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Do Horse Breed Association Youth Programs Promote Life Skills and GoalDevelopment for Youth with Attention Deficit Hyperactivity Disorder?

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Abstract

Almost 10% of American youth are diagnosed with attention deficit hyperactivity disorder (ADHD). While not a learning disability, this diagnosis results in youth being labeled academically "at-risk." While equine assisted services (EAS) promote an emotionally safe learning environment for at-risk youth, program availability is limited. Horse breed associations, however, offer programs nationwide for all youth, although these programs do not have a therapeutic intention. Therefore, the objectives of this study were to utilize a survey to determine program participation and associated development of life skills and goals for ADHD youth. A survey was developed with the following: 15 fixed-response multiple-choice questions, one question formatted as a rating scale concerning development of 10 life skills, and an open-ended response section for feedback concerning the survey and the programs. Participants (n = 58) included the following: 1) parents of ADHD youth who had participated or were participating in breed association youth activities or 2) individuals with ADHD who had participated as a youth in these activities. The majority participated in these programs >10 years (71%) utilizing multiple horses (3–5 horses: 38%). Investment within these programs (>$40,000: 86%) exceeded financial returns ($3,000–$5,000: 33%). The majority of respondents were in agreement that these programs had impacted academic ("Definitely Yes": 69%) and career ("Somewhat Yes": 67%) goals. All of the life skills improved with participation with "respect" having the highest rating. While EAS has shown promise for ADHD youth, breed association youth programs may be a complementary approach in working with these youth.

Keywords: attention deficit hyperactivity disorder; youth horse programs; horse breed associations; life skills; career goals

Introduction

According to a national survey conducted by the Centers for Disease Control and Prevention (CDC), around six million youth between the ages of 3 and 17 years old are diagnosed with attention deficit hyperactivity disorder (ADHD) within the United States (Bitsko et al., 2022). This neurodevelopmental disorder is characterized by inattention and inability to control impulse behaviors. These symptoms can create hinderances for youth within the academic setting.

Treatment Approaches

Pharmaceutic intervention has been the most common approach to managing the symptoms of ADHD (Brown, 2015). However, alternative therapies have gained popularity for under-served populations such as children and adolescents (Hoagwood et al., 2017). Traditional therapeutic inventions, typically in the form of pharmaceuticals, have not been 100% effective as seen in the growing number of ADHD youth that exhibit intensification of negative behaviors over time (Chaulagain et al., 2023). Further, the side effects to these medications, particularly after long-term use, have yet to be thoroughly investigated.

Animal interactions have been utilized as an alternative intervention strategy within the therapeutic setting for the treatment of youth with ADHD. In fact, studies investigating a wide array of psychological and cognitive disorders have reported the value of interaction with animals such as dogs, cats, horses, and rabbits (Arnon et al., 2020; Berg et al., 2021; Contalbrigo et al., 2021; Kunasegran & Vijayaletchumy, 2020; London et al., 2020). According to Bakó & Ullmann (2020), the use of animals in therapy allows for unconditional acceptance and an environment that creates a safe space for youth to feel vulnerable and explore their feelings. In particular, the use of the horse for addressing mental health challenges has shown much promise for youth with ADHD (Ahn et al., 2021; Clarke, 2022; Helmer et al., 2021). Furthermore, Berg et al. (2021) noted that the fact that the equine environment is distinctive from that of the traditional therapeutic setting promotes treatment retention and participation with youth patients.

Horses as a Therapeutic Tool

The major impact of ADHD is its detrement to academic success, social skills, and developmental skills (White et al., 2020). The prognosis of youth beyond the classroom is unpromising, finding "higher rates of unemployment, increased risk of substance abuse disorders and incarceration, and reduced quality of life" (White et al., 2020). A higher risk of behavioral issues within the classroom for ADHD youth leads to low self-esteem, depression, and generalized anxiety. Disruptive behaviors are associated with this disorder, resulting in a heavy reliance on stimulant medication to reduce the symptoms of ADHD (Brown, 2015). Due to the recent increase of substance abuse within young adults, however, alternative treatment approaches are being promoted within the mental health community. This includes such options as meditation and cognitive behavioral therapy. While these options may address issues associated with self-control, they are limited in their application to functional tasks (Helmer et al., 2021). On the other hand, according to Arnon et al. (2020), equine interaction promotes development of these tasks. However, he goes on to state that this therapeutic approach may be "widely variable, unstandardized, and understudied." Thus, without further research, mental health professionals may be hesitant in promoting this form of alternative therapy.

Equine assisted services (EAS) has been used for treatment of multiple cognitive and mental health disorders including posttraumatic stress disorder (PTSD), autism spectrum disorder (ASD), language disorders, and generalized anxiety disorder (Arnon et al., 2020; Bakó & Ullman, 2020; Berg et al., 2021; Contalbrigo et al., 2021; London et al., 2020). A positive aspect of EAS is that it addresses multiple psychomotor issues related to cognitive, psychological, and psychomotor difficulties (Kunasegran & Vijayaletchumy, 2020). With mental health concerns growing in youth after the COVID-19 pandemic,

viable options are needed in expanding opportunities within equine interaction even if outside the traditional therapy setting (Evans et al., 2022; Young, 2022).

Over the course of multiple decades, equine interaction opportunities have been available as an outlet for younger populations through Future Farmers of America (FFA) and 4-H (Holmgren & Reid, 2007; Sansom, 2018). While not all communities offer such opportunities, additional equine interaction possibilities are available through youth programs sponsored by horse breed associations. Organizations like the American Quarter Horse Youth Association (AQHYA) help promote youth in getting involved in horse-related activities (AQHA, 2023). The organization has over 17,000 youth members. Although the focus of the activities may not be therapeutic in nature, the facilitation of equine interaction can have an indirect positive effect on participants (Evans et al., 2022; Hatcher et al., 2019). The value of equine interaction utilizing more accessible means of horse activities holds promise for the growing population of youth with ADHD.

Theoretical Framework

This study draws from both the positive youth development (PYD) theory and the social cognitive theory (SCT). The two theories in many ways go hand-in-hand as PYD is inspired by several of the components of SCT (Dooley & Schreckhise, 2016). The idea of SCT is based on the interactions between the environment, behavior, and cognition with the youth utilizing observational learning to model behaviors that are then positively or negatively reinforced (Rubenstein et al., 2022; Swearer et al., 2014). In today's youth within the wrong environment, this can often create negative behaviors such as bullying or vaping (Rahman et al., 2024; Swearer et al., 2014). However, through PYD programs such as those seen in sports-related activities or in such programs as 4-H, youth can be guided in modeling more positive behaviors (Holt et al., 2017). The PYD theory is built upon the idea that youth have the resources to be developed in a positive manner if given the right environment. The equine environment can be that positive environment.

The aim of PYD is to provide self-efficiacy that is promoted by youth programming to foster positive outcomes (Swearer et al., 2014). Primarily the current study focuses on the recipical interaction between the ADHD youth, the horse breed association youth programs, and the resulting exhibited positive behaviors such as that of life skills and academic and career goals development. Further, PYD offers a more targeted theoretical framework where the programming is centered around the success of the participant, nurturing the potentiality of the youth (Hill et al., 2022). The overarching goal of this framework is to engage youth in a positive experience that fosters positive developmental outcomes. This aligns with the goals of animal-based youth programs found within the United States including those provided by horse breed associations (AQHA, 2023; Holmgren & Reid, 2007; Sansom, 2018). This can be of particular value to youth who have the potential to exhibit academically and socially "at-risk" behaviors such as those struggling with ADHD (Dooley & Schreckhise, 2016). As such, this population was targeted for this study.

Approach and Aims

Having a wider range of availability for youth to experience equine interaction can impact a larger percentage of the youth population. Accessibility is necessary for the rapidly growing population of youth with ADHD, although further research is needed to better understand all of its benefits. Therefore, the objectives of this study were to utilize a survey instrument to summarize participation and to determine the benefits of this participation in horse breed association youth programs for youth with ADHD. While these associations utilize consumer survey methods to assess their program participation and impacts, these assessments for these associations do not target specifically ADHD youth. Further, by employing survey methodology for this study, this will replicate the consumer survey methods currently utilized by

the associations. This will facilitate further follow up by these associations concerning their programming associated with this population.

The hypothesis of this study was that participation within these programs would develop life skills, academic goals, and career plans for ADHD youth. As such, the following were the research questions that directed the current study:

1. Who were the ADHD youth who participated in these horse breed association youth programs and what associations and activities were they involved in?
2. Did involvement in these horse breed association youth programs shape academic and career goals for ADHD youth?
3. Was development of life skills for ADHD youth in these horse breed association youth programs promoted?

Methods

Survey Instrument

Survey questions were adapted from that reported in Evans et al. (2019). Questions were adapted with the following purposes in mind: 1) to present survey participants with questions pertaining to their respective activities associated with these youth horse programs; 2) to offer evaluation measures that could be completed on-site in the locations where survey recruitment took place; and 3) to allow for survey completion within a timeframe that would be convenient for the survey participants. An example of such adaptations included changing of the word "livestock" that was used within the survey reported by Evans et al. (2019) to "horse" or "equine" for this study. All survey adaptations were carried out by the research team in consultation with licensed mental health professionals familiar with EAS and working with youth.

Questions were further reviewed and modified by other professionals within the EAS industry to ensure clarity of questions and appropriateness as to the objectives of the study. The survey review process with EAS industry professionals included determining test-retest reliability using the Pearson Correlation Coefficient. The survey instrument was completed twice by these professionals finding the Pearson Correlation Coefficient between the scores of the two completed surveys was 0.76, which was interpreted as a good test-retest reliability for the survey instrument (Kishore et al., 2021). The final survey instrument was evaluated and approved by the University Institutional Review Board (IRB) prior to distribution.

The final draft of the survey instrument was made up of 15 fixed-response questions consisting of multiple-choice options (see the appendix for final survey question-and-answer options). These questions included four that offered a response of "other." This option allowed for limited space for filling in additional information. Questions are given within Table 1. The table includes the number of possible answers available for selection. For all but two questions, an option was given for "NA," not applicable. Respondents were allowed to not respond to a question. A non-response was omitted from statistical analysis but was documented. Details concerning the type of answer options are given within the appendix.

A rating scale was utilized for the last question of the survey with a list of 10 life skills for participants to rate. Life skill conceptualization and operationalization follows that described by Evans et al. (2019) utilizing the 10 life skills identified: decision-making, time management, problem solving, goal setting, building friendships, professional networking, public speaking, respect, effective listening, and financial responsibility. Similar skills were identified by Seevers et al. (1995) and Subasree and Nair (2014) after their respective review of literature. However, the life skills identified by Evans et al. (2019) was selected for the current study due to the shortened length of the assessment compared to previous studies. Use of a longer assessment would limit the ability of the research team to meet the third purpose of survey adaptation and development. Similar to Subasree and Nair (2014), Evans et al. (2019) utilized a five-point scale with

a neutral option. This rating scale was utilized for this study. Thus, for question 16, the following coding was utilized for the five answer options provided: "no improvement" = 1, "some improvement" = 2, "good improvement" = 3, "large improvement" = 4, and "NA" = 0. Further information concerning options is presented within the appendix.

Finally, participants were given space on the back of the survey instrument to give feedback concerning recommendations associated with changes for these programs and/or the survey instrument. This section was not included within the survey reported by Evans et al. (2019). While completion of this section was not required for survey participation, this additional feedback was intended to guide future directions for the programs and/or the survey process.

Participation and Data Analysis

The survey instrument was distributed in paper format at various horse association-sponsored activities in 2021(January to December). Distribution locations included horse shows and meetings sponsored by state affiliates and national organizations for the following breed associations: American Quarter Horse Association (AQHA), Palomino Horse Breeders Association (PHBA), Appaloosa Horse Club (ApHC), American Paint Horse Association (APHA), Pinto Horse Association of America (PtHA), and American Buckskin Registry Association (ABRA). Youth advisors and/or youth committee members at the state and national levels for these breed associations were utilized for distribution. Shows and meetings attended for survey distribution were selected based off potential attendance so that optimization of participation was achieved. As such, two highly attended events were selected as determined by breed association representatives from each of the associations listed above. Survey recruitment during the events was done by representatives of the research team in conjunction with breed associations representatives. Scripts were given to the individuals assisting with recruitment. Scripts described the objectives of the study and the type of participants needed for achieving objectives.

Surveys were filled in on-site at the various events with at least one member of the research team available at all times to answer questions from survey participants. A total of 200 paper copies of the survey instrument were distributed to the following individuals at the designated breed association events described above: 1) parents of ADHD youth who had participated or were participating in breed association youth activities or 2) adult individuals with ADHD who had participated previously as youth in these activities.

Statistical analyses were completed using SAS version 9.4. For each question, means and standard deviations were determined and percentages for responses were calculated. Correlations evaluating the relationship between investments (financial, time, and number of horses) and that of academic and career goals and between years of participation and that of life skills were conducted using the Spearman function of the CORR procedure. Statistical significance set at $P \leq 0.05$.

Results

Of the 200 paper copies of the survey distributed, 58 were completed and returned to the research team (response rate was 29%). Of those surveys returned, 100% of the questions were answered including the open-ended response section at the back of the survey concerning feedback related to these programs and the survey instrument. None of the submitted survey responses included the use of "NA" for those questions that offered that option. As for survey participants, while youth were not able to participate in the study, the majority of participants were those just recently completing eligibility within the youth programs and had started their participation within the amateur program of these breed associations (Table 1). Survey participation came primarily from female participants.

Participation Level and Goal Development

Questions 2–13 tracked the level of participation of the survey participants and the activities they took part in. This was deemed by the research team to be valuable for both the associations as they evaluate their youth programs, but also for the parents of ADHD youth to understand how invested these individuals were in the programs they participated in. This gives further insight to parents wanting to implement such programs into the lives of their ADHD youth and to those associations actively developing these programs. Interestingly, while the most popular association was AQHA, researchers observed all of the respondents indicated involvement in multiple associations. Investment both in the horses and associated activities appeared to outweigh the funds received through awards, prizes, and scholarships.

Questions 14 and 15 evaluated potential development of goals for the participants within these programs (Table 1). Respondents were in overwhelming agreement, either responding "somewhat yes" or "definitely yes," that these programs had impacted academic and career goals. Impacts on academic and career goals were not correlated with financial investment (Academic: 0.30, $P = 0.29$; Career: 0.25, $P = 0.34$) nor number of horses purchased (Academic: 0.21, $P = 0.53$; Career: 0.14, $P = 0.46$). Goals were moderately correlated with years of participation (Academic: 0.46, $P = 0.04$; Career: 0.40, $P = 0.05$).

Table 1. Forced-choice questions concerning pariticipation within horse breed association youth programs for attention deficit hyperactivity youth.

Question Number	Question	Number of Answer Options	Most Popular Answer (Percentage of Respondents; N = 58)
1.	What was the age the youth participated within the programs?	4	A. 18–25 yrs (55%)
2.	What was the gender of the youth participating within the programs?	3	B. Female (79%)
3.	How long have you or your child been involved in horse breed association youth programs?	6	E. > 10 yrs (71%)
4.	What has been your role associated with horse breed association youth programs (circle all that applies)?	8	A. Former Youth Member (50%)
5.	How many horse breed associations have your family participated in the youth programs within these associations?	5	B. 2–3 (66%)
6.	If you or your child participated in these horse breed association youth programs, what breed association did you participate in (circle all that apply)?	7	A. AQHA (84%)
7.	How did you hear about the youth programs associated with horse breed associations (circle all that applies)?	7	C. Member of association (45%)
8.	How has the youth programs of these horse breed associations directly impacted you and/or your child (circle all that apply)?	8	A. Participated in youth classes at breed shows (57%)
9.	How have you financially supported the youth programs within these horse breed associations (circle all that apply)?	6	B. Through entry fees at World Shows (48%)

10.	If you bought a horse to specifically participate within these horse breed association youth programs, what is the total amount you have spent on that horse?	8	F. $10,000–$20,000 (36%)
11.	If you or your child participated in these horse breed association youth programs, how many horses did you or your child purchase to participate within these programs?	5	C. 3–5 horses (38%)
12.	If you or your child participated in these horse breed association youth programs, how much money in scholarship funds and/or prizes (estimated value of prizes) have you or your child received through these programs?	7	D. $3,000–$5,000 (33%)
13.	If you or your child participated in these horse breed association youth programs, how much investment besides the costs associated with the horse did your family put into activities associated with participating within these programs?	8	G. > $40,000 (86%)
14.	If you or your child participated in these horse breed association youth programs, has the experience within these programs positively impacted you or your child's goals for college and future education?	5	A. Definitely "yes" (69%)
15.	If you or your child participated in these horse breed association youth programs, has the experience within these programs positively impacted you or your child's career goal?	5	B. Somewhat "yes" (67%)

Note. Number of answer options given for each question along with the most popular answers reported given as a percent of the surveys returned (n = 58).

Life Skills Development and Future Suggestions

As for development of life skills, the results from the survey are interpreted by the research team as the participant's "perceived improvement" since before and after measurements were not available and skills were assessed by the participant, not an objective observer. Along with not selecting the "NA" option, participants did not select the response of "no improvement" for any of the life skills listed (Table 2). The life skill of "respect" had the highest percentage of "large improvement" responses. Interestingly, financial responsibility had the highest percentage of those marking "some improvements." As for the rating scale for life skill development, the highest rating was found in respect and lowest was found in public speaking. No correlations were found between years of participation and the life skills developed (Goal Setting: 0.21, $P = 0.49$; Decision-Making: 0.23, P = 0.47; Time Management: 0.21, $P = 0.49$; Problem Solving: 0.20, $P = 0.51$; Building Friendships: 0.19, $P = 0.53$; Professional Networking: 0.17, $P = 0.48$; Public Speaking: 0.15, $P = 0.46$; Respect: 0.23, $P = 0.54$; Effective Listening: 0.17, $P = 0.48$; Financial Responsibility: 0.16, $P = 0.46$).

Table 2. Perceived life skill development within attention deficit hyperactivity disorder youth through horse breed association youth programs. Responses (%) given for each of the answers provided along with the overall mean (SD) score using the five-point rating scale.

Life Skills	No Improvement (%)	Some Improvement (%)	Good Improvement (%)	Large Improvement (%)	Mean Score	SD
Goal Setting	0	1	36	63	3.62	0.52
Decision-Making	0	1	34	65	3.64	0.51
Time Management	0	1	36	63	3.62	0.52
Problem Solving	0	1	40	59	3.59	0.53
Building Friendships	0	3	37	60	3.57	0.56
Professional Networking	0	7	42	51	3.44	0.61
Public Speaking	0	8	42	50	3.42	0.64
Respect	0	0	32	68	3.68	0.47
Effective Listening	0	9	40	51	3.43	0.65
Financial Responsibility	0	10	36	54	3.44	0.66

Note. Respondents checked the following responses concerning skill obtainment with the percent of these responses taken from those participating in the survey (n = 58): No improvements, some improvements, good improvements, large improvements, and not applicable ("NA"). Corresponding scores using the rating scale taken from Evans et al. (2019) ranged from a score of one for "no improvements" to four for "large improvements" and a response of "NA" receiving a score of zero. The "NA" answer option was not included in the table as no participants utilized this option.

At the end of the survey, respondents were given space on the back to provide feedback covering these programs and/or the survey. None of the responses were directed toward the survey instrument and/or the survey process. Participants' feedback on the programs resulted in 29% of participants suggesting lowering of prices in show fees for youth and 19% suggesting offering more social, non-riding related activities. Additionally, 34% of participants responded within this space "NA," "None," or wording reflecting positive feedback about the programs.

Discussion

According to Helmer et al. (2021), the most common pediatric disorder within the United States is ADHD. Worldwide, approximately 7.2% of the entire population has ADHD with a greater number of boys than girls diagnosed (White et al., 2020). While extremely common, this disorder can be devastating to the academic future of youth as the hinderance of self-control and limited ability to stay goal-directed is detrimental to learning and basic life skill development. Further complicating this challenge, ADHD is a complex disorder where current treatments have lacked success and have even lead to substance abuse

(Brown, 2015). Alternative treatment options, on the other hand, such as animal interaction utilizing the horse have shown promise (Evans et al., 2022). Although limited research has prevented widespread availability of EAS, youth programs sponsored by various horse-related organizations throughout the United States are currently accessible. This accessibility is even possible within more remote, rural settings, thus, promoting utilization of this alternative approach to managing ADHD. This availability allows for more youth to have ease of access to equine interaction experiences. Further, with the prevalence of ADHD, accessibility is key for impacting a larger percentage of the youth population. Therefore, the aims of this study was to assess participation of youth diagnosed with ADHD within horse breed associations youth programs and to determine perceived impact as it relates to participant's life skill development and future goals.

Benefits of Equine Interaction

Limits to academic success and development of life skills can result from ADHD without accessibility to viable treatment options (Helmer et al., 2021). Although current treatment options have had limited impacts for many youth, equine interaction through various youth programs can be an alternative solution where traditional approaches have failed. Promotion of youth programs sponsored by various horse-related associations should be encouraged for youth struggling with ADHD due to the positive impacts in life skills and academic and career goals observed within the current study. The value of equine interaction for youth with ADHD is further supported by previous research (Ahn et al., 2021; Helmer et al., 2021). As reported by Evans et al. (2022), equine interaction can assist in not only developing skills but also potential career opportunities. These conclusions are consistent with what was discovered within the current study. The focus of these youth programs, however, is often on the development of equine skills pertaining to riding horses. Nonetheless, results from the current study indicate positive development of general life skills. This can in return have a positive impact academically for at-risk youth (Cagle-Holtcamp et al., 2019). Similar positive impacts were seen in Evans et al. (2022) for college-aged students participating in equine volunteer activities. Interestingly, both current and previous studies focused on equine programs outside of the classroom for investigating academic-related benefits. However, the programs studied ultimately promoted learning and potential skill development for future career opportunities. Within the academic setting, equine interaction can be beneficial. Evans et al. (2009) determined perceived interpersonal skill levels improved within college students participating in a semester-long equine training class. Variation within these findings, however, was observed due to prior horse experience, gender, and age. This was not explored within the current study, thus, these influences should be further examined within future studies. Furthermore, while students have reported the benefits of non-therapeutic equine interaction (Evans et al., 2019, 2022), these studies along with the current study did not track the long-term impact of this interaction. As such, further research concerning the long-term impacts of these horse breed association youth programs is recommended to determine viability as a long-term alternative approach to ADHD treatment.

Limitations to Equine-Youth Programs

While the perceived benefits on life skill and goal development are evident within the current study, the investment for participation within these programs may be costly. Further, the financial return through awards, scholarships, and other prizes does not offset these costs according to survey responses. Interestingly, the life skill that more respondents reported "some improvement" was financial responsibility. This suggests there is an imbalance in understanding the costs associated with equines and the potential return gained from that experience. A similar imbalance in investment compared to returns within a livestock youth program was reported by Evans et al. (2019). Furthermore, costs were noted by survey participants as a concern in the open-ended response section given at the end of the survey. Interestingly,

financial investment along with investment in the form of multiple horse ownership did not correlate with impacts concerning academic and career goals within the current study. Instead, it was the years of participation that demonstrated a moderate correlation. Despite this correlation associated with long-term participation, mental health improvement and skill development was reported by Hatcher et al. (2019) after just one extension-based, non-therapeutic equine interaction session. Thus, this may indicate certain equine activities may have more efficient results when it comes to assessing returns associated with participation. As such, further research is warranted to determine efficiacy of different forms of equine curriculum.

For possible implementation of equine events that benefit youth with ADHD, investment of both time and money of the volunteers and/or sponors associated with these events should be considered. Unfortunately, this was not tracked by the current study and previous studies. There is a substantial financial burden taken on by these organizations in offering these events that are not documented within these studies. This is important to note, as financial and time commitments for these equine programs may need to be a consideration when determing further expansion and promotion in order to understand potential limitations. Further research surveying those that facilitate these events should be encouraged to determine areas that are limiting. Evans et al. (2019) included within their survey instrument those that had contributed to the livestock youth program. It appeared from the survey respondents that buyers/sponsors for the event were limited. Understanding as to whether this is an issue within the horse breed association youth programs would be useful in moving forward with development and promotion. Respondents within this study that provided feedback at the end of the survey indicated wanting development of further social, non-riding related activities. However, this may be hindered by the associations' finances and/or the workforce needed for putting on such events. It is important to recognize that therapeutic intervention for ADHD can be covered by various forms of medical insurance helping to offset out-of-pocket costs by the parents of ADHD youth (Brown, 2015). Nevertheless, EAS is limited within insurance coverage to only that provided by mental health professionals within a psychotherapy setting (Raypole, 2022). This limits what is available for parents searching for alternative and/or complementary treatment options that best match the needs of the youth. While these horse breed association youth programs are not designed with therapeutic intentions, the benefits are notable within this study. As such, these programs offer parents an additional tool in supporting their youth with ADHD.

Implications for Youth Development Practice

As discussed earlier, PYD programs are geared toward creating a positive environment that offers youth opportunities where they can recognize and enhance their strengths (Hill et al., 2022; Holt et al., 2017; Swearer et al., 2014). As observed within this study, this aim was achieved for ADHD youth within these horse breed association youth programs. As such, the results of this study can be utilized to advocate for expansion of meaningful and purposeful opportunities for ADHD youth through horse breed association youth programs. Further, program advocacy is warranted with the growing population of ADHD youth in United States. This advocacy should include securing future funding for these youth programs. Investment should be explored for expanded opportunities specifically for ADHD youth. Current programs within these horse breed associations do not target specifically ADHD youth. As such, this expansion of opportunities would include development of effective models that center around inclusion of such individuals.

This study provides an innovative approach to alternative interventions for ADHD youth through the use of horse breed association youth programs. Since ADHD youth demonstrated life skills and academic and career goals development, this suggests improved outcomes can be achieved with intentional strategies for recruiting and supporting ADHD youth within these horse breed association youth programs. Of course, life skill development was that of what the participant "perceived" as development and was not taken directly before and after the event. Thus, these results would be strengthened with further analysis

of these skills. This may include an unbiased, objective review by someone other than the participant or their parents (Evans et al., 2022). Skill development was assessed by Evans et al. (2022) within college students and this assessment was completed before and after a semester of equine-based volunteering. Similar retrospective post-then-presurvey design could capture more direct impact of a particular activity offered through these horse breed association youth programs, rather than an overall assessment of the program. This would be of value when developing recruitment strategies and program models that are specific to the ADHD youth.

The diagnosis of ADHD often leads to "at-risk" behaviors and academic failures (Helmer et al., 2021; White et al., 2020), thus, these programs achieved the goals of PYD as observed within the results of this study (Swearer et al., 2014). Interestingly, since years of participation did not correlate with life skills developed, youth recruitment can be done at any age. Thus, expansion strategies should include multiple age groups. Nonetheless, it is important to note that years of participation did impact academic and career goals development. Thus, programs targeting these particular areas would be more effectively implemented at an early age. Although finances was a concern as observed within the open-ended question, financial investment did not further promote development of these goals. This suggests these programs can be offered to a range of families with differing social-economic backgrounds. Nonetheless, associations should explore funding opportunities to offset the costs that these families cannot afford.

Limitations within the Study

With only a 29% response rate, it is also important to recognize that survey demographics may be limited when making conclusions from this study. Thus, survey responses may only address a small group within those who participate in these programs. While collaboration with these breed associations assisted in facilitating access to a targeted audience, a broader reach may have been achieved by surveying programs such as 4-H and FFA. This along with offering online formatting may have assisted in promoting a larger response rate with a more diverse demographic. For example, when reviewing survey responses, it was shown that mostly females participated, but ADHD diagnosis tends to impact males more preventantly (Brown, 2015). Evans et al. (2009) found males participating in an equine training course reported more improvement in life skills than females. This suggests that the results seen in the current study may improve with a sample population that includes a larger sampling of the male ADHD population. Unfortunately, due to the small representation of the male population within this study, gender influence was not evaluated. Nevertheless, this limited number of male representation within the current study should be addressed as these youth breed programs are open to all youth. This allows equal access for both genders.

If the current numbers are reflective of the actual participation within these programs, this prevalence of female participation may indicate a loss of potential impact within the ADHD population. On the other hand, this limited response from male participants may be more reflective of the survey itself than the participation within these programs (Grinell, 2008). Before conclusions can be made, further research needs to investigate potential lack of diverse demographics within these programs so future development of youth programs within these associations can address such limitations. Expanding demographics may require recruitment that takes a wider approach in reaching a larger youth population or potentially adding in programs that target an interest more inclined to attract participants who are not usually involved in these programs. Survey respondents documented interest in social, non-riding programs. As such, that might be an avenue to explore for future recruitment purposes. Furthermore, this approach may especially be useful for the associations outside of AQHA that are not showing significant participation by ADHD youth according to respondents within this current study. Since almost half of those responding were recruited for these youth programs directly through their involvement within these associations, membership drives targeting youth and particularly males may assist these individuals in gaining access to these programs and promoting participation of a more diverse audience. Findings from this study will guide the facilitation of

gaining participation from populations that have not historically been involved in these youth programs helping to promote diversity and inclusion within a larger spectrum of the U.S. population in horse breed association youth programs.

Conclusions

Equine interaction has been shown to benefit the health and wellness of youth struggling with mental health disorders like ADHD. Accessbility, nonetheless, to these programs is often limiting. Although not developed as a therapeutic intervention, horse breed association youth programs offer an alternative approach for ADHD youth and their families to gain access to equine interaction experiences outside of traditional therapeutic interventions. In the current study, while participation can be costly, these programs do promote life skill development along with facilitating academic and career goals. These benefits may be of value to ADHD youth where accessibility to equine interaction opportunities is limited. Nonethless, further research is needed to evaluate ways for expansion including funding opportunities and recruitment avenues that target youth who may have been overlooked in previous youth programming.

Author Statements

Study protocol was reviewed by an institutional review board with approval secured prior to initiation of the study. Authors declare no funding nor competing interests associated with this study.

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Appendix: Horse Breed Association Youth Program Survey

1. How old are you?
    a. 18–25 yrs
    b. 25–40 yrs
    c. 40–60 yrs
    d. Other

2. What is your gender?
    a. Male
    b. Female

3. How many horse breed associations have your family participated in the youth programs within these associations?
    a. 1
    b. 2–3
    c. 4–5
    d. 6 or more
    e. NA

4. How did you hear about the youth programs associated with horse breed associations (circle all that applies)?
    a. 4-H/FFA member
    b. Extension employee/FFA advisor
    c. Member of these associations
    d. Employee of these associations
    e. Advertisements
    f. Other: _____
    g. NA

5. How has the youth programs of these horse breed associations directly impacted you and/or your child (circle all that apply)?
    a. Participated in youth classes with a horse at breed association shows
    b. Participated within non-riding, educational activities associated with these programs
    c. Participated within meetings and/or conventions associated with these programs
    d. Volunteered for various shows and/or other activities associated with these programs
    e. Won a scholarship associated with these programs
    f. Won trophies and/or other prizes associated with these programs
    g. Other: _____
    h. NA

6. How have you financially supported the youth programs within these horse breed associations (circle all that apply)?
    a. Through participation in local shows (paid entry fees)
    b. Through participation in world shows (paid entry fees)
    c. Through participation in non-riding activities (paid fees associated with educational contests, meetings, conventions, and/or other youth activities)

   d. Donated funds and/or provided sponsorships for shows and/or other association activities
   e. Other: _____
   f. NA

7. If you bought a horse to specifically participate within these horse breed association youth programs, what is the total amount you have spent on that horse?
   a. Under $500
   b. $500–$1,000
   c. $1,000–$2,500
   d. $2,500–$5,000
   e. $5,000–$10,000
   f. $10,000–$20,000
   g. >$20,000
   h. NA

8. If you or your child participated in these horse breed association youth programs, how many horses did you or your child purchase to participate within these programs?
   a. 1–2
   b. 2–5
   c. 5–10
   d. 10+
   e. NA

9. If you or your child participated in these horse breed association youth programs, how much money in scholarship funds and/or prizes (estimated value of prizes) have you or your child received through these programs?
   a. Under $1,000
   b. $1,000–$2,000
   c. $2,000–$3,000
   d. $3,000–$5,000
   e. $5,000–$10,000
   f. >$10,000
   g. NA

10. If you or your child participated in these horse breed association youth programs, how much investment besides the costs associated with the purchase of the horse did your family put into the horses that you utilized for participating within these programs?
   a. < $1,000
   b. $1,000–$2,500
   c. $2,500–$5,000
   d. $5,000–$10,000
   e. $10,000–$20,000
   f. $20,000–$40,000
   g. >$40,000
   h. NA

11. If you or your child participated in these horse breed association youth programs, what breed association did you participate in (circle all that apply)?
    a. AQHA
    b. APHA
    c. PtHA
    d. ApHC
    e. PHBA
    f. Other: _____
    g. NA

12. If you or your child participated in these horse breed association youth programs, has the experience within these programs positively impacted you or your child's goals for college and future education?
    a. Definitely yes
    b. Somewhat yes
    c. Somewhat no
    d. Definitely no
    e. NA

13. If you or your child participated in these horse breed association youth programs, has the experience within these programs positively impacted you or your child's career goal?
    a. Definitely yes
    b. Somewhat yes
    c. Somewhat no
    d. Definitely no
    e. NA

14. How long have you or your child been involved in horse breed association youth programs?
    a. Less than 1 year
    b. 1–3 yrs
    c. 3–5 yrs
    d. 5–10 yrs
    e. >10 yrs
    f. NA

15. What has been your role associated with horse breed association youth programs (circle all that applies)?
    a. Youth member
    b. Parent
    c. Volunteer
    d. Extension employee/FFA advisor
    e. Employee of an association
    f. Horse show professional (trainer, judge, show management, scribe, ring steward)
    g. Other: _____
    h. NA

16. Below is a list of life skills. For each life skill, indicate how participation in horse breed association youth programs may have improved yours or your child's abilities associated with that life skill. Only Check one box for each life skill.

	No improvement	Some improvement	Good improvement	Large improvement	Not applicable
Decision-making					
Time management					
Problem solving					
Goal setting					
Building friendships					
Professional networking					
Public speaking					
Respect					
Effective listening					
Financial responsibility					

Comment Section: In the following, please provide further feedback concerning the survey, survey process, and/or horse breed association youth programs.