−2.536	12	.026	.59	2.91
Hope Tot1–Tot6			.037*		2.80
Dep Tot1–Tot6	1.827	12	.093	.47	1.47
Dep Tot1–Tot6			.108		1.43

Indented, italicized lines indicate results from Bootstrapping

difference was not statistically significant, $p = .108$. A medium effect size of $r = .47$ was found.

Results of the ANOVA

In order to examine the differences at each of the time points, an analysis of variance (ANOVA) was completed. In addition to the assumptions investigated earlier in this section, an ANOVA has an additional assumption of sphericity. Mauchly's test indicated that the assumption of sphericity had been violated $X^2(14) = 66.51$, $p < .05$. The corrected tests (Greenhouse-Guisser and Huynh–Feldt) were calculated. The F-ratio produced in an ANOVA compares the size of the variation caused by the treatment to the size of the variation caused by random factors.

Hope

The results of the ANOVA did not indicate that levels of hope were significantly impacted, $F (1.881, 41.388) = 3.071$, $p = .060$, $\eta^2 = .13$, using the Greenhouse-Geisser

correction. Based on Cohen's (1988) definition of an η^2 of .02 as small, of .13 as medium, and of .26 as large, this is a medium effect size. Multivariate analysis of variance does not require sphericity. Vasey and Thayer (1987) state that, "under normal conditions of use, one can consider the multivariate test 'exact' for repeated measures designs while the univariate approach can only be considered 'approximate' due to the additional assumption of sphericity it carries" (p. 483). The results of the multivariate tests show that hope scores were significantly affected by the treatment. Pillai's Trace produced a $V = .511$, $F(5, 18) = 3.76$, $p = .017$.

Depression

Within-subjects levels of depression were examined. The data show that levels of depression were not significantly impacted, $F(1.75, 38.52) = .581$, $p = .542$, $\eta^2 = .08$. This indicates a small to medium effect size. Because Mauchly's test indicated a violation of the assumption of sphericity, $X^2(14) = 101.78$, $p < .05$, multivariate tests are again reported. The results of the multivariate tests show that depression scores were significantly impacted by the treatment. Pillai's Trace statistic produced a $V = .471$, $F(5, 18) = 3.20$, $p = .031$.

To aid in visualizing the various scores at the different time points, figures are provided. Figures 1 and 2 show the means of measures of Hope and Depression in both the treatment and control groups.

Reported mean scores on the ADSHS increased in both the treatment and the control groups (Fig. 1). Scores in the

intervention group continued to rise until the last time point, while scores of the control group fluctuated somewhat. A calculated effect size of $\eta^2 = .128$ in the treatment group indicates a small to medium effect.

Figure 2, shows levels of depression over the six data collection points. Mean depression scores for both the treatment and control group are reported in Fig. 2. The treatment group's scores consistently decreased over time, while the scores of the control group fluctuated during time 2 through time 5 remaining relatively unchanged by time 6. A small effect was noted for depression ($\eta^2 = .082$).

Violations of some of the assumptions of the statistical procedures cause the researchers to be cautious in the interpretations of the data. The paired samples t-tests indicated that Hope scores improved significantly from pre- to post-intervention, with a medium effect size of $r = .59$. Multivariate analyses found statistically significant changes in levels of both depression and hope. Bergh (1995) suggests that if the assumption of sphericity is met, then conventional univariate methods are the most powerful and robust, while if this assumption is violated, then multivariate models should be utilized. Bergh (1995) cautions that the multivariate approach is less powerful than univariate techniques and may yield type II statistical errors.

Because non-parametric tests do not have an assumption of normality, non-parametric tests were run. The Friedman's ANOVA produces a Chi square statistic. The results of the Friedman's ANOVA for both the control and the treatment groups are shown in Tables 5 and 6.
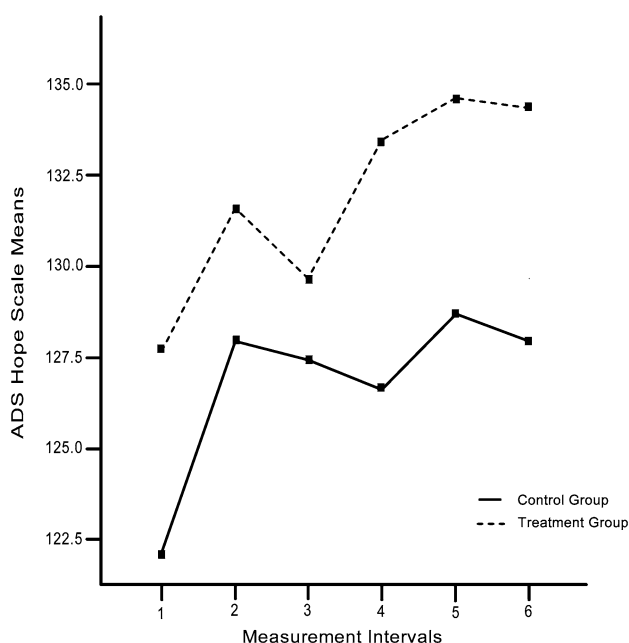
Fig. 1 Comparison of treatment and control group hope level means at points 1–6
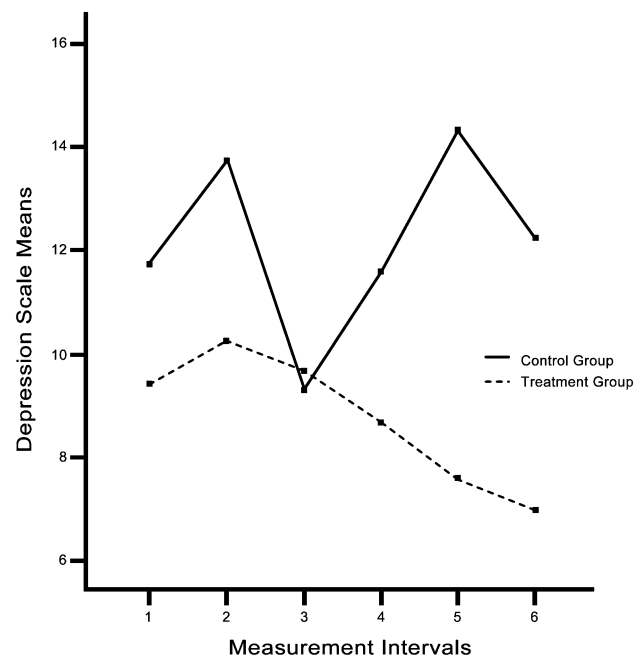
Fig. 2 Comparison of treatment and control group depression level means at points 1–6

Because significance was found in all scales in the treatment group, *Post hoc* tests for Friedman's ANOVA were performed. It was necessary to correct for the number of tests, similar to the Bonferroni correction. The significance level was .05, therefore .05 was divided by the number of comparisons (6). Therefore, rather than use .05 as the critical level of significance, .05/6 was used, which is .0083. With this correction, the change in levels of Hope in the treatment group remains significant.

Participants from the treatment group who could be reached 6 months after the intervention ($n = 16$) were again surveyed using the same instruments. Hope scores were even higher than at the last time point for 6 of 8 participants. In the two participants whose scores did not increase, one reported a 2-point drop and one a 5-point drop on a scale of 148. Depression scores followed the same pattern with the same two participants indicating minor increases in depression while the other six reported the same or less depression.

Discussion

The current study investigated changes in levels of hope and depression over a brief, 5-week time period. The brevity of the intervention is important. Five weeks may seem inadequate for stimulating significant change considering that student social, familial, and/or academic difficulties have been ongoing for years. However, in a time of budget cuts and cost considerations, it is a worthwhile goal to find the smallest number of sessions possible that will still result in positive changes in attitudes. This study found even a brief intervention of EAL to be effective at increasing levels of hope and decreasing levels of depression in at-risk youth. Hope and depression scores of participants in the treatment group compared with scores of participants in the control group offer a strong validation that EAL has a positive impact on at-risk youth.

Limitations

Several limitations emerged as part of conducting the current study. The lack of normality of the data complicated the statistical analysis. Another limitation of this study is the use of convenience sampling. Participants were recruited from a single school. The small sample does not allow for generalization. Replication of this study should try to include a broader range of participants.

Self-report measures always create a limitation. Attempts were made to encourage truthful answers and to ensure privacy. Students were assured that their answers would not be shared with anyone at the school. Participant characteristics may be another limitation. Volunteers may

Table 5 Results of Friedman's ANOVA for control group

Scale	N	χ^2	df	Significance
Hope	12	5.764	5	.330
Depression	12	7.913	5	.161

Table 6 Results of Friedman's ANOVA for treatment group

Scale	N	χ^2	df	Significance
Hope	12	16.538	5	.005*
Depression	12	14.004	5	.016*

* $p < .05$

differ from adolescents who did not volunteer in ways that impact the outcome of the intervention.

Practice effects can be positive (such as improvement due to increased awareness of the constructs being evaluated) or negative (such as boredom or fatigue). Future research should include a larger, more diverse sample and fewer data collection points. An attempt to maximize the number of participants and minimize the number of repeated measures may minimize the limitations of practice effects while retaining statistical power. Future research should also investigate changes using other measures such as grades or classroom behaviors as observed by teachers or behaviors in the home as observed by parents and guardians.

Conclusion

The current study shows that at-risk youth were positively impacted by a brief, 5-week EAL experience. Hope levels increased, and depression levels decreased. In a time of budget cuts, it is especially important for schools and mental health providers to address the emotional needs of adolescents in the most frugal yet effective way positive. Adolescence is a particularly difficult stage of life. The many rapid changes that occur during adolescence create potential for both positive and negative outcomes. The choices made by youth are impacted by individual characteristics such as levels of hope and depression. Clearly, interventions that increase levels of hope while reducing levels of depression are of value. The results of the current study extend previous research by showing the positive impact of equine-assisted learning, and specifically, the LASSO curriculum, on levels of hope and depression on at-risk youth.

Appendix

Texas Education Agency (2009) Definition of At-Risk

"The statutory criteria for at-risk status include each student who is under 21 years of age and who:

1. Was not advanced from one grade level to the next for one or more school years;
2. Is in grades 7, 8, 9, 10, 11, or 12 and did not maintain an average equivalent to 70 on a scale of 100 in two or more subjects in the foundation curriculum during a semester in the preceding or current school year or is not maintaining such an average in two or more subjects in the foundation curriculum in the current semester;
3. Did not perform satisfactorily on an assessment instrument administered to the student under TEC Subchapter B, Chapter 39, and who has not in the previous or current school year subsequently performed on that instrument or another appropriate instrument at a level equal to at least 110 percent of the level of satisfactory performance on that instrument;
4. Is in prekindergarten, kindergarten or grades 1, 2, or 3 and did not perform satisfactorily on a readiness test or assessment instrument administered during the current school year;
5. Is pregnant or is a parent;
6. Has been placed in an alternative education program in accordance with §TEC 37.006 during the preceding or current school year;
7. Has been expelled in accordance with §TEC 37.007 during the preceding or current school year;
8. Is currently on parole, probation, deferred prosecution, or other conditional release;
9. Was previously reported through the PEIMS to have dropped out of school;
10. Is a student of limited English proficiency, as defined by §TEC 29.052;
11. Is in the custody or care of the Department of Protective and Regulatory Services or has, during the current school year, been referred to the department by a school official, officer of the juvenile court, or law enforcement official;
12. Is homeless, as defined by 42 U.S.C. Section 11302 and its subsequent amendments; or
13. Resided in the preceding school year or resides in the current school year in a residential placement facility in the district, including a detention facility, substance abuse treatment facility, emergency shelter, psychiatric hospital, halfway house, or foster group home."

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